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PROCEEDINGS

OF THE

NATIONAL PARK CONFERENCE

HELD AT THE

YELLOWSTONE NATIONAL PARK
SEPTEMBER 11 AND 12, 1911

WASHINGTON
GOVERNMENT PRINTING OFFICE
1912

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PROCEEDINGS OF THE NATIONAL PARK CONFERENCE HELD AT YELLOWSTONE NATIONAL PARK SEPTEMBER 11 AND 12, 1911.

INTRODUCTION.

On September 11 and 12 there was held in the Yellowstone National Park the first conference of departmental officials and other persons interested in the development and administration of the national parks. There were present at this conference the superintendents of the various parks, the principal Washington officers of the Department of the Interior who handle national park matters, and representatives of the concessioners, of the transportation companies tributary to the parks, and of independent organizations that have been interested in the problems of park administration. All persons holding concessions in the national parks were invited to be present and all of the railroads tributary to the parks were invited to send representatives. Every important interest connected with the parks both on the side of the Government and on the side of the concessioners and railroads was adequately represented. The purpose of the conference was to consider all the questions that arise in the administration of these reservations in order that the department might be able to make such changes in the regulations and to foster such development as might be for the best interest of the public. It should be distinctly understood that the views herein expressed are those of the individuals presenting them, and that the department gives no official sanction to the facts stated or to the recommendations made.

PERSONS ATTENDING THE CONFERENCE.

W. F. Arant, superintendent Crater Lake National Park, Klamath Falls, Oreg.
C. J. Blanchard, statistician, United States Reclamation Service, Washington, D. C.
W. M. Boland, ranger, Wind Cave National Park, Hot Springs, S. Dak.
Frank Bond, chief clerk, General Land Office, Washington, D. C.
Lieut. Col. L. M. Brett, acting superintendent Yellowstone National Park, Yellowstone Park, Wyo.
Eugene S. Bruce, expert lumberman, Forest Service, Washington, D. C.
Josef Brunner, assistant, Bureau of Entomology, Columbia Falls, Mont.
R. C. Bryant, Bryant camps, Yellowstone Park, Wyo.
H. E. Burke, assistant, Bureau of Entomology, Yreka, Cal.
D. E. Burley, general passenger agent Oregon Short Line Railroad, Salt Lake City, Utah.
J. B. Callahan, Finance Division, office of the Secretary, Department of the Interior, Washington, D. C.
H. W. Child, president Yellowstone Park Hotel Co., Yellowstone Park, Wyo.
Thomas Cooper, assistant to the president Northern Pacific Railway, St. Paul, Minn.

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Foster Curry, representative of Yosemite Park concessioner, Yosemite, Cal.
William T. S. Curtis, representative of Hot Springs concessioners, Washington, D. C.
Dr. Charles Dake, president Federal Registration Board, Hot Springs, Ark.
W. D. Edmonston, assistant, Bureau of Entomology, Baker, Oreg.
Charles S. Fee, passenger traffic manager Southern Pacific Co., San Francisco, Cal.
W. L. Fisher, Secretary of the Interior, Washington, D. C.
Maj. William W. Forsyth, acting superintendent Yosemite National Park, Yosemite, Cal.
Gerrit Fort, passenger traffic manager Oregon Short Line Railroad, Omaha, Nebr.
W. J. French, superintendent Platt National Park, Sulphur, Okla.
Walter Fry, ranger, Sequoia and General Grant National Parks, Three Rivers, Cal.
L. C. Gilman, assistant to the president Great Northern Railway Co., St. Paul, Minn.
H. S. Graves, Forester, Forest Service, Washington, D. C.
E. S. Hall, superintendent Mount Rainier National Park, Ashford, Wash.
Maj. Harry M. Hallock, medical director, Hot Springs Reservation, Hot Springs, Ark.
J. M. Hannaford, second vice president Northern Pacific Railway, St. Paul, Minn.
F. F. Harvey, Atchison, Topeka & Santa Fe Railway System, Chicago, Ill.
L. T. Hay, manager, Arlington Hotel Co., Hot Springs, Ark.
F. J. Haynes, president Monida & Yellowstone Stage Co., Yellowstone Park, Wyo.
H. H. Hays, general agent, Wylie Permanent Camping Co., Yellowstone Park, Wyo.
R. D. Heinl, correspondent, Leslie's Weekly, Washington, D. C.
W. J. Henderson, concessioner, Yellowstone National Park, Yellowstone Park, Wyo.
James R. Hickey, vice president Monida & Yellowstone Stage Co., Yellowstone Park, Wyo.
L. W. Hill, president Great Northern Railway Co., St. Paul, Minn.
A. D. Hopkins, expert in charge forest insect investigations, Bureau of Entomology, Washington, D. C.
Maj. James B. Hughes, acting superintendent Sequoia and General Grant National Parks, Three Rivers, Cal.
W. E. Kelly, office of chief clerk, Department of the Interior, Washington, D. C.
E. A. Keys, inspector, Department of the Interior, Spokane, Wash.
H. E. Klamer, concessioner, Yellowstone National Park, Yellowstone Park, Wyo.
George H. Lamar, representative of Wylie Permanent Camping Co., Washington, D. C.
O. W. Lehmer, superintendent and traffic manager, Yosemite Valley Railroad, Merced, Cal.
W. R. Logan, superintendent Glacier National Park, Belton, Mont.
E. B. Linnen, inspector, Department of the Interior, Washington, D. C.
Alexander Lyall, concessioner, Yellowstone National Park, Yellowstone Park, Wyo.
R. B. Marshall, chief geographer, Geological Survey, Washington, D. C.
W. G. Maurice, Maurice Bath House, Hot Springs, Ark.
H. F. McCabe, Interior Department, Washington, D. C.
J. Horace McFarland, president American Civic Association, Harrisburg, Pa.
A. W. Miles, president Wylie Permanent Camping Co., Yellowstone Park, Wyo.
H. H. Myers, superintendent Hot Springs Reservation, Hot Springs, Ark.
J. H. Norris, inspector, Interior Department, Washington, D. C.
Allen C. Orrick, representing Palace Bath House, Hot Springs, Ark.
G. A. Pryor, concessioner, Yellowstone National Park, Yellowstone Park, Wyo.
L. F. Schmeckebier, clerk in charge of publications, Interior Department, Washington, D. C.
W. M. Sell, concessioner, Yosemite National Park, Yosemite, Cal.
D. A. Sherfey, resident engineer, Yosemite National Park, Yosemite, Cal.
S. E. Shoemaker, ranger, Mesa Verde National Park, Mancos, Colo.
Hoke Smith, Great Northern Railway, St. Paul, Minn.
R. E. L. Smith, representing Shaw & Powell, Yellowstone National Park concessioners, Washington, D. C.
W. G. Steel, president Crater Lake Co., Crater Lake, Oreg.
E. M. Sunderland, architect, Ouray Building, Washington, D. C.
J. P. Ternes, president Tacoma Carriage & Baggage Transfer Co., Tacoma, Wash.
C. A. Thompson, Assistant Secretary of the Interior, Washington, D. C.
C. S. Ucker, chief clerk, Department of the Interior, Washington, D. C.
George Uhler, supervising inspector general, Steamboat-Inspection Service, Department of Commerce and Labor, Washington, D. C.
A. G. Wells, general manager Coast Lines, Atchison, Topeka & Santa Fe Railway System, Los Angeles, Cal.
Richard Wright, acting superintendent Mesa Verde National Park, Mancos, Colo.
C. M. Ziebach, acting superintendent Sullys Hill National Park, Fort Totten, N. Dak.

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EVENING SESSION, SEPTEMBER 11.

INTRODUCTORY REMARKS BY HON. WALTER L. FISHER, Secretary of the Interior.

Gentlemen: If you will pardon me for assuming the direction of the meeting we will proceed to business. I am taking the initiative because this conference has been called by the Secretary of the Interior to discuss the general subject of the national parks in this country. We will discuss the matter of the present condition of the national parks and what can best be done to promote the welfare of the parks and make them better for the purpose for which they were created. Having called the conference, I shall simply act as general director, so that we may avail ourselves of the advantages of proceeding in a parliamentary manner. In talking this matter over with those who have had most to do with it, we have reached the conclusion that progress will be promoted if we discuss this subject under three general heads—transportation, concessions within the parks, and the subject of park administration from the point of view of those charged with that duty.

Before entering upon the discussion of these general topics, it may not be inappropriate for me to say that this large gathering of men of affairs indicates the interest which is taken in this whole subject and is very gratifying to me and those who are associated with me in the administration of this very important work. Since I became Secretary of the Interior and after discussion of the question with those officials at Washington intimately connected with the administration of the national parks, I have formed the opinion that the parks have not received the attention they deserve. They have grown up like Topsy, and no one has been particularly concerned with them. This conference has been called for the purpose of discussing the difficulties met with in the various parks, in order that the difficulties met with in one park may be avoided in the others, and in order that the plans which have been found successful in one park may be adopted in the others.

The attendance in the parks has not increased as those most familiar with them believe it should have increased. While there has been manifested widespread interest in the parks, still the numerical attendance has not shown the increase which it is believed should be shown during the past 10 years, and particularly during the past 5 years. The first question, therefore, is how to direct the attention of the people to these parks in such a way that the people will know how to get to them and what the expense will be in getting to them. That, gentlemen, is a subject about which we are very much concerned, and it is a problem in solving which the railroads can be of great assistance. I do not necessarily mean financial assistance, although I do not wish to ignore that feature of the situation. We thoroughly appreciate the expenditures

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which the railroads have made in many instances for the development of the parks; I mean expenditures made in the furnishing of increased facilities in getting to the parks, and particularly the work of publicity which they are carrying on. We know that costs them money, and although the inducement is a financial return to the railroads, it is an enlightened selfishness which is entitled to our grateful recognition. We think that the railroads may have some valuable suggestions to make to us—something, perhaps, which they may have been thinking they would like to do if the park officials and the Department of the Interior would cooperate with them. In other words, the way to start this conference is with the question of how we are going to get to the parks. After we get to them, other questions will arise and we can discuss what is going to happen from that point on. I would be very glad, indeed, to open the discussion by hearing some remarks from Mr. Hill, president of the Great Northern Railway.

REMARKS BY MR. LOUIS W. HILL, President of the Great Northern Railway Co.

Mr. Secretary and gentlemen: I will try to help you start this meeting and will endeavor to be as brief as possible and take up as little of the time of the assembly as I may in my remarks, because, as I understand it, the meeting was called primarily for the benefit of those directly interested in the parks, the superintendents and other officials. The railroads, of course, have nothing to do with the direction of the parks. Our relations with the parks are naturally very close, and I believe they should be closer. It is, I believe, most fortunate from every standpoint that this conference has been called, indicating, as it does, the great interest taken by the present Secretary of the Interior in the national parks. It is the first time the parks have received such attention, and I believe the excellent attendance here to-day indicates that it is appreciated. It is fitting that the first conference should be held in Yellowstone Park, the first of the national parks to be created. This park was started many years ago, and there are many reasons why it has not gone ahead as it should have gone. Glacier Park in Montana is the most recent of the parks to be created and is the one in which we of the Great Northern are most interested, because our lines touch it, but we are also interested in every national park in the United States, although our especial interest lies in Glacier, Yellowstone, Yosemite, and Crater Lake. This is because it is practically impossible to sell a round trip ticket to a man for any one park, the public always wanting to go from one park to another.

Thousands of Americans go to Canada every year for things they might just as well get in the United States. They go there for homes and they go there to see the scenery in the Canadian Rockies. Recently when I was there studying conditions I was told that five to six hundred people visit the Canadian Rockies daily. This shows the possibilities for Glacier

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Park. I obtained the information from reliable business men. Ninety-five per cent of the people going to Canada are Americans. The reason for it is the advertising which is being done by the Canadians. As Mr. Fisher has said, the advertising largely falls to the railroads and those who are interested commercially in the parks, although the Government has done some, and in the future we all want to go ahead and do a great deal more in the way of advertising. This will change the current of travel from Europe and Canada to this country. I think it is safe to say that what took 40 years in the development of this park, Yellowstone, will be done, with proper development work, in three years in Glacier Park. There is no reason why within three or four years we should not have an attendance in Glacier equal to that which we have here in Yellowstone; at least, I know of no reason why this could not be done, and we are going ahead with this in view in our "See America First" campaign. So far as our railroad is concerned in the four parks in which we are most interested, we want to cooperate in advertising, and if there are any other ways in which we can assist we will do it. Before much can be done in this line, however, we must have trails, telephone lines, wagon roads, and camps for taking care of tourists. All of this will cost a good deal of money, and we can not expect to do too much at once. This year there have been considerably more than 3,000 people in Glacier, and so far we have only advertised Glacier in a sentimental way. There are not sufficient accommodations in Glacier for taking care of the tourists. We have established several camps, but we do not wish to go into the hotel business; we wish to get out of it and confine ourselves strictly to the business of getting the people there just as soon as we can, but it is difficult to get capital interested in this kind of pioneer work. With the cooperation and assistance of the Government we hope within two or three years to get financial people interested in the park and then we can get out and attend to railroading. The railroads are greatly interested in the passenger traffic to the parks. Every passenger that goes to the national parks, wherever he may be, represents practically a net earning. We already have the train facilities for taking care of the regular traffic and the tourist earnings are practically net, as long as they do not require extra train service.

The SECRETARY. Perhaps, following what seems to be the natural line of approach, it would be a good plan to hear from those who are interested in the park where we now are. When we discuss transportation facilities in connection with Yellowstone Park—transportation leading to and away from the park, as distinct from that within the park—there are three railroads especially concerned. I believe the first on the scene was the Northern Pacific, and if Mr. Cooper, assistant to the president of the Northern Pacific, will favor us with such suggestions as he may wish to offer, we would be pleased to hear from him.

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REMARKS BY MR. THOMAS COOPER, Assistant to the President, Northern Pacific Railway.

Mr. Secretary and gentlemen: It is peculiarly fitting that the first meeting of Government officials and others specially interested in the national parks should be held in the Yellowstone National Park, the first that was created, and the establishment of which inaugurated the wise policy of preserving to the people of the United States forever the magnificent playgrounds with which nature has endowed them.

The principal purpose of this meeting is to consider in what manner the number of visitors to the various parks can be increased, and to this feature, from the point of view of the railroads, my few remarks will be devoted.

The passenger rates to this park are about 1½ cents per mile, which, considering the high grade of service demanded by this class of travel, makes these rates the lowest to be found anywhere in the world. The railroads justify themselves in making these very low rates on the theory that the business will not otherwise move. But in these days of close supervision of the railroads by national and State railroad commissions there is a danger that some of these commissions may take the position that in making these rates the railroads are discriminating in favor of a class of travel which may be characterized as luxury and placing a burden upon their regular business. Therefore, no matter how willing railroads may be to cooperate in any movement toward increasing travel to the parks, they will feel themselves restrained, for the reason stated, from making any lower rates than now prevail. Hence, as it appears to me, we may as well dismiss from our minds any idea that a decrease in railroad rates can be made to induce additional traffic.

As to advertising the parks, it will be conceded that practically all that has been done in this respect has been accomplished by the various railroads, excepting, of course, that class of advertising, which is the most valuable of all, which is done by every visitor through the parks when they tell their friends and neighbors of the wonderful things they have seen. But the character of this class of advertising depends very largely on the feelings which each visitor to the park carries away. There are, of course, some visitors whose love for the beautiful and wonderful is such as to overcome the smaller annoyances and discomforts that attend the trip to a more or less degree; but I think we will all agree that in order to secure the best advertising from visitors the discomforts of the trip must be reduced to a minimum, and to secure this result there must be an earnest cooperation of the railroads, the Government, and the concessioners. The railroads feel that in this respect they are doing their part, or, to put it in another way, that they are giving maximum service for a minimum compensation. I have never heard any serious complaints about the service given by the concessioners or the rates charged by them. Doubtless there are some

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details of this service that can be improved, as there are in the railroad service, but I think I am safe in saying that in a general way the service of both the railroads and the concessioners is of high standard and their charges reasonable.

It is now in order to consider whether the Government has done or is doing its part to make the parks attractive to visitors, and in what I have to say in this respect it will be understood that my criticisms are directed to Congress, not to the administration, as I have no doubt the officers charged with the administration of the parks have done all that could reasonably be expected of them with the appropriations available. But I think we will all agree that Congress has been parsimonious in its treatment of the national parks to a degree that largely defeats the very purpose of their creation.

I will not go into detail on this subject, as I am not sufficiently familiar with the needs of the various parks to do so, but I will speak of one particular feature which happened in this very park this summer. It appears that the appropriation for sprinkling was exhausted about August 1; thereafter, for about 30 days, until the first rain came, the roads were in such condition that the dust was not only a discomfort, but a positive menace to health—so much so that some visitors, after their long journey to reach the park, turned around at the end of the first day's trip and went back. We can well realize the kind of advertising that the parks will receive from the majority of those who visited this park during the month of August. We may as well accept it as a fact that the majority of the people who can afford a trip to the national parks are of a class who are used in their daily life to a reasonable degree of comfort, and no matter how ardent their love of nature may be they will not make the park trip unless it can be done with a reasonable degree of comfort and safety.

From all of which it seems to me apparent that the real solution of the question we are considering, how to increase the number of visitors to the national parks, is to secure larger appropriations from Congress, in order that travel within the parks may be made with more comfort, and that we should all use our influence with Congress to secure such additional appropriations.

The SECRETARY. During the course of this conference I shall take the liberty to break in occasionally to make such comment as seems to be pertinent, as I shall expect you gentlemen to make suggestions. In connection with what Mr. Cooper has stated, perhaps it would be of use in future discussions here if I called your attention to one or two things. In the first place, as to the advertising done by the Government. This last spring, for the first time, the Department of the Interior, through its employees in Washington, prepared and furnished to the newspaper press of the country certain articles, with illustrations, with reference to the national parks and reservations. Very gratifying results have been

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obtained from this work. The eagerness with which the newspapers sought this material, the avidity with which they took it, the willingness with which they published it, and the amount of favorable comment which came to me in a perfectly casual manner were all exceedingly gratifying. I think I can say to Mr. Cooper that, having no appropriation for publicity, we have done everything we could during the past few months in that direction. If we are to do more in that line or in other directions, we have got to come to the second step, namely, the getting of more liberal appropriations for these purposes. This is a matter that is in the hands of Congress, and I am sure the railroad men and others will help us out in that direction. In this connection it would not be inappropriate now to call your attention to the fact that the expenditure of many of the appropriations made by Congress for the improvement of the national parks, including the sprinkling of the roads, is left to the War Department—to the Engineer Corps of the Army—while the administration of the parks is turned over to the Department of the Interior. Even here in Yellowstone the superintendent, although an Army officer, was not given an opportunity to be heard in the preparation of the estimates. Perhaps that will illustrate to you as well as anything I could say how unsystematic, unscientific, and uneconomic the provision for the administration of the parks has been. I mention these things because many of those present may not have had their attention called to them before, and I believe everybody here can be of great assistance, individually and collectively, in rectifying some of these unintentional mistakes.

Following the procedure which I have already outlined, we should hear from the Oregon Short Line before we leave Yellowstone, and I will ask Mr. D. E. Burley, general passenger agent of that road, if he will be good enough to set forth the views of his company with reference to the national parks.

Mr. BURLEY. Although we are greatly interested in the parks and have been listening to the discussion and addresses here with much interest, I believe I have nothing of value to say at this time, so I will ask to be excused.

The SECRETARY. The next park we will take up is the Yosemite, and in that connection perhaps Mr. Lehmer, traffic manager of the Yosemite Valley Railroad, will give us his views with relation to the general question of the national parks.

TRANSPORTATION AND ITS RELATION TO NATIONAL PARKS, BY O. W. LEHMER, Superintendent and Traffic Manager, Yosemite Valley Railroad.

In discussing the subject of transportation and its relation to national parks our ideas are based largely on existing conditions in the Yosemite National Park, as we are more familiar with conditions there than elsewhere; but we believe they will apply with equal force to all national parks.

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Transportation as commonly understood means the handling of freight and passenger business by common carrier. This I believe in most all our parks now is accomplished by railroads in connection with stage and wagon haul.

Our national parks should be our national playgrounds, and while they are not universally so considered to-day, the time is not far distant when we believe they will be looked upon as being such by the majority of the people. It is a well-known fact that each year finds fewer places open to those who wish to spend their vacations out of doors, where they can commune with nature away from the activities of everyday life.

Our parks, in order to attract the people, must be out of the ordinary, and it goes without saying that our national parks have this characteristic, or our National Government would not have set them apart for the use of the people. I have been through our wonderful park here, and I know it has all and more than the most enthusiastic lover of nature claims for it. I have been in the beautiful Yosemite many times, and each time find something new to charm us.

These parks belonging to the people should be made so accessible that all who wish to do so may behold their beauties and wonders. Transportation, as in nearly all developments, bears a very close relationship to the full enjoyment and benefit to be derived from the national parks. Not so many years ago our famous Yosemite was accessible only to the young and hardy, who were able to endure the hardships of a ride of 100 miles on horseback over trails which were hazardous and few there were who would venture upon the trip. Later roads were built to the valley, but needless to say that the early stage coaches running over the hot, dusty plains and mountainous roads were not conducive to the comfort and ease the traveling public is entitled to. And not until the year 1907, when the Yosemite Valley Railroad was completed to its present terminus at the park line, was the wonderful valley placed within easy reach of young and old, weak and strong, rich and poor. Now the traveler can leave San Francisco in the morning and in the evening be at the entrance of the park, with all the modern comforts of travel, or he can leave San Francisco in the evening in a Pullman car and eat his breakfast in a first-class hotel at the park entrance.

The rate from San Francisco to Yosemite and return, including the stage ride through the park to all hotels and camps, is only $22.35, and often during the season special excursions are run for 10-day trips, all expenses paid, which reduces the cost at least one-third over the regular rates. Before the advent of the railroad the transportation from San Francisco alone was about $55, and, as two days were required in each direction to make the trip, about $20 more were required to pay expenses, making a total expense of $75. Thus it is that modern transportation facilities bring the parks within easy reach of the people.

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A noted writer and traveler whom we recently accompanied through Yosemite, after seeing the difficulties encountered in building the railroad and the enormous cost of construction, said that surely the men who put their money into the enterprise are benefactors of the people and deserve a vote of thanks for the chances they have taken.

Transportation to the parks is largely affected by conditions within the parks. Ample accommodations must be provided for the visitors. Congested conditions immediately check the flow of travel, as people will not be inconvenienced by such conditions when they can avoid it. Accommodations should be provided for all classes and conditions of people. The wage earner with only a limited amount of money for his outing should not be barred from enjoying the beauties of nature on account of prices being beyond his means. On the other hand, there are people who are able and who wish to pay for the best and will not travel to places where they can not be so accommodated, hence the necessity of hotel accommodations which are up to date with all the conveniences of the first-class hotel of the city.

Until these desirable conditions prevail in the parks travel will be restricted and the people as a whole will not derive their full benefit and pleasure from the national parks. We believe the Government should take sufficient pride and interest in this matter to see that everything possible is done to properly take care of all its guests. The same traveler previously referred to said he was ashamed of his Uncle Sam, seeing that nature had done so much for Yosemite and man so little. These remarks are not intended as a reflection on the direct management of the parks, as I believe the men intrusted with its keeping have done all they could with the limited means at their disposal.

We believe that for the Yosemite Park, at least, a careful study should be made of its needs and a sufficient appropriation should be made, the expenditures to extend over a period of years, working out a comprehensive plan of improvements, such as would be a credit to the United States. Unless this is done, we never will receive the full benefits with the money appropriated and used for improvements.

We also believe that rail transportation should be extended to the gates of Yosemite or to the Pohono Bridge, which would bring the traveler right into the doorway of the great wonderland. This, of course, would have to be an electric line, as a steam road could not operate over the grades here encountered. This would in no way mar the beauties of the valley proper and would leave only a short carriage drive of 4 or 5 miles to all points of interest, camps, and hotels in the valley over a level road. This would be desirable not only on account of the tourist travel, but would reduce the team haul on all Government freight, as well as supplies for the hotels and camps, thus reducing the cost of providing for the travel. It would also shorten the wagon road by at least 9 miles, saving thousands of dollars each year on account of repairing and sprinkling the wagon road.

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If the management of the parks is not in position to provide these improvements, which we believe for many reasons they should do, we believe that the conditions and restrictions should not be so onerous as to discourage individuals from undertaking these improvements. Railroad companies handling the business to the park lines usually have a hard time making their lines pay on account of the nature of the country through which they pass. Cost of construction is excessive and the country usually sparsely settled and very little freight business can be developed and the local passenger travel is limited. Hence the principal revenue is from the passenger travel to the park in its season. It can readily be seen that these transportation companies need all the assistance possible from those in control of the parks in the way of providing proper and adequate facilities for the accommodation of the people they take there, as transportation is limited to the facilities for taking care of the people.

The SECRETARY. We would be glad to hear from Mr. Fee, of the Southern Pacific, if he will oblige us.

REMARKS BY MR. CHARLES S. FEE, Passenger Traffic Manager, Southern Pacific Co.

The road with which I am connected, the Southern Pacific, is very largely interested in tourist travel, especially in travel to the Yosemite. We are interested in a great measure at the same time in travel to Crater Lake, Mount Rainier, and to this park. We are giving a great deal of attention to attracting business to them and we are advertising them as intelligently, persistently, and effectively as we know how. I do not have to repeat what is well known, however—that millions of dollars leave the United States each year and are spent in foreign lands. This is because of the way the people of those foreign lands take care of the visitors. We have only to look to Switzerland to see how that country takes care of her visitors. I do not think that in the way of assets in the line of scenery the United States need take a back seat when compared with any country on the face of the globe. Yellowstone Park will stand alone in its class with the possible exception of one or two others equally well situated, and it is to the development of the business to these parks that the railroads with which I am connected are devoting their very best efforts. I do not think anybody will take issue with me when I say that the best advertising in the world is not the written word nor the printed word, but is the spoken word. If you can send a man back home after having visited Yellowstone Park, Yosemite Park, and the other parks and have him go back thoroughly satisfied with his trip and an enthusiastic admirer of the parks, you have accomplished more than could be accomplished by any general advertising campaign.

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I have been especially interested in the last few years in the development of the business of Yosemite Park. Mr. Lehmer, our friends of the Santa Fe, and others are acquainted with the present rather unsatisfactory condition of the park, and Maj. Forsyth has referred to it in his recent reports. I very much hope that these irregularities, lack of facilities, and lack of development, especially in the matter of roadways in and about Yosemite, including Mariposa Grove, may have more earnest attention on the part of the authorities in Washington. It is needless for me to say that we will bring all reasonable pressure to bear upon our Representatives in Congress, to the end that more adequate appropriations may be made for the parks. In the matter of transportation to the parks I think it is all that could be desired. I agree with Mr. Cooper that the public can not fairly ask that the railroads make any further reduction in rates. The fact of the matter is that the rate mentioned by Mr. Cooper, namely, 1½ cents, is very, very low, as low as or lower than that to resorts in any other country. Some of the railroads interested in this travel make rates—are obliged to make them—even lower rates than those mentioned by Mr. Cooper.

Now, as to advertising. I was very much interested in this question recently when I met a man on an incoming steamer to San Francisco. He hailed from Sydney, Australia, and was on his way to England. I learned that he had bought his ticket direct for New York and expected to go through without stopping over and go aboard his ship. That did not suit me. I thought it did not look just right, and I said to him, "It is not possible that you are going through from San Francisco to New York and then to England without visiting the Yosemite, the Grand Canyon, or Yellowstone Park?" He told me he had made his plans and did not wish to change them. After considerable persuasion he decided to defer his sailing from New York, and at my suggestion he made a side trip from San Francisco to Yosemite. I looked forward with considerable interest to seeing him on his return. He greeted me smilingly, and said, "Before I make any other remarks I wish to say that I am very glad I took your advice and visited Yosemite Park and the Mariposa Grove of big trees; but there is something else. I thought in Australia we knew something of dust, but you can outdo us for dusty roads in the Yosemite. It is a shame that in a magnificent park like Yosemite there are so few first-class roads and that better provision is not made for laying the dust." I explained to him that some of the roads are not within the jurisdiction of the Government and that those which were under the control of the Government were likely to be in good condition. My explanation was not entirely satisfactory to him; but he said that when he returned to Australia he would advise all his friends and neighbors who might get to San Francisco to take a trip to Yosemite, provided the season and the condition of the roads were favorable. I then asked him about a trip to

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Yellowstone Park—if he was not going to see that park. He said: "No; you will have to excuse me. I have been hearing something of the conditions in Yellowstone as to the dust, and if they are only half true I do not care to make the trip, so I will take my train for New York." People who come here and visit our parks and resorts and find the hotel accommodations not first class, the roads not perfectly kept, go away and furnish about the worst advertising in the world.

I mention these matters to emphasize the fact that if the spoken word is the best advertising in the world, then it behooves everyone interested in our parks and resorts to see that they are so kept that the visitors will go away having had a pleasant and agreeable time and having seen the parks to the best possible advantage. So far as the company in which I am interested is concerned, we are only too anxious to cooperate.

The SECRETARY. We will now hear from Mr. Wells.

REMARKS BY MR. A. G. WELLS, General Manager Coast lines Atchison, Topeka & Santa Fe Railway System.

Mr. Secretary and gentlemen: In one of Winston Churchill's books, I think it is, there is an anecdote, the recital of which is credited to Abraham Lincoln, of blessed memory, and which tells of a certain politician who, when he got on his feet and commenced to talk to an assemblage of persons, could not shut off the flow of words until means were afforded him of sitting down, and on one occasion in making a speech from a platform on which there were no seats he was compelled to resort to the expedient of having a chair handed to him from the audience in order that he might sit down and so close his oration. I am just like that man, only different. It is difficult for me to talk when standing on my feet, hence have written, and, with your permission, will read what little I have to offer on the subject under discussion.

The relation which transportation bears to the national parks and national monuments is a very close one. These great wonders of nature, wisely set aside by the Government for the benefit of the people, would be altogether inaccessible but for transportation; in the larger sense that furnished by the great railways in order that visitors may be brought to the gateways of the reserves, and in the more restricted way that supplied by the stage lines within the boundaries of the parks. The age we live in is luxurious. Without transportation of the two kinds named, and their important and indispensable adjuncts—good hotels—these great natural creations would be seen by only a few enthusiasts. In some instances the transportation companies of the larger sort, in addition to expending the capital necessary to land people at the doors of the parks, have also been the pioneers in furnishing the money needful to install the

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hotels, build roads, and supply as well the equipment and stock for the establishment of the requisite transportation of the minor sort within the limits of the parks and monuments.

I represent one of the larger transportation companies which has so invested its capital, and while I am not here to advocate monopoly of the public domain, which is unfashionable, and rightly so, being contrary to approved morals and repugnant to the policy of good government, remembering that my theme is "The relation of transportation to the national parks and national monuments," I feel that I am hewing to the line of my text, Mr. Secretary, when I urge upon the department of the Government of which you are the head a fair, broad-minded, liberal policy toward the transportation companies in the matter of concessions, unhampered by the howl of the camp follower, who comes in the wake of the pioneer, endeavors to set himself up in business, and failing because of lack of adequate capital or ability, or both, affects to see in every legitimate concession granted to the transportation company an undue preference extended to a hated monopoly. Then again I would urge upon your attention the desirability of eliminating from national parks and monuments, wherever he may exist, the obstructionist, who, holding bogus claims under the land laws, or through some other illegitimate means, prevents the building of roads or the installation of other convenient facilities designed for the benefit of the people visiting these great American pleasure grounds.

It also seems to me a proper function of Government that it should defray the cost of building and maintaining adequate roadways in both the national parks and national monuments, as has been done to a large extent here in the Yellowstone. In the national monument of the Grand Canyon the Santa Fe Railway is now engaged in building a highway along the rim of the canyon under a permit granted by the Forestry Department, which very properly requires that the road shall be open to all comers and free of tolls. The expenditure of the very considerable amount of money by the railway company for this road is not purely philanthropic. It is thought that the existence of this road will stimulate travel to the canyon, but I submit that our Government is too big not to charge itself with the cost of providing roadways in its national parks and monuments so that the public may enjoy their beauty in comfort. Municipalities recognize the propriety of this procedure in the upkeep of their parks, and in some of our Commonwealths, like Massachusetts, the State roads are maintained to a high standard of efficiency at the public expense. Hence I make an earnest plea, and in so doing hope I may be absolved from a suspicion of selfishness, for a more liberal policy by the Federal Government in its treatment of the national parks and national monuments.

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The SECRETARY. I suppose everybody who has traveled over the Santa Fe system has heard the name of Harvey; and especially, in view of the wide field that the railroads fill in relation to national parks, it would be exceedingly inappropriate if we did not hear from Mr. Harvey at this time.

REMARKS BY MR. F. F. HARVEY, Atchison, Topeka & Santa Fe Railway System.

Mr. Secretary and gentlemen: I had no idea of being called upon this evening, but I will say that we are interested in the Grand Canyon. The canyon is a national monument and not a national park, and for that reason I fancy it is not considered as being entitled to the same recognition and consideration as a national park. We have, however, demonstrated, I think, our right to a place as "a point of interest" at least. The canyon railroad was built about 10 years ago—we have been up there about seven years. In that time I have seen the travel increase to the canyon from a few hundred a year to last year something over 26,000, and this year the visitors will run somewhere between 30,000 and 35,000. Our travel reaches the rim of the canyon; in the summer time the drives are in good condition and we can go around it with some ease and comfort; but, unfortunately, most of our business comes to the canyon at a time when the weather is not so good, in the winter time, and the necessity of good roads is absolute—simply can not get along without them.

It is not a question of dust with us. We can drive about a mile and a half from the hotel, and can not get any farther. The situation demands attention. If the Government will not take the matter in hand and provide funds, it seems to me that they should permit the railroad company to do it. It is not something that we can bottle up and let lay until the Government is ready to deal with it, but we have these people coming there—we have, as I said before, something like 30,000 this year—and the way conditions are now it is a reflection upon the Government and upon the railroad company. Our visitors there inquire as to why something is not done. The result is a distinct reflection on all concerned. As far as the railroad company is concerned, Mr. Ripley assured me that the Grand Canyon proposition as a whole has been a losing feature since the time it was started. Of course there is an indirect profit on account of people traveling over the line by reason of the Grand Canyon, but that is a very uncertain argument. It may be that such travel is due to the roadbed, character of services furnished, or some other element. At any rate, the company is reluctant to continue expenditures under existing conditions. They realize that there is a great attraction there and have indicated their willingness to proceed with necessary expenditures to develop the canyon, providing cooperation is had. In one respect the

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situation differs from other places in that we do not have water. The water there has to be hauled in perhaps a distance of 120 miles—hauled in by train. There is water about a mile down the canyon, but it is impossible to get it up without going to a very large expense. My hope is that the visit of the Secretary will acquaint him with conditions obtaining there and thereby enlist his aid. Mr. Hill very properly stated that it is rather hard to separate one of these attractions from the other. They all belong together. For instance, the improvements made here by Mr. Child I regard as a benefit to the Santa Fe Railroad, though it is remote from them. I think there is a probability of the visitors here coming around by Yosemite and back by the canyon.

The SECRETARY. There are quite a number of railroad men on the list before me. I do not know exactly whom to select—I would prefer to have volunteers if they would be willing to speak. I would like to have any suggestions that occur to you, Mr. Gilman.

REMARKS BY MR. L. C. GILMAN, Assistant to the President, Great Northern Railway Co.

Mr. Secretary and gentlemen: I think that all that can be said on the subject has been touched upon by the representatives of the railroads—that is, the relation between transportation and the national parks. The railroads are willing to do their share, all of them, in the matter of transportation to the parks. Some of the gentlemen who have spoken have expressed a willingness to go even farther and to furnish the necessary transportation and other facilities within the parks, and that at the present time the real question to be considered is not so much the attitude of the railroads toward the parks as the attitude of the Government toward the parks. I think I may safely say that the attitude of the present executive portion of the Government is all that anybody could wish; but unfortunately the Executive has no power to make expenditures in the parks, no means of obtaining money with which to make these expenditures, so that our efforts from this time on, it seems to me, should be directed toward obtaining from Congress the necessary appropriations to properly develop the parks. We would depend upon the concessioners and the Government to make the parks attractive and to render within the parks the proper service at reasonable rates. When that has been accomplished, I am sure that good results will be had.

The SECRETARY. Now, there are other railroad men who have come here because of an interest in the subject, and we will be very glad to hear from them. If there are any suggestions, I would be very glad to

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receive them, either as to rates or service. This would be a very good time to make some suggestions in that direction.

I know that one of the persons in the United States who is most deeply concerned in the development and use of our national parks is Mr. McFarland, president of the American Civic Association. As we are approaching the parks now by means of the railroads, I would be very glad to have a word from him.

REMARKS BY MR. J. HORACE McFARLAND, President of the American Civic Association.

Mr. Secretary, I really have nothing to say that would be of advantage in regard to transportation. I think the transportation at the present time is admirable. All I have to say is that the railroads are in advance of the Government in the treatment of these national parks and that it is up to the general public, including the railroad men, to bestir themselves to see that the national parks are put in such shape and under such management as will bring about the conditions they themselves want. I fancy that all of us from time to time are apt to jump on any visible part of the Government we can get our fingers or thumbs on, forgetting that this is supposedly a Government in which every man is equal—every one of us has at least one Representative in Washington to whom we may write a letter backed by a vote. It has been well said that our national parks have not been managed in a coordinate fashion, but if we will combine our efforts and each one of us use our influence on Congress a good many things that we would like to come about will result.

The SECRETARY. I had assumed, Mr. McFarland, that the general question of the organization of a bureau of national parks for the purpose of more efficient administration would be of interest to you; I had thought that this matter would be more appropriate a little later on, but if you care to speak on that subject now I would be very glad to hear you.

Mr. MCFARLAND. With your permission, then, I will speak now.

Some things have been said here to-night concerning American travel abroad. The Review of Reviews printed a review of the European travel situation some time ago, and the assertion was made that the pleasure travel tide which flows over Europe aggregates $550,000,000 yearly. It was asserted that the United States supplies two-thirds of this amount and got back as its share for its own scenic advantages less than one-half of the sum. This will serve to show that there is a strong financial inducement for doing something in respect to modifying the park policy. It seems to me that it is now time that the national parks shall cease to be incidentally handled in two departments and come to such handling as will make them as definite on the map of the United States as are the parks in any large city. We do not find in 150 or 200 American cities an

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instance of successful park work when the administration was by incidental committees or by the street commissioner or the public-works commissioner. The parks are successful when they are the primary object of attention on the part of some one person or some definite body. A park commissioner is the usual means.

We want to consider whether there should not be more parks. I find that the Federal Government possesses 712,000,000 acres of land unappropriated and unreserved. Surely in that area, found in 26 States, there are portions which should be looked after. The same thing is needed by the national parks as by the city parks. How do the cities acquire a park system? I may speak from direct knowledge, because I had considerable to do with the parks in Harrisburg. There when the park question was taken up we employed the best man we could find for the purpose. He looked over our community, made an investigation of the various places which seemed best adapted to serve the needs of the town, and then made his report. The report was considered widely extravagant until a detailed examination was made of it, and we then saw that Mr. Manning was right. We followed his suggestions, and in 10 years the parks have grown from 41 acres to 749 acres, 1 acre for every 90 people. That can not be done without having a definite plan. With the exception of 54 acres, we had to buy every inch of the park land. We had no land to which the city might lay claim, being without the advantages which the Federal Government now possesses. I adduce this instance to suggest the enormous advantage of giving the matter expert consideration.

There are no American national parks east of the Yellowstone, while the center of population is in Indiana. To get to the parks people must travel 1,500 miles. This is good for the railroads, but hard on the people. I think it is the Nation's duty to serve some of the eastern people as well as the western and think parks should be created either by purchase or by using some of the unreserved public land which would be easily accessible to the people of the east. The taste for the parks grows by what it feeds upon. The parks in the city of Chicago are visited by 750,000 people each year. The people of the United States will not need to go abroad if they are provided with the means here to see the things that are beautiful, and instead of spending their money abroad it will remain in the United States. There is from every standpoint sufficient advantage surrounding the creation and maintenance of the national parks to make it right and necessary to formulate a definite park policy, and we should go at it with the same spirit that has made possible enterprises like the Panama Canal.

The benefits we are having from the parks are just beginning. The railroad men have told of the numbers visiting the parks. Mr. Harvey has mentioned the increase in the number of visitors to the Grand Canyon. The policy mentioned by the Secretary in regard to the press work is a very wise one, and when the parks are better known there will be an

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enormous increase in the number of visitors. When you get people to go to the parks you are making them better fit for that civilization and that patriotism which we all speak of, but which we do not all of us work for. We all sing "My country, 'tis of thee" and "I love thy rocks and rills," but what have we done with those rocks? We have torn them down to get something from the inside. Those "rills" we have dammed up with silt and coal dirt. "Thy woods and templed hills"—but where are the woods? "My heart with rapture thrills"—but God knows at what! We have not begun to work out our national hymn, and we lie when we sing it. Our work with the national parks will help us to make the hymn an accomplished fact. The parks, broadly considered, properly supported, adequately laid out, and suitably maintained, will be more advantageous, even as a solid business proposition, than anything we can do to-day.

I had expected a letter from Mr. Frederick Law Olmstead, but as it has not been received I request that it be inserted in the record.

LETTER FROM MR. FREDERICK LAW OLMSTED.

OLMSTED BROS., LANDSCAPE ARCHITECTS,
Brookline, Mass., September 13, 1911.

Mr. J. HORACE MCFARLAND,
President American Civic Association, Harrisburg, Pa.

MY DEAR MR. MCFARLAND: I greatly regret that I did not receive your letter in time to enable me to get a letter to you at Mammoth Hot Springs before yesterday, as requested.

I do not know, however, that I could have said much that is not already well in mind. The two principal points which I should have tried to make are these: First, the importance of some kind of legislative definition in broad but unmistakable terms of the primary purpose for which the parks and monuments are set apart, accompanied by a prohibition of any use which is directly or indirectly in conflict with that primary purpose without, however, interfering with the serving of other purposes than the primary purpose in so far as they do not in any degree conflict with the most perfect service of the latter. Second, executive efficiency demands that there be a single responsible executive head over the park administration with adequate authority, as little hampered by external interference as is possible; and yet at the same time the exceeding difficulty of maintaining continuity of policy in regard to the ultimate large effect upon the parks of innumerable decisions in matters of detail continued over long periods of years, and the difficulty experienced by any busy executive officer in holding himself to such a comprehensive and far-sighted view, would seem to make it desirable for the Government to establish some sort of small, permanent independent "board of overseers" of very slowly changing personnel, whose duty it should be to make systematic and effective inspections at rather long intervals, to

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discuss questions of general policy with the executive officer, to examine into the tendencies and probable effect of the methods of administration and of the laws controlling those methods, and to report to the Secretary of the Interior or to the President at stated intervals, perhaps no more frequently than once in each presidential term unless called upon to do so.

The extreme slowness with which the most important results begin to be generally apparent in park work (as in any work that is much dependent upon slow-moving, natural phenomena such as the growth and change of forests, and upon the formation of varying habits of use by a large and fluctuating public), and the extreme difficulty of so defining the purposes in view that they can be promptly and accurately comprehended by a new executive, make it peculiarly desirable in this class of work to have a slowly changing, permanent body of overseers or commissioners in a position to safeguard the one most vital feature of permanently successful administration, which is a harmonious continuity of policy.

This is the theory of the unpaid park commissions all over the country, and it is a sound theory, although I have much fault to find with the way it has been applied. The trouble has usually been that the members of such commissions have burdened themselves with administrative detail (which such a group of men is far less fitted to undertake than a single responsible executive), and have thereby obscured their vision for those very matters of general policy and ultimate result which it should be the duty of such a commission to watch. The two sets of functions and responsibilities, executive and deliberative, can and should be distinguished and both should be specifically provided for. By all means have a single-headed executive with every facility for prompt, unhampered, efficient action. By all means let this executive officer be also a man of all the judgment and discretion and wisdom that can be obtained. But let the Government provide also a deliberative body as a control upon his wisdom, just as it provides an auditor as a check upon the continuing honesty and regularity of those whom it expects to be honest and regular.

I hope that even now these general suggestions may be of some service.

Yours, truly,

FREDERICK LAW OLMSTED.

The SECRETARY. Is there anything further which anybody has to offer on the question of transportation? Have any of the superintendents or other park officials anything to offer connected with transportation; anything which they wish to call attention to now? I mean, of course, transportation to the parks. If not, we will consider some of the questions arising within the parks, and I have in my hand a list of the concessioners within the various parks. I see that Mr. F. J. Haynes is interested in some of the questions within this park, and we would be glad to hear from Mr. Haynes.

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Mr. HICKEY. Mr. Haynes has been suddenly called away and he asked that I read a paper which he had prepared. With your permission I will do so.

TRANSPORTATION IN THE YELLOWSTONE NATIONAL PARK, BY F. J. HAYNES, President of the Monida & Yellowstone Stage Co., read by James R. Hickey, Vice President.

The Yellowstone National Park was set apart from the public domain and placed under the control of the Secretary of the Interior by an act of Congress of March 1, 1872.

It is a tract of land near the headwaters of the Yellowstone River, in the States of Montana, Idaho, and Wyoming. It is 62 miles in length from north to south, 54 miles in width from east to west, and contains 3,348 square miles, or 2,142,728 acres. Its area is greater than that of the States of Delaware and Rhode Island combined.

The topography of this garden of wonders is what would be expected in a country filled as this is with lofty mountain ranges. It is exceedingly rough and broken except in the central part plateau, where there are large tracts of comparatively even surfaces. The great mountain ranges occupy the larger portion of the area.

The climate of the park is one of extremes and of a kind which tells heavily against the maintenance of its highways. In the spring storms are frequent, rainfall is as heavy as in the Eastern States, when all the conditions of a wet climate are present. In the later summer the rain almost wholly disappears, the surface of the ground thoroughly dries out, and the roads suffer more from the lack of moisture than they did from its excess.

In the winter this region is cloaked with an average snowfall of 6 feet, which suddenly disappears early in June. The waters from this melting snow, in finding a rapid course to the mountain streams, cause serious damage to the roadways.

Within this wonderland nature provided no natural roadways. The location, construction, and maintenance of the roadways is therefore of first importance in the present method of efficient transportation facilities.

Over 80 per cent of the park is covered with pine forests, often of great density, and in many places so filled with down timber that they are almost impassable.

In the composition of the rock and soil of which the roads have to be constructed the park presents a greater variety, in all probability, than any other region of like extent upon the face of the globe.

The materials at hand constitute a most annoying kind of road material in their natural state, the greater part of which, when used in road construction, can scarcely be driven over with heavy loads.

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Such is a brief outline of the physical conditions which are encountered in the construction for transportation purposes of the mountain roads of the Yellowstone National Park. The necessity for these roads arises from the desire of the public to see the peculiar natural phenomena with which this region abounds and which first became generally known about 40 years ago. The Government, in setting apart the entire region as a public reservation for the benefit and enjoyment of the people, thereby assumed the obligation of making its points of interest accessible to the traveling public. About 27 years ago it began the development of a road system.

The sundry civil act of March 3, 1883, directed the construction and improvement of suitable roads and approaches, under the supervision of an engineering officer to be detailed by the Secretary of War, and in July, 1883, an engineer was designated accordingly. This was the beginning of systematic road construction in the park.

The sundry civil act of June 28, 1902, recognized this project and provided for its construction, and it was practically finished ending June 30, 1906. It comprises a belt line or main circuit which reaches all of the important centers of interest, with side roads, bridle trails, and two stage-line approaches, one from the western entrance and one from the northern entrance, including wagon roads to the eastern and southern boundaries—in all about 350 miles of road and about 125 bridges.

The controlling points of interest which it was considered necessary to make accessible to all travelers are five in number—the Mammoth Hot Springs, the Norris Geyser Basin, the Firehole Geyser Basins, Yellowstone Lake, Grand Canyon of the Yellowstone. These points are reached by what is officially known as a "belt line," about 150 miles in length, over which the stages of the two stage companies holding leases pass around this circuit to the left.

The roads of the park are primarily designed for the transportation of tourists; secondarily only for the hauling of freight. This purpose has controlled absolutely in the matter of location. Not only do the roads reach to the important centers of attraction, but the intermediate portions are carried where the best view of the surrounding country may be had.

The limiting gradient of the main circuit is 8 per cent and this is reached in only a few instances. It has been found that for the purpose of tourist traffic an 8 per cent gradient is not much more objectionable than one of 5 per cent. Beyond 4 per cent a loaded coach can not be hauled at a trot for any considerable distance. Whenever the speed is reduced to a walk it is found that a team will ascend an 8 per cent gradient nearly as rapidly as a 5 per cent. The elevation is thus gained more quickly. A lighter gradient can be safely descended at a rapid trot, but for anything higher a slower speed is necessary.

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In dry weather, without being sprinkled, the roads become and are very dusty, which is at all times a serious problem contended with in transporting the tourists.

The sprinkling fund is frequently exhausted long before the close of the park season, necessitating a total suspension of the sprinklers, in the absence of which the light volcanic surface of the road is blown away, leaving the highways rough, and subjecting the tourists to many discomforts. The dust materially increases the ever-present dangers of accidents on the sharp inclines and curves.

A per capita franchise tax is imposed by the Government on the regular transportation companies. This tax is remitted to the Interior Department and is not available for park purposes without the sanction of Congress.[1] The imposition of a similar tax on all visitors and freight outfits using the highways, if taken in connection with the annual appropriation, would provide a sufficient sprinkling fund for the maintenance of sprinklers for the entire park season. The tax so levied should be retained and disbursed by the officers in charge of the improvements and expenditures of the park.

The Yellowstone National Park is the pride of a Nation of 93,000,000 people and is dedicated in all its splendor to the world's people of all climes. To thus appropriate it was the noblest of national effort, but it was another thing and a vastly tedious and venturesome undertaking to have pioneered and paved the way to the complete accessibility and enjoyment by the public of this American garden of grandeur.

In the year 1881 Mr. F. J. Haynes, from the terminus of the Northern Pacific Railway at the junction of the Missouri River in North Dakota, turned his horse westward for 600 miles toward the vast unknown. In making this journey his personal safety was dependent upon his own vigilance while crossing the plains, which were then known as the Buffalo domain of freedom.

During this year Mr. Haynes observed in the park a small tourist party from England and Germany, who entered by way of Beaver Canyon from the Utah & Northern Railway terminus, 75 miles from the western boundary.

The first public transportation was by means of buckboards operated from the main line of the Northern Pacific Railway by Wakefield & Hoffman. In 1886 the Yellowstone National Park Transportation Co. was, under the hotel lease, operated by Wakefield & Haynes.

In 1892 the Interior Department granted a separate franchise to the Yellowstone National Park Transportation Co. This line was operated by Mr. S. S. Huntley and Mr. H. W. Child. Mr. Child is now the president of the Yellowstone Park Transportation Co.

[1] The proceeds of this tax are available for some work in the park, but not for road work and sprinkling, for which specific appropriation is made.—Editor.

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In the fall of 1897, while on the summit of the Teton Range of mountains, Mr. F. J. Haynes and Dr. W. Seward Webb first discovered the idea of providing a regular transportation line from the western boundary, thus making more accessible to a large population a means of visiting this magnificent handiwork of nature.

As to the means of transportation in the park and as to the facilities of reaching the same, it is of interest to note the following in the report of Mr. P. H. Conger, superintendent of the park, for the year 1882: "A tourist entering the park might select the following route—the Union Pacific via Omaha and Ogden; thence by the Utah Northern to Beaver Canyon, where he takes a stage or private conveyance up the valley of the Snake River to the lower Firehole Basin, a little over 100 miles from the railroad [this point of entry is at present the western entrance], or he can take the northern route via St. Paul and the Northern Pacific to Livingston (Bensons Landing), from which a branch road is to be built, I am informed, early next season to the borders of the park, 65 miles from Livingston." This point of entry is now the northern entrance.

From this early beginning, with its attendant difficulties, to the present time the means of transportation and the facilities for reaching and passing through the park have steadily improved until to-day every known means of travel by horse is at the command of the tourist.

The transportation facilities employed in the park are a distinctive feature of this garden of paradise. The two regular stage companies holding leases in the park make the present trip of five days with 4-horse coaches and 2-horse surreys, traveling at a rate of speed not exceeding 6 miles per hour.

The number of miles traversed in a day's drive ranges from 9 to 40. On the long drives stops are made at noon for rest and luncheon at the lunch stations. As a protection against dust and against accidents on grades, drivers are instructed to maintain a distance of approximately 100 yards between coaches.

The Yellowstone Park Transportation Co., under a lease from the Interior Department, operates through the park from the terminus of the Northern Pacific Railway at Gardiner up to and over the belt line. This company has since its beginning operated from said entrance with an equipment sufficient at first to meet the demands and has steadily increased and maintained an equipment sufficient to comply with all demands of the tourists and of the Interior Department.

Since the completion of the Northern Pacific Railway to the northern entrance at Gardiner the trip of the tourist entering by way of the northern entrance with the Yellowstone Park Transportation Co., as outlined in Mr. Conger's report, is shortened by 130 miles, which consisted of rough staging outside the park.

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The Monida & Yellowstone Stage Co., under a lease from the Interior Department, operates a regular transportation line from the terminus of the Union Pacific Railway at the station of Yellowstone at the western entrance through the park to all points of interest.

This western entrance was practically unknown until the advent of the establishment by Mr. Haynes, of the Monida & Yellowstone Stage Co., in 1898. Through the energetic and persistent efforts of Mr. Haynes in the fulfillment of his stewardship to the Interior Department the development, advantages, and convenience of the western entrance was brought before a large population heretofore unfamiliar with the beauties of the park.

In its first year, 1898, only 125 tourists entered through the western entrance that were carried by this line. At this time the Monida & Yellowstone Stage Co. operated from the station of Monida, on the Oregon Short Line Railway, a distance of 70 miles from the western entrance.

A large number of employees was necessary to meet the demands of all tourists presenting themselves at said entrance, although the travel was very light, and for periods of 12 days no tourists entered that were carried by its stages from the western entrance. Notwithstanding this fact, this company, as well as the other regular stage company, maintained an equipment of the highest efficiency, consisting of especially designed 4-horse coaches retaining many admirable features of the now historic old-style coach, combined with all modern features, opened at the sides for sight-seeing, suspended on leather thorough-braces, with covered baggage racks at the rear and supplied with heavy canvas curtains for protection against the elements, and equipped with lap robes, all being the highest standard capable of being constructed by the original Abbot-Downing Co., of Concord, N. H., for the comfortable, safe, and expeditious conveyance of passengers through the park.

By the individual and personal solicitation of Mr. F. J. Haynes, Mr. E. H. Harriman, president of the Union Pacific Railway, was induced to construct, at an expenditure of $3,000,000, a branch line from Idaho Falls to the station of Yellowstone at the western entrance, which line was completed and ready for passenger traffic at the opening of the tourist season of 1908. With the construction of this road an immediate increase of about 3,000 visitors to the park over the year 1907 through the western entrance was noted. Since the completion of the extension of the Union Pacific Railway to the western entrance the trip of the tourist entering by way of the western entrance, as outlined in Mr. Conger's report, is shortened over 200 miles, which consisted of rough staging outside the park.

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The number of visitors to the park through the western and northern entrances since the year 1898 is as follows:

Visitors to Yellowstone Park through northern and western entrances.

Years.	Northern.	Western.	Years.	Northern.	Western.
1899	7,338	1,771	1906	12,474	3,404
1900	6,510	1,988	1907	11,292	4,150
1901	8,094	1,986	1908	10,185	7,166
1902	9,856	2,738	1909	20,174	10,380
1903	9,517	2,572	1910	10,675	7,403
1904	9,544	3,123	1911 (to Sept. 1)	9,529	10,820
1905	20,457	4,500			

By the maintenance of fixed schedules by the Monida & Yellowstone Stage Co. and the Yellowstone Park Transportation Co. ample time is given the tourists at each point of interest; however, stop-overs are allowed at any of the park hotels without additional stage charges.

All passengers carried by the Monida & Yellowstone Stage Co. and the Yellowstone Park Transportation Co. are accommodated at the hotels of the Yellowstone Park Hotel Co.

The total number of stage coaches, surreys, mountain wagons, buggies, express and freight wagons used in transportation by the Monida & Yellowstone Stage Co. and the Yellowstone Park Transportation Co. is 375, with a total seating capacity of the passenger vehicles of 2,555 persons. In moving these conveyances about 1,200 horses are required.

During the short season from June 15 to September 15 for a period of at least two weeks after the opening and before the closing of the season there is not sufficient travel to employ 20 per cent of the transportation facilities of the Yellowstone Park Transportation Co. and the Monida & Yellowstone Stage Co. With the exception of this very limited season the entire transportation equipment is idle, unproductive, and burdened with an enormous fixed charge for maintenance.

The coaches accommodate 6, 8, and 11 passengers and the surreys 3 and 5 passengers. Private conveyances of the above sizes can be secured for any tour in the park, and the trip prolonged and the conveyances used for drives in the vicinity of the hotels. The companies maintain long and short trips so as to accommodate the wish and time of the tourist.

Tourists holding a short-tour ticket can arrange for extending their trip at proportionate rates. Mail and telegrams are forwarded to the hotel where the tourist is stopping. Twenty-five pounds of hand baggage is allowed each passenger. Trunks are stored without charge. Parties contemplating a prolonged stay in the park can arrange with the stage companies for transporting their trunks on express wagons.

The stations of Yellowstone and Gardiner are directly connected with all stopping points in the park by a system of telegraph and telephones,

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and in addition the Monida & Yellowstone Stage Co. maintains a private telegraph system from Yellowstone station to the Mammoth Hot Springs. Although many miles from railroad centers, the tourists are at every station in direct telegraphic communication with all points of the world. This thorough telegraph and telephone system is a substantial aid to the proper policing of the park.

The Monida & Yellowstone Stage Co. and the Yellowstone Park Transportation Co. have leases and rights within the park, which are accompanied by corresponding obligations, and in fulfillment of their obligations to the Government under these leases these companies have made large expenditures in special equipment of no other practical use except in the park. Their leases require them to keep sufficient transportation at all times for all the park travel, irrespective of the number of tourists traveling on any single day or in any season. They are required to keep an equipment of the first class—horses gentle and well broken, drivers sober, courteous, capable, and well informed as to the points of interest.

In addition to the above leases individual camp licenses are issued and permits for saddle and pack animals for use in connection with tourist travel through the park. Visitors may make use of their own vehicles as means of transportation and have free access to the roads of the park, with accommodation at the hotels.

The total number of people that entered Yellowstone National Park since any authentic record has been kept is about 300,000. This number is less than the population of the Twin Cities of Minnesota.

This naturally leads to the consideration of the location of the park and the railroad facilities for reaching the Yellowstone National Park through the western and northern entrances with reference to the population of the United States. The center of population is situated in latitude 39° 4′ and longitude 86° 19′. It is the southeast corner of Monroe County, Ind., about 15 miles southeast of the city of Bloomington.

The Yellowstone National Park is bounded on the north by the forty-fifth parallel of latitude, which extends from a point a few miles south of Portland, Oreg., on the Pacific coast, to Eastport, in Maine, on the Atlantic coast.

From coast to coast the territory south of this parallel embraces 36 States wholly therein and parts of 10 other States, and contains in all an area of 2,524,333 square miles, or more than three-fifths of the entire area of the United States, including Alaska. This same territory contains a total population of about 85,419,248, or more than nine-tenths of the entire population of the United States, which is now served by direct railway to the park.

A continued agitation is being carried forward for permission to operate automobiles over the roadways of the park. This means of transportation, as applied to the park for the purpose of supplanting the horse-

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drawn vehicle, by experience has been found to be and is impracticable for many reasons, amongst which the impassable condition of the roads for long periods after the opening and before the closing of the park season, taken in connection with the narrow construction of the roadways and the ever-present and immediate danger to the life of the tourist in passing over the steep grades and sharp curves, coupled with the danger of frightening the horses by the sudden approach of the automobile or the unexpected back-firing of the engine or explosion of a tire.

Reliable statistics prove about 50 per cent of the visitors to the park make use of their own horse-drawn vehicle as a means of conveyance. The advent of the automobile would of itself necessarily result in a complete surrendering of the highways to automobile travel, thus depriving a large percentage of visitors access to the park and its roadways.

The foremost argument advanced by the individual auto owner desiring to use his own automobile for the tour is "that it would provide a more agreeable and rapid means of carriage." The experience of those familiar with the present method of transportation prove that the operation of a combination of automobiles and horse-drawn vehicles would necessarily result in a great loss of life, weighed, as it would be, on a scale founded on rapidity and enjoyment.

Less than 10 per cent of the transcontinental passengers touring the continent on railway lines adjacent to and passing the park ever enter this "Garden of Beauty," either because of the fact that the park tour consumes too much time and entails too many hardships or is too expensive. After an exhaustive study of the conditions, based upon reliable surveys, it has been found entirely feasible to construct wholly independent of the present highway system and without in any manner marring any of the natural beauties and curiosities of the reservation a rail line intercepting all the present points of interest and in addition embracing a vast territory of the park now unfamiliar to the tourist; also connecting with the present western and northern railway terminals and such railway terminals as may be established at the park boundary in the future if a connection can be constructed to the new terminals.

The contemplated use of gasoline motive power in self-propelled gasoline motor cars obviates the necessity of harnessing the waterfalls for power purposes or the extensive cutting or removing of timber for the erection of trolley wires.

These proposed steel-constructed, self-propelled, gasoline passenger cars have the capacity to accommodate from 12 to 74 passengers, with an ample baggage compartment, smoking room, lavatory, water-cooler, light, heat, and observation end, with every convenience of the modern standard parlor car.

As the safe, standard, modern, and ideal suburban car service, these cars have been heretofore adopted for practical use by the Pennsylvania, Rock Island, Union Pacific, and Southern Pacific and other railroad systems.

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With the adoption of this means of transportation the expense of the park tour would be greatly reduced and the comforts and enjoyments of the tourists greatly enhanced, thereby attracting a large class of tourists who at present will not undergo the present hardships incident to the tour. By this means of transportation all the travel to the present magnificent hotels, as well as the tourists desiring the less expensive camps, would be accommodated.

This equipment would also include special constructed cars for the rapid transportation of Government and hotel supplies, all of which are at present moved from the park entrances for distances ranging from 5 to 60 miles by means of expensive, obsolete, slow, horse-drawn wagon transportation. By the adoption of this means of transportation it would relieve the present roads of freight and passenger traffic and greatly reduce to the Government the cost of maintenance, at the same time making possible within proper restrictions the use of the present roadways by individual automobile owners with their own automobile as a means of private conveyance.

In the matter of the betterment and improvement of the present transportation facilities for the benefit of the traveling public, the Monida & Yellowstone Stage Co. and the Yellowstone Park Transportation Co. now, as in the past, are ever ready to cooperate with and meet all the requirements of the department. In this connection Mr. F. J. Haynes, as president of the Monida & Yellowstone Stage Co., heretofore secured the cooperation of Mr. H. W. Child, as president of the Yellowstone Park Transportation Co., and Mr. A. W. Miles, as president of the Wylie Permanent Camping Co., to finance, construct, equip, and operate this proposed modern means of transportation in the park if the same meets with the consideration and approval of the honorable Secretary of the Interior.

While substantial results have been accomplished such as were anticipated by the Interior Department in its adopted policies, there yet remains much to be done in the way of development by the Government so as to make possible the complete enjoyment of these "commons" by the owners, the people of the United States of America.

The SECRETARY. The paper which has just been read is very interesting and presents some new phases and suggestions. I think this would be a very proper time for discussion of the matters brought out in this paper. We would be very glad to hear from anybody in regard to any of the matters or suggestions touched on in the paper. I know you are not all of the same mind with regard to the use of automobiles in the park, so why be backward?

Mr. L. W. HILL. Mr. Secretary, the question of permitting automobiles in this park is a rather embarrassing question. I know there are probably a large number of automobile agents, sales people, who feel that it would be a good thing to have this park thrown open to automobiles. I

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have had some considerable experience in driving a car in the West, in Oregon, Montana, British Columbia, and through the Northwest. I carry a car with me and have one now down at the gateway, but should anyone ask me to take that car in the park I would feel very much embarrassed. I could take the car, make the trip, and be back for lunch. Now, what kind of a trip would that be? It would be useless until you had a tour of 1,200 or 1,500 miles. I think it would be absurd to put automobiles in here; it would make it possible to see the park in a short day. When I started from St. Paul to Helena, I arrived at Alexandria at half past 1; the tour was over for the day—start in the morning and before lunch the tour would be completed. That's the way I view it, and I am as much of an auto crank as any man. Then, there is another feature which has to be taken under consideration; to attempt to pass 4 and 6 horse stages down here on the road with automobiles would be folly. I would not risk it.

The SECRETARY. A very interesting expression of opinion. The Interior Department is in receipt of numerous requests to open the parks to automobile traffic. I would like to know if there is anybody here who is in favor of opening the park to automobile traffic.

Mr. MCFARLAND. A question which occurs to me is what would be the effect of the automobiles on the wild life of the park?

The SECRETARY. I take it that is an oratorical question. We want first to find some one who is in favor of opening the park to automobiles. May we then assume that the opinion is unanimous on this question? Then let us take up the other question suggested in the paper that a tax be used for obtaining funds for sprinkling the road. Is there anyone here in favor of that method of raising revenues? May we assume that the conference is unanimously against that method of raising revenues? Then there was the other suggestion in the paper—the construction of a railroad through the park to be operated by a gasoline-propelled car. Is there anyone here who is in favor of that method? If not, may we assume that the conference is unanimously against that suggestion? Then there were some other suggestions in the paper—there is much information in the paper which may be of great value. Those three points occur to me now. If anyone wishes to express an opinion on any other point in the paper we would be very glad to hear from him.

Assistant Secretary THOMPSON. The automobile question has been raised, and I take it that you may extend the question to the other national parks. I am ready to take a hand in that.

The SECRETARY. I intended to make it comprehensive. Yellowstone Park being the largest of our national parks, I assumed that Mr. Hill's point would apply to the others, as there are more roads in the Yellowstone than in any other. If, however, Mr. Thompson has anything to present or suggestions to offer on the use of automobiles in other parks,

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that is a very important question. We will hear from Mr. Thompson, Assistant Secretary of the Interior.

Assistant Secretary THOMPSON. Gentlemen, I am quite certain if Mr. Hill had thought that his remarks with reference to automobiles had applied to other parks as well as the Yellowstone he never would have made that speech, because I happen to know that he is vitally interested now in having built a road up in Glacier Park. Now, as to the advisability or not of allowing automobiles in this park, the Yellowstone, I do not care at this time to express a final opinion. There are a number of suggestions that would enter into a consideration of that proposition. Mr. Hill has stated that in this park the introducing of automobiles would make the tour of the park a half-day's job, and thereby absolutely throwing to naught a great part of the property that the United States in one way or another has induced concessioners to place and install in this park. That is one of the considerations that should enter into a discussion of this proposition. The other considerations applying to this park have been mentioned either by the Secretary or those who have spoken on the subject, but with the other parks different conditions obtain. For instance, Glacier Park is a new park. The Government is building there from the beginning. The peculiar formation and contour of that park is such that, in my judgment, an automobile road leading from both entrances would be advisable. The fact is that an automobile tour of that park would be out of the question, because of the impossibility of building such a road to the greatest points of mountain scenery, but from the station, Belton to Lake McDonald, the Government has already constructed a road 3 miles long up to the lake, and it needs only a bridge to make it a first-class automobile road.

There is now under consideration the construction of a road from Midvale, on the east side of the mountains, up to a point somewhere near the center of the park, or as far as they can go advantageously with that sort of road, so by that means the tourist may be brought within two or three hours to the very greatest points of interest in the park; then he must necessarily make the tour on horseback or on foot to see the great beauties of the park. With Mount Rainier National Park it seems to me conditions are entirely different and entirely advisable as to automobile traffic. There is but one point of interest in that park, and that is that great mountain standing there as it does a lofty citadel, snow capped, and bordered with glaciers. The tourists' sole object when they go to that park is to see and climb that lofty mountain, so that there can be no possible objection to taking them to the base of the mountain as quickly as possible and as comfortably as may be. The same conditions exist, in my judgment, with reference to Yosemite Park, although I think I will raise a discussion there with the superintendent of that park, and I realize that his point of view is better than mine.

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However, it does seem to me that the great advantage—the great thing of interest—in that park is the Yosemite Valley and the two or three other points that may be reached upon the great canyon or cliffs, so that the tourist may look down on the floor of the valley, 3,000 feet or a little more below. It seems to me that there can be no objection, providing a proper road is built, to an automobile's going up to what is known down there as the floor of the valley. That would take the tourist from the railroad station at El Portal in the quickest time and in the most comfortable fashion. From that point he may travel out over the floor of the valley and over the mountains to his heart's desire, and the objection that Mr. Hill raises to the use of automobiles in this park would not exist there. Automobile roads could not be constructed in that park, so that a tour of that park could not be made in less time materially than it is to-day. Those, gentlemen, are my views on the automobile question in the parks that I know about. I can see a great many objections to introducing automobiles in the Yellowstone Park and I can also see some things favorable to permitting their use. I may add to what the Secretary has previously stated that a very great pressure is being brought upon the Department of the Interior to open all our parks to automobile traffic, and I am certain that the question will have to be thrashed out by that department sooner or later and a final announcement made of a definite policy on the subject. It seems to me, therefore, right and proper that during this meeting there should be an open, frank, and free discussion on both sides of the question of automobiles in the parks.

Mr. HARVEY. Is Mr. Thompson familiar with the situation in the Grand Canyon?

Assistant Secretary THOMPSON. No, sir; I am not.

Mr. HARVEY. That is a very interesting subject to us; we are very much interested in it there. It seems to me that it is important that the policy be determined.

The SECRETARY. Gentlemen, you have heard Mr. Thompson's remarks in regard to the other parks. Are there any others here who think that automobile travel should be provided for in the other national parks?

Mr. WALTER FRY, ranger, Sequoia and General Grant National Parks. In the Sequoia and General Grant National Parks automobiles are allowed under certain restrictions promulgated by the Department of the Interior. On some of the roads automobiles are permitted, but on others they are not, as, for instance, over the road from Mineral King, a distance of 12 miles, the road is so steep automobiles can not get over them. Then we have the Mount Whitney Power Co. road constructed by that company (that road has not been opened to travel to the general public); then we have a road leading into the Giant Forest, the principal point of attraction within the reservation at the present time. On leaving Three Rivers, the principal point of entrance to the Giant Forest Road, it is necessary to climb an elevation of 5,500 feet. This road is not sufficiently wide to permit both automobile traffic and teams at the same

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time. I know of no way of compromising the issue with these people other than to throw the Giant Forest Road open to automobile travel on certain days of each week. It would necessitate the travel of about 20 miles of road within the reservation after entering the western portion of the park. I consider this can be done without disadvantage to the department. It could be generally known throughout the community; our people could be notified that on certain days of each week automobiles would be permitted. As I said before, there is a great deal of pressure being brought on the officer in charge by the automobile associations in California. In the General Grant Park this year the rules and regulations have proven very satisfactory with regard to the automobile traffic, although there were a few individuals who objected to paying the toll that was exacted. The toll that has been charged has been quite sufficient to pay for the additional expense that has been incurred on the part of the department by reason of permitting the automobiles to pass through the reservation.

Mr. McFARLAND. Can Mr. Fry state the restrictions that are placed there?

Mr. FRY. The roads within the General Grant Park over which automobiles travel cover a distance of about 5 miles. The department charges $1 for a round trip through the park, or $5 for the season, made applicable to persons who are not doing a general transportation business.

The SECRETARY. Are there restrictions as to speed?

Mr. FRY. Speed will be limited to 6 miles per hour, except on straight stretches where approaching teams will be visible, when, if no teams are in sight, this speed may be increased to rates indicated on signboards, at no time to exceed 15 miles per hour. When approaching teams, at all times to slow down and take the outer side of the road and shut off their machine.

The SECRETARY. This is a very important subject, and I would like to have the views of you people who have come here to this conference. For instance, take the Glacier National Park proposition. Should it be the policy of the Federal Government to build roads in that park which will permit of automobile travel as well as horse-drawn vehicles? Those are questions which are of great interest to us. Mr. Hill, Mr. Thompson has undertaken to state your position; perhaps you had better——

Mr. HILL. I meant my remarks to be confined to the Yellowstone.

Assistant Secretary THOMPSON. Exactly; and the Secretary attempted to spread your remarks over the entire park situation.

Mr. HILL. The proposed road in Glacier Park is not entirely in the park. Three-quarters of it is through the Indian reservation. It would be impossible to build a wagon road or automobile road up in the park without going into millions of dollars of expense. The road we propose to build is up the east border of the park. It may be possible to build a road on the west side of the park up the Flathead. The idea of this road that we propose to build is to answer the same purpose that the railroad

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answers from Livingstone to Gardiner. I think the people would much prefer it. I am very glad that Mr. Thompson made the trip through the park and that he is familiar with the situation. He is probably more familiar with it than anyone else here with the exception of Maj. Logan. People must see that park on horseback or on foot. The camps we have established are 12 miles apart with a view to having the people walk through if they wish, as they do in Europe. The road would be three-quarters off the park and one-quarter on it. The idea is to take the people from the train at Midvale and take them in stages or automobiles to Lake St. Marys; then take a motor boat up to the foot of Lake St. Marys up to the Continental Divide—leave the train in the morning and get up to the lake for lunch—see that portion of the park in a day; you can come out in half a day with an automobile.

The SECRETARY. As I understand it, it is simply an approach. Do you know of any other park with which you are familiar in which a similar condition would exist?

Mr. HILL. Mount Rainier National Park. The people of Tacoma are very much interested in establishing an automobile road in Mount Rainier National Park. In fact, the people of Tacoma have taken the matter up with me.

Mr. MARSHALL. There are other places in Glacier Park that are equally as accessible. I think the people who went through the park with me last year will agree with me that the scenery around Bowman Lake and down to Lake McDonald in that section of the park is as fine as St. Marys, and over that road it would be very easy to construct an automobile road. Generally speaking, I think that the people must have some form of transportation so that they can get to the different points of interest and spend the time there instead of being on some stage as we traveled on to-day. The conditions in the Yosemite could be improved on. I think that we ought to have some means of transportation to satisfy those who want to get to their point quickly.

The SECRETARY. There seems to be more difference of opinion on this point than appeared at the beginning. Are there any others who desire to say something in regard to the use of automobiles in national parks?

Mr. W. G. STEEL, president Crater Lake Co. In regard to Crater Lake Park we feel that automobile transportation is our only means of salvation. Our park is a new one. Several flat failures have been made in trying to establish a stage line. Last year we maintained an automobile line to Upper Klamath Lake, connecting by steamer to Klamath Falls, and also maintained a line to Medford. The business is increasing rapidly. Last year we had three times as many visitors as the year before, and so far this year we have had three times as many as in 1910. Half the visitors to our hotels come in their own automobiles. I do not suppose we have had a dozen people this year who have come in their own vehicles other than automobiles.

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The Government has just completed a survey of roads in the park, including one entirely around the lake, making a circle of 35 miles, keeping throughout as nearly as possible a uniform grade and following the rim when practicable. Previous to two years ago visitors came in their own vehicles—that is, visitors from southern Oregon and northern California. There were only rare instances of anyone from elsewhere. After putting in automobiles we had people from the entire coast—Los Angeles, San Diego, San Francisco, Seattle, Portland, and other places, so that we feel that we must have automobiles for our park.

The SECRETARY. This subject will remain with us and probably come up for more appropriate discussion as the various parks are brought before the conference. I wish you would bear it in mind, because I would like to have your opinions. I myself have just had an experience of some interest in connection with automobiles. After leaving Washington I devoted some time to the inspection of irrigation projects and to matters pertaining to the Indian Office. I traveled a large portion of the distances in automobiles. In one day we traveled, I think, something like 125 miles—in one instance there were three relays—so that I had a good deal of experience with automobiles on western roads.

As to the permitting of automobiles in the parks I have formed no conclusion. From the discussion just had there seem to be two very decided opinions on this subject. I confess I was rather surprised at first when I found no one in favor of granting this privilege. It is now reaching the hour for adjournment, and unless it meets with objection we will now adjourn and we will convene here in the morning at 9 o'clock for the next session, when we will resume at the point we left off this evening. Unless there is objection, we will adjourn until 9 o'clock to-morrow morning.

MORNING SESSION, SEPTEMBER 12.

The SECRETARY. I think it would perhaps be just as well to defer further discussion of the automobile question, except as it may come up in connection with the different parks. It appears from the discussion had last night that the question presents different aspects in different parks, and it would be better, I think, to take it up in that manner unless some one now has views to express on the subject in connection with Yellowstone. If not, we will go ahead with the list of concessioners in Yellowstone. I see that Mr. Klamer runs a general store, and he has been asked to present his views on that subject.

Mr. KLAMER. There are no particular questions which it would be useful to discuss at this time, no difficulties, and no particular requests to make.

The SECRETARY. Pryor & Pryor have a concession for the sale of curios. I understand Mr. Pryor is present, and if he has any questions

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to present in connection with his concession we will be glad to hear from him.

Mr. PRYOR. Mr. Secretary and gentlemen, our concession is merely a curio concession. We have a business extending over but three months in the year, and the only questions that have direct bearing upon us are those of taxation for the benefit of the park so far as maintenance, improvements, sprinkling, etc., are concerned and the one of a more liberal franchise.

When the tax question came up several years ago, the assessment as originally suggested was excessive, and we were permitted to submit to the department a financial statement of the business done by us to show why the tax as proposed was unwarranted, and in view of this statement the department was considerate enough to readjust the matter.

What we would like to emphasize is the peculiar limit which has been placed upon our concession at Mammoth Hot Springs, and as we understand the nature of this conference to be, in addition to other things, an opportunity for discussion of methods, ideas, and suggestions for the regulation, improvement, and maintenance of the national playgrounds, we are particularly interested in explaining certain features which affect us most keenly.

Our curio store is located very conveniently for the tourists brought to Mammoth Hotel by the transportation companies, and we have arranged to make it especially convenient for those making the camping tours to stop at our place by providing public necessary comforts and conveniences both in caring for the needs of the tourist as well as his team. This habit of stopping at our place was induced by special arrangement with the drivers and is a condition which did not exist before we acquired our lease.

As a natural result we have many inquiries for tourist supplies and necessities, things which we are prohibited from carrying according to the construction of our lease. What we would like, if possible, is to have our lease made more liberal and broadened to include those things for which there is a constant demand and can not be supplied the tourist without either unwarranted delay or necessary inconvenience by awaiting his arrival at the next place of supply. Now, just as an illustration, take kodak supplies. Often the tourist, and particularly those traveling the camping way, desires to photograph a local object of interest and, being unable to obtain the necessary supplies at this stopping place without unreasonable delay, he is obliged to continue his trip without the satisfaction of having secured a picture of a point of interest he desires. It is some of the revenue from this source to which we feel we are entitled. The question of having our concession made more liberal and equal to the others granted in the park is what we would like to present before the department.

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Assistant Secretary THOMPSON. Do you have exclusive curio rights in the park?

Mr. PRYOR. No, sir.

Assistant Secretary THOMPSON. Do the general stores handle curios also?

Mr. PRYOR. Yes, sir.

Assistant Secretary THOMPSON. Of course they handle the necessities which you have mentioned?

Mr. PRYOR. Yes, sir.

Assistant Secretary THOMPSON. Is their curio line as extensive as yours?

Mr. PRYOR. I presume so.

The SECRETARY. Well, if they supply the trade, what justification is there for two concessions covering the same articles?

Mr. PRYOR. Perhaps there is not so far as curios are concerned at the same point of interest in the park, only I believe it for the best interests of the public.

The SECRETARY. The question is should these concessions as far as possible be regulated monopolies? That has been the policy heretofore. The question is whether this is a wise policy or whether we should have competition. This is a limited market with a limited season. The query is should we let the general store carry curios and exclude the other people or should we let the other people have that concession and exclude the general store. We seem to have a number of concessions covering the same thing in whole or in part.

Mr. PRYOR. Mr. Secretary, there is another consideration. We are handicapped during that season of the year when the park is closed to tourist travel, because we have no possibility for catering to the volume of business done in connection with the settlement at Mammoth Hot Springs (where Fort Yellowstone is also located), which is far greater than the department may possibly realize. This particular point of interest is not at all similar to others in the park on account of it being headquarters for the various departments of the Government and is open and accessible during the entire year. If we are entitled to consideration so far as getting revenues from the tourists and others is concerned, I think our concession should be more equal and cover that part of the trade that results directly from this source and the supplies heretofore mentioned are certainly an equal necessity to the little articles in the souvenir line. It is also reasonable to suggest that a tourist seeking a kodak film is a prospective curio purchaser and it would not seem entirely equitable to our concession that we lose this opportunity to create revenues for our business. It is the supplying of one want that leads to further suggestions.

The SECRETARY. These remarks in regard to this particular concession raise the broader question which I have indicated, and one that is of

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great importance. Shall we give one concern a general concession covering merchandise, including curios, and expect them to live up to a carefully drawn contract to meet the demands of the trade at fair prices and thus regulate these things in the hands of a single concessioner or shall we have competition? What do you gentlemen think as to the wisdom of the one course or the other?

Mr. PRYOR. I believe it is for the best interests of the purchaser, more advantageous to the tourist, if there is more than one place where he can get his supplies. Would not this condition tend to bring about a better standard of price and quality?

The SECRETARY. If any other concessioners or members of the conference have views on this question, we would like to hear from them.

Mr. W. G. STEEL. I will tell you, as briefly as I can, the experience of our company in Crater Lake Park. I have been trying to develop this proposition for 27 years. Aside from the United States Government itself, every penny that was ever spent in the creation of Crater Lake National Park came out of my pocket, and besides that, it required many years of hard labor that were freely given. I went there first in 1885, and was deeply impressed with its overwhelming majesty, and realized that unless the General Government took immediate possession of the region it would be lost to the people forever and fall into the hands of individual speculators. During the following winter 10 townships were withdrawn from the market, after which it required 17 years of constant labor and attendant expense to get a bill through Congress and signed by the President providing for the creation of the park. When that was accomplished I felt that my long labor was finished, and was so congratulated by my friends and the press. I was so green, so simple-minded, that I thought the United States Government would go ahead and develop the proposition. In this I found I was mistaken, so had to go to work again.

All the money I have is in the park, and if I had more it would go there, too. This is my life's work, and I propose to see it through. I want a hotel as magnificent as this one; I want a road entirely around the lake that will cost $500,000, and I want other roads and trails that will cost as much more. We are now building a cut-stone hotel on the rim of the lake from the veranda of which you will be able to look down upon the waters 1,000 feet below. We have a 5-year lease and have come to the end of our string for money, if developments are to be made commensurate with the necessities of the proposition. We can not float bonds or otherwise borrow sufficient funds on a lease of that character. We want to do our part, and we want the Government to help us. All we ask is a 20-year lease. Give us that, and we can secure funds to carry on the work as it should be. Limit us on the lease and you limit the development. We must have a 20-year lease or we will not be ready to receive and properly care for the great number of tourists that will come

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to us in two or three or four years, with transcontinental railroads operating within 15 miles. If necessary for the good of the cause, I will come to Washington and stay there through the winter to aid in getting money from Congress to build our roads. We want to build another hotel on the easterly side of the lake to care for visitors who will come to us on the completion of the Southern Pacific and Oregon Trunk in two years, to say nothing of the San Francisco Fair in 1915, when we will simply be swamped with tourists.

We can do all these things better as a single corporation than they can be done by a lot of little ones. We want to provide every facility for the accommodation of the poor man and his family as well as the rich, and if you will give us an opportunity we will do it. We have made good in the past, and we will make good in the future. However, we must have a monopoly for the protection of the men who supply the money and for the protection of the public as well. We will meet the department more than halfway in providing rates, rules, and regulations acceptable to the public and will accept the slightest suggestion from it as an order and always hasten to obey it. If you are going to divide the concessions, that practically means that we must retire, for it will lead to unnecessary jealousies and jangling among concessioners that must of necessity interfere with perfect service. In these matters I believe I express the sentiments of every concessioner in every park in the United States.

The SECRETARY. Gentlemen, I think Mr. Steel has stated the proposition that is really before us. The question is whether these concessions can be developed so as to meet public demands in a proper way and at a fair price unless they partake largely of the nature of a regulated monopoly, free from competition. On the other hand, there is the suggestion of competition, that in that way we better protect the tourist, as made by Mr. Pryor. We would be glad to hear any more views on the question.

I see the name of Mr. Smith, representing Shaw & Powell, operating in this park. Have you any views to express on this point?

Mr. R. E. L. SMITH. I have a set place on the program; I would prefer, with your permission, to defer an expression of my views on this subject until I reach that place on the program.

The SECRETARY. I extend my request to those who have not covered the particular topic under discussion. If there are no further remarks on this question, we will proceed to Lyall & Henderson. They are the next on the list, running a general store here in the Yellowstone. Are they represented?

Mr. LYALL. Mr. Secretary, I do not know as I have anything to say of sufficient interest to this conference only with regard to the subject brought up by Mr. Pryor. His remarks might have led the people to think that the traveling public were unable to get the particular article that he mentioned. I beg to state that we have always carried a full line of these films and almost anything else that the public will ask for in

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a general store. I think these films can be had at various places around the park, at the different hotels, and at Mr. Klamer's place, and at the lake. I simply wanted to mention that fact.

Assistant Secretary THOMPSON. Your general store concession permits you to sell curios, too?

Mr. LYALL. Yes, sir.

Assistant Secretary THOMPSON. Well, then, what is the use of having the curio concession at all? Why don't we give Mr. Pryor a general store concession and let him compete with you?

The SECRETARY. Or give one or the other of you the whole thing.

Assistant Secretary THOMPSON. Yes.

Mr. LYALL. That's a question for the department to decide.

Assistant Secretary THOMPSON. That's a question I would like to hear from you on.

Mr. LYALL. The question of giving concessions to others—personally, as far as I am concerned, it is satisfactory to me if Mr. Pryor would have further concessions.

The SECRETARY. Mr. Lyall, do you think there should be one concession in this park for curios and a general store or more than one. Which do you think is the better policy, one concession or two?

Mr. LYALL. I should think it would be better to have both.

The SECRETARY. You think, then, there is enough profit in this trade here to support two competitors in this place?

Mr. LYALL. I believe, by strict economy, two could exist, Mr. Secretary.

The SECRETARY. If we limited it to one concession, do you think the man who had the concession would sell at a lower price?

Mr. LYALL. I think not.

Mr. KLAMER. I handle a general store here in the park—everything pertaining to supplies—my shipping point at present is 30 miles from a railroad. On canned goods and stuff of that sort I make very little profit. I think if you confined a man here in the park to a grocery business alone, he would make but very little profit out of it.

The SECRETARY. You think, then, that the concession ought to cover the whole field?

Mr. KLAMER. Yes, sir.

The SECRETARY. You have a store, a single store?

Mr. KLAMER. Yes, sir.

The SECRETARY. Have you any competition in the curio business?

Mr. KLAMER. Yes, sir; some. Mr. Haynes has souvenir spoons there and some other things.

The SECRETARY. I would be glad to hear the views of anyone else on this question of concessions. If there is no further comment we will hear from Mr. A. W. Miles, president and manager of the Wylie Permanent Camping Co.

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PERMANENT CAMPS: THEIR CARE AND SANITATION IN YELLOWSTONE NATIONAL PARK, BY A. W. MILES, President of the Wylie Permanent Camping Co.

The act of dedication of the Yellowstone National Park indicates, in general but concise terms, the purposes for which the reservation is set apart. These are:

(1) The preservation from injury or spoliation of the forests, minerals, and the natural curiosities.

(2) The withdrawal of the territory from settlement, occupancy, or sale under the laws of the United States, and its dedication, in the language of the act, "as a public park or pleasure ground for the benefit and enjoyment of the people."

This act and subsequent statutes amending the same, bestow upon the Secretary of the Interior full power and authority to carry out the objects of the park, including the authority to grant franchises and regulate the rates of charges for every service rendered tourists on the reservation. Under this authority, three distinct methods of touring the park have been established by the Secretary of the Interior, namely:

(1) By means of stage lines connecting the seven hotels maintained by one company at or near certain principal objects of interest in the park, having the most modern and up-to-date accommodations, such as given in the best hotels at summer and winter resorts.

(2) By means of a stage line connecting permanent camps or tent stations, now eight in number, all operated under one company, whose lease requires an increase in the number of stations and other facilities as the demands of the public in the opinion of the Secretary of the Interior require. This system seeks to combine novelty and informality with a complete sight-seeing tour of the park.

(3) By means of movable camping outfits—in the main, personally conducted—under a yearly licensed system; there having been issued by the Secretary of the Interior for this season 59 licenses, with authority to use in the aggregate 160 wagons and 218 horses.

This paper will be confined, as far as practicable, to the subject assigned me—"Permanent camps, their care and sanitation in Yellowstone National Park."

The permanent camps, including the regular stage transportation connected therewith, are operated under a lease by the Wylie Permanent Camping Co., a corporation with a capital stock of $200,000 and a present investment of about $300,000.

Briefly stated, besides the hotel building at Gardiner and the various stables, storerooms, and other outbuildings throughout the park, this company now maintains about 654 tent rooms equipped as sleeping apartments, and has on hand for use in conveying tourists and their subsistence 140 vehicles and about 450 horses. If the age of a successful

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operation is an indication of merit, the Wylie camps can claim all the prestige which is due to a pioneer line.

As you are aware, the park was created in 1872. In the next 10 years, however, very little was accomplished toward making the park in truth a pleasuring place for the people.

Only an insignificant number of people understood the scenic and scientific value of the new reservation. There were no railroads near the park and the reservation itself was an uncharted wilderness, without roads, bridges, or other modern highway improvements. During this period, too, the limits of the park were crossed and recrossed by bands of hostile Indians and an excursion through Yellowstone was a hazardous undertaking.

Within the first 10 years of the park's existence the Department of the Interior granted no regular leases, a fact which emphasizes the unattractiveness of the place at that time to tourists or capital. In the early eighties the accessibility to Yellowstone Park was increased a hundredfold by the extension of the Northern Pacific Railway into the Territory of Montana. By 1883 a branch was built from Livingston 50 miles south to Cinnabar, a point 3 miles north of the present village of Gardiner. The advent of this steel highway marked a new epoch in the traffic to and enjoyment of the park. Its new accessibility lured not only tourists from every State in the Union, but also the highest officials of the United States and foreign countries. In this one year alone the park was visited by President Arthur and a member of his Cabinet, the Chief Justice and an Associate Justice of the Supreme Court of the United States, the General and Lieutenant General of the Army, six United States Senators, one Territorial governor, a prominent railroad president, the ministers from England and Germany, the president of the Admiralty Court of England, members of the British Parliament, and other high officials of this and foreign countries.

The founder of the Wylie Permanent Camping Co. had made three complete trips through the park and published an illustrated guide book on Yellowstone prior to this date.

In 1883 10-day camping trips were added, the parties outfitting at Bozeman, Mont., and driving overland 84 miles to Mammoth Hot Springs. At this date the Wylie camps were movable or portable; that is, camp was pitched anew at each roadside stopping place. The tourists rode on horseback or on mountain spring wagons and the camp equipment and provisions came along behind in four-horse freight wagons. This method of transportation and service was in vogue for about 10 years, and since each season witnessed an improvement in the park roads there was a steady annual increase in tourist travel. In fact it can be stated as a cardinal principle of park transportation service, that the volume of business then, now, and at any future time will depend in a large measure on the condition of the park road system.

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The modern traveler comes to the northern or western gateway of the park in a superbly equipped Pullman sleeper, which glides along over heavy rails set on a well-ballasted, dustless roadbed. The high character of the railroad service to the park serves to emphasize any inconvenience encountered by the tourists using the park roads.

By 1894 the business of the Wylie Co. had increased to such an extent that fixed camps were established at the principal centers of interest and the practice of pitching tent nightly was abolished, since which time the permanent camping system has been in process of development to its present standard.

In the official report of Maj. J. B. Irwin, United States Army, superintendent of Yellowstone Park in 1898, to the Secretary of the Interior, the superintendent says:

> The permanent camps seem to fill a demand on the part of a certain number of travelers in the park who wish to enjoy whatever benefits and pleasures may be received from camp life. I inspected frequently each of the camps and lunch stations and found them neat and clean, with all of the comforts one would expect to find in camp. It is not possible to make a comparison between the accommodations furnished by these camps and the hotels. Each comes fully up to the requirements of its special class, and the personal preference of each visitor to the park must and will determine the way of living while in the park

In 1899 the then superintendent, Capt. Oscar J. Brown, in his annual report said:

> That there is a demand for this kind of entertainment is fully indicated by the large number of tourists availing themselves of it during the present summer. Inspection of these camps showed them to be comfortable, clean, and well kept, with more conveniences about them than is usually found in camp life.

Nineteen hundred and five, the year of the Lewis and Clark Exposition at Portland, Oreg., was the first great season Yellowstone Park ever experienced. In the three years immediately preceding 1905 the total volume of tourist travel increased less than 400. Then, in a single season, the volume of traffic jumped from 13,727 in 1904 to 26,188 in 1905, an increase of 100 per cent. The Wylie Co. carried 3,668 tourists that year, and thus demonstrated its helpfulness to the department in assisting to care for an abnormal number of visitors to the park, since which time the company has been the established agency of the department for supplying the permanent camping service.

The investment of the company was such that the yearly license system as applied to it was abolished, and a lease was entered into, dated March 31, 1906, under which the company was required to provide facilities necessary to accommodate all persons desiring permanent camp service in the park, and, as construed by the department, imposing the further obligation of establishing and maintaining such additional camps and transportation lines as from time to time might be demanded by the public in the opinion of the Secretary of the Interior.

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The Wylie Co. in 1906 made heavy expenditures to improve its transportation and camp service. Two of the camps were moved to better scenic and more sanitary sites. The method of tent construction was improved. Administration tents were established at each camp, improvements were made in kitchen equipment, and in short a definite policy for amplifying the plant and systematizing its operation was instituted.

That season of 1906, however, proved a great disappointment. The total number of visitors fell from 26,188 in 1905 to 17,182 in 1906 and the Wylie traffic dropped to 1,745, a sheer decrease of over 100 per cent.

The two following years, 1907 and 1908, would have been no better had it not been for the extension of the Oregon Short Line toward the west boundary of the park. The advent of this road is largely responsible for the increases of those years since the records of the northern entrance show no increase during this period.

In 1909 the Alaska-Pacific-Yukon Exposition was held in Seattle. As was expected, it made that year an unusual season for Yellowstone and required a large increase in equipment for us to comply with the obligations of our lease to take care of all who desired permanent camping accommodations. This increase was due entirely to the influence of this international exposition, and travel the following seasons of 1910 and 1911 has been materially less.

It seems hardly necessary to say that however enthusiastic we may be in the development of one method for caring for the public, there are many sources of discouragement and disappointments, due largely to the great fluctuations in the patronage secured. For instance, the large increase in the business in the season of 1909 caused us to increase our plant by one-third; yet the decrease of 80 per cent in the business for the following year made us realize as never before that a large part of our capital must be idle in lean years and that we can not expect to enjoy uninterrupted prosperity in the conduct of this business. A general railroad strike on any western railroad line, a lack of some important convention in a Pacific coast city, or reports of destructive forest fires are a few of the things any one of which during a given year would be a calamity to Yellowstone Park interests.

This, in outline, is a statement of the evolution of the Wylie camps from their origin, about 1883, to the present time. I use the word "evolution" because the Wylie system as it exists to-day is a development and not the product of a policy which followed the rules of well-known business enterprises. So far as I know there is nothing like this chain of eight permanent camps in this country. Without urging this statement, I can say with certainty that in bringing this outing system from its crude and unorganized simplicity of 25 years ago up to its present state of organization and efficiency we have had no guide other than our own experience in the light of the demands of a certain class of tourists and no rules save those prescribed by the Department of the Interior.

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At the present time what we call a night station or permanent camp is, in fact, a village of canvas houses. The parcels of ground on which these tents are located vary in size from a half to 5 acres. Each camp consists of the following equipment: One office or administration tent, one lounging or pavilion tent, one dining-hall tent, one kitchen, one laundry, and from 20 to 100 single-room and compartment sleeping tents, a log supply and storage house with cement floors, a meat house for fresh meats and vegetables. The office tent, dining tent, and other general-utility tents are located in the center of the chain of sleeping tents, each numbered consecutively, extending outward in two or more directions, as suggested by the contour of the site and the location of trees. In every camp the sleeping tents, which of course make up most of the plant, are set in military alignment a uniform distance of from 4 to 6 feet apart, according to their several capacities. There are three standard sizes—single-room, two-room, and four-room tents. All tents are of 13-ounce Z blue duck, with navy-blue stripes. The pavilion tent is centrally located in each camp, varying in size from 20 by 30 to 40 by 70 feet. A very attractive feature is the camp fire in the center of each camp, surrounded by rustic benches, where an organ is played, songs are sung, and stories are told until 9 o'clock. At 10 o'clock the curfew bell is rung, and all is quiet in camp.

Each tent is erected on a raised platform with heavy wooden frame for the support of the walls and top, as well as the floor. All sleeping tents have a 10-inch baseboard extending around the floor on the interior of the tent. The canvas side wall extends below this baseboard, thereby preventing showers from beating in around the bottom of the compartment. The furnishings of the Wylie sleeping tents are limited strictly to the necessities, but no effort or money has been spared to make them comfortable. Each private compartment is fitted with a stove, table, chairs, bed, and washstand with needful appliances. In front of each bed is a rug; in the hall of each tent are several rugs. Years ago the company saw the prime importance of good beds. Each bed is double, with steel springs and a high-grade mattress, cotton sheets (laundered daily), woolen blankets, and comforts. Much importance and attention has been given to the dining halls, kitchens, and offices. A news stand containing drug-store supplies, confections, cigars, tobacco, and post cards is maintained at each camp. Writing tables are maintained in each office, with ample stationery. The dining halls of 1911 improvement are 30 feet wide and 45 feet long, floored and wainscoted around all sides to the height of 6 feet. Above the wainscoting is a screened frame 3 feet high, which is curtained to make the room dark when meals are not being served, thus excluding the fly, which has been heretofore a great pest. The top of the tent is black duck, overlapped at the eaves with a blue and white fly, which gives it coolness and comfort equal to that of a log or frame building. The kitchens are made of log, floored, and with

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modern improvements and equipment throughout. The tables are long and narrow, with benches, and meals are served family style by young women.

The operating officials of the Wylie Co. are a general manager, master of transportation, assistant manager of transportation, head matron, a traveling steward, an auditor, and assistant auditor.

Each night camp is managed and operated by the following staff: A camp manager, a matron, assistant matron, clerk, from 6 to 12 porters or camp boys, from 6 to 12 dining-room girls, women cooks, women caretakers for the sleeping tents, and laundry women.

If I were asked to name a single factor which has contributed more than any other to the success of our permanent camping system as operated on its present scale I would answer, the character of our employees. To a system like ours this question is vital. The Wylie camps make no pretense to elaborate service or elegant furnishings. We merely advertise them as permanent camps, and it is the novelty as well as the economy which attracts people to this service. It is our constant aim to give the camps an individuality rather than to make of them a cheap substitute for hotels.

We have established a recreation pavilion at all night camps. This and other features, including the camp fire songs, are designed to break down formality and fill our guests with the true spirit of camping life. It is apparent that the employees under such a system mingle with the guests not only in the capacity of servants, but also as entertainers and interpreters. In view of this fact we have always drawn our camp employees from the ranks of intelligent and well-bred people. College girls and school teachers make up three-fourths of our female help, and the others are from private homes. Teachers of domestic science, geologists, college and high school instructors can be found in the ranks. I recall that our guide at the Upper Geyser Basin two years ago was a son of the president of the University of Illinois. A recent writer, emphasizing this feature of our system, said in a spirit of fun that he discovered that the boys who built the fires in the tents each morning were college professors in disguise. Tourists commend the management for the character of the employees, and almost invariably refer to the fact in subsequent correspondence. The following extract from a letter written by Mr. Wesley E. King, of the National Copper Bank of Salt Lake City, one of the many prominent men who toured the park with us this year, is as follows:

> What I like most about the Wylie way in addition to the accommodations of your camps and the convenience of your transportation facilities is the character of the employees or laborers which you have gathered about you. They are not menials, any of them, but intelligent, courteous, and well bred young men and women, and in taking care of us we have the constant feeling we were being looked after by loving brothers and sisters for whom we soon came to entertain a sincere regard.

It is no uncommon occurrence for a tourist to make application for employment for the current or next season. The attractiveness of this

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work is evidenced by the fact that we received over 2,000 applications from women during the spring of 1911, and out of these we select those best suited to the work. This gives us a very wide range from which to select the new recruits, as our employees are now from homes in 23 States.

The writer, having had 26 years' experience in supplying equipment and transportation in the Yellowstone Park, has been educated to the requirements in this regard. Having been interested in the local and permanent camping business during the above period indirectly, and directly and personally for the past six years, the writer speaks from personal experience that the constant aim of the company has been to perfectly satisfy all tourists wishing to tour the park by the permanent camping method.

The Wylie Permanent Camping Co., having about $300,000 invested in their plant, are in a position under the present system to care for an average of 150 to 250 tourists per day.

I can not refrain at this time from commending the Department of the Interior for its admirable policy of maintaining the park as far as practicable in its present natural state, whereby it has forbidden any desecrations in the way of unnecessary hotels and a needless duplication of permanent camp sites and equipment. This aim has restricted transportation solely to vehicles drawn by horses, thereby enabling not only the larger number of tourists who avail themselves of the licensed accommodations to enjoy the several days of scenic touring, but the people who live in adjoining States, constituting about one-sixth of all tourists, to avail themselves of the enjoyment and benefits of making the tour in their own transportation.

In cooperation with the acting superintendent and other local officials of the Government great progress has been made in solving the important problem of sanitation.

Under existing methods the greatest care is taken to keep each camp in a thoroughly sanitary condition and to avoid the spread of disease through the instrumentality of the house fly, which is the principal pest of this park. The dining rooms, kitchens, warehouses, and storerooms are floored and screened. Each closet receives due attention daily, and the drinking water, piped to kitchen and dining room at each camp, is pure and free from contamination.

We have endeavored to comply strictly with the requirements of the Secretary of the Interior and of the superintendent of the Yellowstone National Park, who inspects the camps constantly during the season.

We have been able thus far to care for all desiring this system and method, and feel confident that under a continuance of the policy as heretofore inaugurated by the department we can handle as many as may wish to come this way in the future.

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In closing I take pleasure in extending to the convention, and especially those members interested in the permanent camping idea, a cordial invitation to visit any or all of our camps.

The SECRETARY. Is there any discussion concerning the points brought out in this paper. There is a point which, it seems to me, might be emphasized at this time, and that is that we are going to hold another exposition on the Pacific coast in the very near future and the question of making preparations for that exposition is one of the most important things to be considered. I would like to hear from Mr. Smith.

REMARKS BY MR. R. E. L. SMITH, Representing Messrs. Shaw & Powell.

Mr. Secretary and gentlemen of the conference: I was very much interested last night in the discussion by the railroad men of the question of advertising. That is a subject which appeals to every one of us operating in this park. I think I can give you a homely illustration of the point made by Mr. Fee that personal representations are the strongest method of advertising by referring to some recent experience along that line. Mr. Fee stated that personal contact with the public was a more effective advertising medium than anything that could be printed and circulated. I had the pleasure of visiting the Yellowstone Park—it was my first visit here—about four weeks ago. Of course, when I went home I carried with me the usual complement of pictures, post cards, and other curios. When I reached home, I was surprised to find that exhibiting these things, with such descriptive explanations of them as I could give, proved interesting to so many people; and that my vocation as a conversational lecturer was in danger of growing to embarrassing proportions. I remember that a lady whom I had never heard of before came all the way from Baltimore to learn something about the Yellowstone Park, which she had not been able to get otherwise. She was contemplating a trip out here and assured me she would carry her purpose into effect. Others spoke about making the park tour as a result of my rather enthusiastic description.

Now, gentlemen, I represent and speak for the Shaw & Powell Co., who operate what is commonly called "movable camps" in this park. It is what is called officially "personally conducted" camps. Incidentally I speak for others in the same class, so far as my remarks apply. I assume that the most of you are familiar with the way in which these camps are operated, and hence I hardly feel it is necessary to take your time by telling in extended detail how it is done. The ideal and original method of "outing" was a camping party composed of congenial persons, moving as their inclination or pleasure suggested, stopping where they most pleased, and remaining as long in any particular place as fancy dictated.

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Those of us who were in the West in the early days can recall how families and friends went upon these pleasant excursions, camping at night where we found water, and remaining as long as we liked. If we found good fishing and cared to fish, we remained until our fancy prompted us to move; if the scenery attracted us, we stayed until our pleasure in it was satisfied. That is the ideal plan of outing, and that is also the ideal way to tour this beautiful park. I notice that there are thousands of persons who agree with me, for, by reference to the report of the superintendent, I see that something like 3,700 persons passed through this park in private conveyances this year, camping as I have indicated. And every year this method of enjoying this pleasure ground has, I am informed, been pursued by large numbers of persons. I assume that in the beginning this method was the only one in vogue, but as the reputation of the park grew and people began to come in from great distances some method had to be adopted by which they could be accommodated and given an opportunity to see the attractions of the park within a limited time. Out of this necessity evolved the movable camp system. That system operates, briefly, as follows:

Taking the Shaw & Powell Co. as a demonstration. A party of tourists arriving at Gardiner, coming in from all sections of the country, strangers to each other, with different tastes and inclinations and under different conditions and limitations as to time, desire to see the park. For convenience, we will say there are 20 to 25 persons thus assembled. They are loaded on coaches and, leaving Gardiner at noon, are conveyed to our first camping spot, on Willow Creek, where we have a camp which is permanent in its character. That camp has been allowed us by special authority of the Interior Department. There the first night is spent. Next morning begins the real tour of the park. It is necessary for us to take with us our tents, our bedding, and other equipment, including provision for tourists and employees and food for horses. When lunch time arrives the equipment necessary for the preparation of lunch is unloaded, and when lunch is concluded this equipment must be reloaded on the baggage wagon. When the place is reached where night is to be spent all of the stuff on the wagons is unloaded, tents are pitched and gotten into shape, beds are erected, and all things made as snug as possible. When morning comes the same process of loading is gone through with and the baggage wagons proceed as upon the previous day. You can readily appreciate what an immense amount of labor is involved in the transportation and handling of this impedimenta. I will read you a few lines from a memorandum to show what an outfit of this character contains. This is the usual equipment for such a party of tourists: Two baggage wagons drawn by four horses and one cook wagon drawn by four horses, all of which are heavily loaded; one saddle horse; five 2-horse teams for the accommodation of the tourists. To handle the wagons and teams requires three baggage teamsters and five tourist

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teamsters. In addition to these are required a cook and two waitresses and three camp men. Over all is a foreman, upon whom rests the responsibility of the trip. The money value of such an outfit is reasonably estimated at $7,500.

Passing further description of such a trip as we are contemplating, I beg to emphasize this point: No business can be successfully operated unless two cardinal principles are observed and adhered to. In the first place economy of operation must be supreme, and in the next place, and of not less importance, comfort and satisfaction of patrons must be attended to. In our movable-camp business as we must conduct it economy of operation has no place—it can not have. You can readily see that it is utterly impossible for us to operate under this system with real economy; you can readily see that the labor involved each day in the handling of camp equipment and supplies, to say nothing of the horseflesh which is cruelly tortured and worn out by the constant drag day after day, eliminates every feature of operative economy. To this point I desire to direct the attention of the conference; I might say the main purpose of my talk is to bring to your attention the absolute necessity which confronts us of so conducting our business as to apply the ordinary economical methods which suggest themselves, out of our experience, with overwhelming force. It is essential that we operate under an economical expenditure of money, labor, and time consistent with the comfort of tourists. Not only must we conserve our financial interests, by which I mean that we must be careful of our money expenditures, but we must also conserve the comfort and promote the pleasure of our patrons, and to do that we ought to be in position to adopt such new methods of operation as suggest themselves and discard those which are not consistent with progress. The idea of evolution constantly presents itself—from the original touring plan which I adverted to in the beginning to the movable camp, from the movable camp to permanent camp. The permanent camp plan is of course the ideal plan. You can draw your own inferences as to how difficult it is to operate movable camps satisfactorily when weather conditions are bad. Strong men and women endure the discomfort and hardships of the primitive camp plan and find real pleasure in them; others who have been accustomed to out-of-door life can also find pleasure in the primitive methods of the movable camp. When I toured the park a few weeks ago there was either rain or snow daily during my visit. This weather condition in no wise interfered with my enjoyment of the trip, but I was able to bring to my assistance many years of rough out-of-door life; and it so happened that nearly all of those who were with me had had out-of-door experience. But eastern people who lack in this direction find the primitive camping life at times of disagreeable weather distasteful and to some extent hazardous to comfort and health. Now, let me say something about our method of securing patrons. Most of our patronage is secured through tourists who

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have been served by us and have gone away pleased. When they go home they talk with their friends of their experiences and thus advertise the park and its transportation accommodations. I should say here in passing that the Shaw & Powell Co. employ in the transportation of tourists, and in matters incident thereto, 83 men and women, 132 horses, and 39 wagons.

Now, Mr. Secretary, taking up the question which you have heretofore raised, whether transportation in this park should be according to monopoly or competitive systems. I believe, sir, that the Supreme Court of the United States has said that a reasonable monopoly is, with respect to certain statutes not objectionable, but this case is not, as the courts sometime say, like that one. You have inquired of the conferees as to the comparative merits of "controlled monopoly" and "competition." As against "controlled monopoly" I suggest the better plan of "controlled competition." I believe that a reasonable amount of competition in these public parks is something greatly to be desired, where not now in effect, and essential to be established if the public interest is to be best conserved. Reasonable competition is not destructive; on the other hand, it is constructive; it builds up; it tends to improve the service as to quality, and what tends to improve the character of the service rendered to the public tends to increase the patronage of the public. Competition will, in effect, take from no company operating under like conditions a single tourist. By this I mean that the number of tourists conveyed by any company operating in the Yellowstone Park will not be reduced by reason of competition; on the other hand, I believe every company operating under competitive conditions and deserving patronage will find its patronage increased as a result of its competition. Do you suppose that the opening of Glacier Park will affect the attendance upon this park to reduce it? I assert it will rather increase it. People will go to the Glacier Park and then come here; people will come here and then go to the Glacier; and those who do not visit both parks, as well as those who do, will return to their homes and, extolling the attractions of one and the other or both, make more business in both directions. It is a rule of business that good accommodations and perfect satisfaction tend to increase business in arithmetical progression. My company desires to popularize this park.

I realize that the railroads are giving us as low rates as they can afford. I believe, however, that we can indirectly reduce the expense of touring this park. We probably can not reduce the money cost, but we can effect a reduction in the expense, using the word in a broad sense, by increasing the quality of the service we afford. We do not want to reduce this park to a day's automobile trip affair. It should be maintained as a place for a real summer outing—where tourists can pleasurably spend a week, 10 days, or more; and in pursuance of that idea this company wants to adopt plans to reach the people of the Eastern and

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Middle West cities and neighborhoods. We are financially able to do this; we have actual capital invested of $100,000, and we have sufficient money behind us to develop as much further as the patronage will justify. We want to give our patrons the best accommodations that their money will purchase; we want to lodge them in dry, warm tents, and place them to sleep in dry bed clothing, free from the odor of moisture and from all those things which tend to detract from the fullest enjoyment of their visit. We estimate that 40 per cent of the labor and time of our employees is wasted and thrown away, compared with what would be the effect if we could eliminate from our daily trips the dragging of our heavy impedimenta; we estimate that 25 per cent of our horseflesh is worn out and wasted in the drawing of those heavy loads. I wish that you could see some of our wagons and their loads. The time and labor and money that is lost in this direction we want to invest in additional comfort for our patrons. We have carefully considered the cost of maintaining permanent camps and are prepared to offer to our patrons camps equipped after the permanent style, equal to the best, at no greater outlay of money by the tourists than is now required for the inferior but more expensive to operate method. Mr. Secretary, we want to establish permanent camps and reduce the cost of our operation, and we are now offering to establish such camps and afford service as good as any without increasing the expense to the tourist. When you come to determine the question whether you will consider favorably this application, I beg that you will bear in mind the old and familiar and never refuted doctrine that reasonable competition is the life of every business. I maintain that this truth applies with equal force whether it be imposed upon public or private affairs.

I do not believe that reasonable competition will hurt anybody. I believe it will help everybody, for it will force everybody who is in business here to furnish the best that can be given for the money. I wish you would think of that when you consider your policy and come to determine whether or not a policy of reasonable competition should not be instituted which will permit Shaw & Powell to take care of its thousand or more patrons a year in a proper way without the cost of an additional dollar to them. We expect that you will do so.

The SECRETARY. The remarks are on a subject of great importance with us. I wish to express one reflection that occurs to me; perhaps I can put it in the form of a question. Mr. Smith, would this service which you would render be as good as that rendered by the other permanent camps?

Mr. SMITH. Yes, sir.

The SECRETARY. Then, doesn't that raise the question as to why the other permanent camps should be permitted to charge the extra $10?

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Mr. SMITH. I think I should not be required to answer that question.

The SECRETARY. That is the question which confronts us. We must decide whether you can give the same kind of service; that is the whole question, not whether you should regulate their rates.

Mr. SMITH. We are here offering to do it; that is the only answer I can give.

The SECRETARY. If there is a representative of the Bryant portable camps present, we would be pleased to hear from him.

REMARKS BY MR. R. C. BRYANT.

I had not expected to be asked to speak to-day, and did not expect to do so, for I had not supposed that this was the time for discussion of the wishes and rights of the concessioners in the parks, but a discussion of the general principles of park interests, and so I do not care to take your time to discuss my business, which is comparatively small. The first time I came into the park it was with friends camping out. When the Oregon Short Line was opened to the western entrance many people wanted to camp with me, and more as a matter of summer recreation than of business I brought people here and sought a concession and obtained a concession for portable camps. I have been amazed to find the number of people that enjoy going through Yellowstone Park in that way. I have this season handled between 800 and 900 people in the park in this same system of portable camps. I have really without realizing it been drawn into an investment of $30,000 or $40,000 in horses, coaches, etc. I realize that when the business grows to such proportions it is really rather too large to be handled in that way, but I shall not discuss that phase of the matter at this time. The question should come up before the board or bureau or be taken up directly with the department officials. If the board is established, it seems to me that these things would be discussed before that board. There is considerable to take into consideration with relation to taking care of people. The growth of the business will be tremendous, especially on the west side of the park from the transcontinental trains running between the East and California. Between now and 1915 provision must be made for the entertainment of thousands of persons who will visit the Panama Exposition in San Francisco, and the accommodations here must be increased.

I do not know that I have anything further to discuss at this time. If there are any questions which the gentlemen desire to ask me, I would be glad to attempt to answer them.

The SECRETARY. Mr. Bryant, I do not think that is the question. I quite agree with you that we do not want to spend our time in dealing with the concerns of any particular enterprise. The question is whether we should have competition in these matters which are of the same character. We start, as you have said, with different forms of service. We have hotels, permanent camps, portable camps, etc. We grant con-

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cessions for hotels; then a man applies for a concession for a permanent camp, and we grant it; then another wants one for a portable camp, and he gets it. Then those in charge of the portable camps report that that way of handling people is not economical and want to change to a permanent camp. Now, without discussing any particular enterprise or any particular concession, we should like to hear from you gentlemen as to whether we should have competition in the various forms of service in the parks. That is the question which I would like to hear discussed. I assume that the patrons are satisfied, or the business would not increase as it does. Mr. Bryant wants to change from a portable camp to permanent camps. That raises the question as to whether we shall follow the rule of competition or the rule of regulated monopoly. If anyone has anything to say on that question, we should be glad to hear from them.

Mr. BRYANT. I wish to say that I believe in the national parks and reservations there should be regulated monopolies. In this park that is the way it has been done. I think for the best service of the people it should be continued. But we can not make an ironclad rule under conditions as they exist here. It is a question as to how many people can be accommodated in any one concession. If the concession is taking care of as many people as it can accommodate, it might be wise to establish another store, another hotel, or another camp, as the case might be. That is a matter which must be taken up by the department. I believe in the principle of a regulated monopoly rather than general competition.

Assistant Secretary THOMPSON. You say the ironclad rule should be broken when one concessioner can not accommodate all the people. Is there any complaint that the present permanent camping system is not accommodating all the people who desire accommodations?

Mr. BRYANT. I do not think that is a fair question to ask me.

The SECRETARY. It might be considered as the opinion of a competitor.

Mr. BRYANT. I have not made a request for anything else, and there is no competition now, practically, in the particular line in which I am interested. The Shaw & Powell camps and I get our business from the west entrance of the park in this particular method of handling people. We do not compete with each other to any extent.

Mr. SMITH. Let me say something. I do not think that the ability of any one concern to handle all the people cuts any important figure. On the same theory we ought to say that there should be but one railroad between Baltimore and Washington, but one between Washington and Chicago, etc., because one road could increase its capacity sufficiently to handle all the traffic. There is a deeper and more important principle at the bottom of it. Competition is the very life of trade. That does not mean it gives it life——

Assistant Secretary THOMPSON. I am not taking issue with you. The Secretary has submitted the proposition of a regulated monopoly, as to whether or not that is the best form of conducting business in the national

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parks. Mr. Bryant has stated that it is his opinion that a regulated monopoly is the proper form of administration in a reservation like this. I understand fully that you do not take that view of it.

The SECRETARY. Is there any other concessioner here who is interested in this movable camping system?

We have another form of concession in these parks. In Mount Rainier we have the Tacoma Carriage & Baggage Transfer Co., doing some business there. Is Mr. Ternes, the president, here? Have you any suggestions to make at this time, Mr. Ternes?

REMARKS BY MR. J. P. TERNES, President of the Tacoma Carriage & Baggage Transfer Co.

Mr. TERNES. I might say that we operate over 28 miles, 14 miles by automobile and 14 miles by horses. Travel handled by our company in Mount Rainier Park shows a 50 per cent increase during the last two years, and judging from the publicity which we are getting now I believe I will have to double my plant for the coming year.

The SECRETARY. Do you handle both passengers and baggage?

Mr. TERNES. Yes, sir. In order to do that I will have to increase my plant. That will take quite an outlay of capital—at least $15,000 or $20,000. It has been the custom to issue a permit for a period covering one year. Now, it seems to me that we should have a longer permit, should have a permit for 5 or 10 years, in order to put in a good plant.

The SECRETARY. What do you think the period of the lease should be?

Mr. TERNES. Five to ten years, say 10 years. The charges should be regulated every two or three years, at the discretion of the department. I think the transportation companies put in a good amount of money, and will have to have returns. When a concessioner gives good satisfaction the department is not going to disturb him. At the same time it is more satisfactory to him to know that he has an agreement with the department for a number of years; he feels better and gives the public better service, because he feels that the period which his lease has to run warrants him in installing better equipment. That is all.

The SECRETARY. There may be other concessioners or lessees who wish to be heard on this subject. Has anyone any ideas on this feature of the parks which he wishes to present now? I believe Mr. Sell, of Yosemite Park, is present, and we would like to hear from him.

Mr. SELL. I haven't anything to say regarding hotels or the valley, and I would rather listen to the discussion.

The SECRETARY. Mr. Sell, have you a hotel in Yosemite Park?

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Mr. SELL. I am manager for Mrs. Cook, who leases a hotel from one year to the next.

The SECRETARY. From year to year?

Mr. SELL. Yes, sir; the equipment is owned by the Government.

The SECRETARY. Is that the only hotel in the park?

Mr. SELL. No, sir; there is a hotel at Glacier Point which is operated under the same lease.

The SECRETARY. Operated under a one-year lease?

Mr. SELL. Yes, sir.

The SECRETARY. Mr. Sell, has your principal, Mrs. Cook, taken up the question of taking care of the great increase in travel which will result from the Panama Exposition?

Mr. SELL. There is an agitation in the valley for a new hotel, but on account of the lease it is hard to get capital for building. They think there should be a 20-year lease.

The SECRETARY. Is Mrs. Cook prepared to handle the hotel in the proper way if suitable arrangements can be made?

Mr. SELL. I think I may say that I can interest the necessary capital, and that Mrs. Cook will withdraw.

The SECRETARY. That question of taking care of the additional travel which is bound to result from the Panama Exposition is one in which I am deeply interested, and the sooner you present your definite proposition to the department the better you will please me.

Mr. STEEL. With a 20-year lease I can get the money I need for the improvements I have in mind.

The SECRETARY. You should consider what proposition you can make to the department.

Mr. STEEL. I suppose that will be presented to the department by correspondence after this conference. I have it all ready.

The SECRETARY. Yes; the details should be taken up after the close of the conference. With this exposition in view we are particularly interested in having the park concessioners get their propositions into our hands at the earliest practicable moment.

REMARKS BY MR. FOSTER CURRY.

I have a letter here from my father, which he has requested me to read. It is as follows:

YELLOWSTONE NATIONAL PARK,
Gardiner, Mont., August, 8, 1911.

DEAR SIR: After being in this altitude three days I had to get out to-day. Please recognize my son, Foster Curry, as my representative in the conference. I would like to plead with you for 5 to 10 year leases instead of annual, and also for protection for our building, which became yours when built, which can not be insured by us, and we have no protection in case of fire loss.

Very respectfully,

DAVID A. CURRY.

Mr. CLEMENT S. UCKER.

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Camp Curry, Yosemite, was established in the year 1899 as a hotel camp; run on the American plan, its location being on the floor of the Yosemite Valley, amid a grove of large pine and cedar trees under Glacier Point.

Its equipment was simple during its first few years of business, but improvements have been made from year to year, until now it furnishes its guests almost every convenience of a modern hotel. Water is piped throughout the camp; the tents are double roofed, different sizes, to accommodate from one to four people, as may be desired. The tents are furnished with iron beds, bureaus, washstands, and the board floors are carpeted with burlap or duck.

A rustic style kitchen and dining room have been built, the dining room having a seating capacity of 226 people.

The camp is equipped with sanitary toilets, eight tub baths, and one hot and cold shower bath. There is also a small steam laundry used in washing the camp linen.

A rustic style office with large open fireplace has been built, affording a comfortable rest and reading room.

In the year 1901 Camp Yosemite, now Camp Lost Arrow, was established by the Sentinel Hotel Co. on the bank of the Merced River, opposite the hotel.

This camp was later moved to its present site, near the foot of Yosemite Falls. The equipment of this camp consists of rustic style buildings and tents, similar to those in use at Camp Curry.

Camp Ahwahnee was established in the year 1908 at the foot of the Glacier Point Trail, about three-fourths of a mile from the hotel, and has a capacity of 200 guests. This camp is built and equipped in the same manner as Camp Curry and Camp Lost Arrow.

The camp grounds and camp buildings of all the camps on the floor of the valley are electric lighted, deriving their power from the Government electric plant. Besides these, there is a camp on Glacier Point that is run in connection with the Glacier Point Hotel.

During the first year of Camp Curry's business the camp entertained 280 guests, 400 guests the second year, and 3,600 guests the past season.

During the last three years more than three-fourths of the people who have visited Yosemite have chosen the camping route, proving the popularity and success of the camping business in Yosemite.

The best way to get people to go to the parks is to be liberal with the concessioners. In regard to leases, I would like to indorse what the gentleman over here (Mr. Ternes) said, that with longer leases we would feel like spending more money, say, if we had a lease for from 5 to 10 years. We feel that we should have that much time in which to know that we are going to be there. We advertise and draw business to Yosemite Park through the conveniences of our camps, and if we did not feel that we would be there for a considerable period it would be like

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wasting money to advertise. I may say also that a limit has been placed on our accommodations of 400 people. The camps here handle all the people who enter. We are willing to make improvements and enlarge the accommodations so as to handle a larger number of people than at present. We hope that this matter will be acted upon favorably by the department.

The SECRETARY. May I ask what is the term of the lease of the Wylie people?

Mr. LAMAR. They are operating under a 10-year lease. The present lease is dated March 31, 1906, and runs for 10 years. It is an extension of an older lease.

The SECRETARY. That, I think, illustrates the inconsistencies which prevail in the administration of the parks. We find that where a man has a 10-year lease for Yellowstone, for the same kind of a concession in Yosemite he can secure but a 1-year lease, and there they have far less adequate accommodations from the hotels. It seems to me that this is a subject to which the department can very properly give attention.

We have had a series of talks from men of wide experience in transportation and other matters, and should now like to hear from Mr. Uhler, of the Steamboat-Inspection Service, on the question of inspection of power vessels in the national parks.

REMARKS BY MR. GEORGE UHLER, Supervising Inspector General of the Steamboat-Inspection Service.

Mr. Secretary and gentlemen: First I want to express to you my grateful appreciation of the compliment implied in the invitation to address this conference, because I feel rather out of place in a convention with gentlemen who are discussing questions that are entirely separate and apart from the service which I represent. The question of protection of life, and more particularly as applied to marine transportation, has been the humane policy of the Government since 1838, and it has lived and grown through 73 years of successful operation. It is a matter in which I have been deeply interested, and I think you will readily understand why when I say that for more than 40 years I have done nothing but work in connection with marine transportation. In the early operation of steamboats the importance of protecting life upon steam vessels was recognized by Congress. In 1838 legislation was enacted providing for the inspection of hulls and boilers of steamboats carrying passengers for hire. It seemed at that time to be the only concern of the people, under the act of Congress, to protect the passengers. In fact, the enacting clause provided for the better security of the lives of the passengers. The method of inspection of steamboats was this: Upon application of the master or owner of a steamboat to the judge of the district court in which the steamer

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was located or operated, the judge selected a man to inspect the boilers and one to inspect the hulls, each of whom received $5 for his services from the owner of the vessel. The results were such that in a few years the question was agitated whether there should not be a general law which would provide for the inspection of steamboats generally, and in 1852, on August 30, a bill was signed by the President providing for the general inspection of steamboat hulls, boilers, and engines and for the licensing of pilots and engineers. There was also provided in the legislation an exemption for certain classes of vessels from its requirements. The bill also provided for the establishment of boards of local inspectors in different parts of the country and also for supervising inspectors in charge of the districts. The result of the legislation was so far beyond the expectation of the people and Congress that in 1864 the clause exempting certain classes of steamboats was made a provision of the law, transforming it from an exemption to a requirement. In 1871 the whole system of steamboat inspection was revised and we got what is now generally known as "The steamboat law." I shall not undertake to go into the statistics of the service, but from my researches of the earlier records I find results which are not only interesting, but also a source of surprise to me, because I had not fully realized the importance of the service in its earlier organization which gave strength to the humane policy of the Government to protect life and minimize disaster—a policy that has lessened to a wonderful degree the perils incident to steam navigation and has put to flight those common vices of thoughtlessness and recklessness which formerly prevailed in navigation as in other methods of transportation in contempt of consequences so alarmingly prevalent.

The licensing of pilots and engineers was a question which for many years agitated the service as to whether or not the requirements were too drastic. Whether or not a man who has shown his fitness was able without any further examination to secure a license. We said no. He had to qualify by examination, show his familiarity with certain waters, depth of the waters, his familiarity with the course and trend of the channel, and to establish beyond peradventure his reliability in cases of accident, and his reliability to safely navigate the vessel over which he was given charge. The same method prevailed with the engineers. They were required to pass a rigid examination and made to demonstrate by an examination what would be their action under certain conditions, particular attention being given at all times to the matter of emergency cases, and what their action would be under such circumstances. As the service grew it took into consideration other matters, such as life-saving equipment, etc. We required that steamboats of certain tonnage and certain capacities should be equipped with hand pumps in addition to steam pumps. We found that while steamboat owners and agents as a general rule were willing and anxious to equip their vessels with reliable

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life-saving equipment, still others bought cheaper kinds of equipment. So in later years the service took over the matter of making specifications in detail as to the character of lifeboats, life preservers, etc. Further, it drew into the specifications for the construction of lifeboats certain features of material, etc. Every lifeboat and every life preserver used to-day on a steamer under the jurisdiction of the Federal Government is made under specifications prepared by the board of supervising inspectors, and every length of hose is required to stand a pressure of 100 pounds to the square inch, so that it has been the purpose of the Government, through this service, to give the public adequate protection and at the same time to always maintain a high standard.

Last year in transporting nearly 400,000,000 passengers we lost 392 lives. A little over 800,000 people carried to 1 life lost. So that, Mr. Secretary, every life that is lost from a steamer or from any vessel under the jurisdiction of the Federal Government is charged to the responsibility of the service and is covered by the statistics in the report. For instance, the year before last we had from suicides and other causes 44 deaths which no human precaution could have prevented, as in the case of a man seated on the rail who falls overboard. Provision can not be made against accidents like that. Then came the time when the gasoline boat made its appearance, and while the law has made no provision for anything other than a vessel propelled by steam, it had to take into account this growing factor in the commerce of the country, so that in 1892 legislation was enacted providing that all vessels propelled by naphtha, gasoline, etc., above 15 tons and carrying freight or passengers for hire would have to be inspected. The result of that legislation was that particular care and attention was given by owners to the fact that in the construction of a vessel she must be brought just a little bit within 15 tons so that she might escape the requirements of the law. From time to time the law was made a little more drastic, until nearly all vessels carrying passengers are under some provision of the law. The act of Congress approved June 7, 1897, provided that every vessel propelled by machinery should be considered a steam vessel within the contemplation of the law, so that every vessel propelled by machinery, no matter in what service she was engaged, whether or not she was for pleasure, she had to be provided with lights, fog signals, and had to observe the rules of the road. Later on the motor boat made its appearance as a pleasure craft, and you can very readily understand how the owner of the motor boat, who used her for his own purposes only, took to the law requiring him to meet certain regulations. Notwithstanding that there was some opposition to this, Congress has seen fit to throw this same mantle of protection over the pleasure boat as well as the commercial boat.

Mr. Secretary, I want to say that while all of these means of protection have been thrown around the passenger on the steamboat and the railroads, which the railroad representatives have good cause to realize;

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while everything has been done that can possibly be done to insure the safety and comfort of the passenger, the human element still enters into the safety of any person who intrusts himself to the care of a common carrier. We have cases of where a sleeping engineer on a steamboat has allowed his water to get low and resulted in an explosion. A very sad case was brought particularly to my attention in the death of Mr. Spencer, president of the Southern Road—a road that has equipped its system with all possible precautions against accidents, the block system, signal stations, etc.—where the engineer had gotten his orders and had signed for them, read them and put them in his pocket, where, say, his orders read, "No. 10 to pass No. 27 at a certain place." He went past his meeting place and met disaster. In that case the railroad company absolutely could not prevent that accident; there the human element was the factor that determined; the man had forgotten. I have not been able to understand, Mr. Secretary, why all of these restrictions have been thrown over steamboat companies and over railroads and yet find transportation companies, who have just as much responsibility, to be exempt from the slightest condition of inspection. Now, in my traveling around the country in the Steamboat-Inspection Service, extending over all parts of the country, I have had a chance to observe quite considerably the results of what we might term "noninspection." My suggestions, in some cases, I am glad to say, have been kindly received and adopted. It is a fact that since the adoption of these precautions no accidents have occurred, without taking any credit to myself. A peculiar condition, Mr. Secretary, in connection with the Steamboat-Inspection Service is that it applies only to the navigable waters of the United States. Navigable waters of the United States have been defined by the Supreme Court of the United States as those waters which by their natural course or by any method of improvement make a continuous highway over which general or competitive business may be carried on or between the two States that border on the water, so that a vessel located on an inland lake is exempt. Some States have laws which take up that question—the State of New Jersey, for instance. They have what are termed marine inspection laws. My mind now comes to conditions on Yellowstone Lake. Yellowstone Lake, aside from being within the confines of one State, was on a Federal reservation, consequently exempt from the application of the law regarding the inspection of steamboats; but right there I am glad to say the Department of the Interior recognized the importance of this inspection to such an extent that they required that these boats should be inspected by the Steamboat-Inspection Service before they would be permitted to navigate on the lake. I have not seen the motor boats now on the lake, although my men have been there and inspected them.

I spoke awhile ago, Mr. Secretary, of the absence of regulations in certain forms of passenger transportation. I could never quite understand why the regulations should be so severe upon railroads and so restrictive

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and so severe upon steamboats, and yet the very minute that we get to the entrance of this park that supervision stops. I observed the dangerous conditions on the road coming here from the Mammoth Hotel to the canyon yesterday; perhaps it is because I am not used to that kind of travel. I would be perfectly at home in a small boat in deep water, but I think that every transportation company doing business should do so under some kind of regulations that will insure the safety of the passengers. I do not think it is right that the mantle of protection should be thrown over a certain few of the traveling public and denied to those who are making some of the most perilous voyages that can be possibly thought of. The steamboat question in the Federal reservations is pretty thoroughly disposed of, but if you will allow me to suggest, Mr. Secretary, and I speak more earnestly upon the question because of my deep interest.—my life's work practically has been the administration of the law looking to the safety of passengers—I think that not only the coaches, their running gear, harness, etc., should be inspected, but I believe that these mountain roads should have their trackwalker just the same as a railroad. We came to a point yesterday on my trip here where if anything unusual had occurred, it made no difference how well the horses might have been inured to mountain roads and how absolutely under the control of the driver they might have been under ordinary conditions, there would have been nothing on the face of God's earth to have prevented them from starting down the side of that mountain. I want to say, Mr. Secretary, that's the way it appeals to me. I think that some one of the officers under the command of the superintendent of the park, or some of his men, might be detailed to make such an inspection of the coaches, harness, etc.[1]

I want to suggest, in closing, Mr. Secretary, that there is no reason why the regulations of the department should not fully cover all inspection in the national parks. Our inspectors go all over, even to inspect boats used by the Alaskan Indians away up in the Arctic regions, showing that the policy of the Government, no matter what the expense or inconvenience, is to not only extend the mantle of protection over passengers, but the poor devil who is down in the forecastle. The humblest emigrant is protected by the Federal Government; he must have so much air space, and so on. The idea was at one time that the man who went aboard these carriers could take care of himself—that is erroneous. I have found out that the average passenger can not take care of

[1] The transportation companies have their coaches and wagons thoroughly inspected by competent and experienced men at every station, who go over the running gear and any parts liable to break.

During the tourist season all roads on the belt line and the approaches from Gardiner and Yellowstone are patrolled regularly twice a day in advance of the stages, and in addition all camping places are visited daily, which requires passing over the biggest part of the roads and back by a second patrol; that is, the whole line is gone over at least twice a day, and the greater part of it four times.

In addition, station men are constantly passing to and fro between stations en route to the post and other stations on business. On an average three officers from the post are in the park away from headquarters on duty at all times, and during the season of 1911 the commanding officer was on the road 21 days during the summer.—Editor.

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himself, and we have to take care of him; and I think the law should be extended to reach every phase of transportation and where we are bound, in a general sense, to take care of the man who offers himself for passage upon any vehicle controlled or operated by a common carrier.

The SECRETARY. I am unable to find anyone on the list before me representing steamboat or launch owners operating in the national parks. If there is anyone here who has such a concession, we would be glad to hear from him. Is there anyone here representing the railroads who would like to say something on this matter? If not, we will take up the next subject, which is one of very considerable interest. In all of these national parks there is a very considerable body of timber. For instance, in the Glacier Park there is a large body of timber, and it has been suggested that some of this timber when matured could be cut, providing that it in no way marred or injured the scenic beauty of the park, keeping always in mind the paramount purpose of the creation of the park. We would like to have the representative of the Forest Service, Mr. Bruce, whose services we were permitted to have in the Glacier Park through the courtesy of the Forester for the purpose of making an investigation in that park and as a precedent to be followed perhaps in other parks.

REMARKS BY MR. EUGENE S. BRUCE, Expert Lumberman, Forest Service.

Mr. Secretary, my chief, Mr. Graves, is present, and it might be better if I were called upon after him.

The SECRETARY. I had arranged to have Mr. Graves address us at a later period of the program on the general subject of forestry, and unless he has some objections to offer we would like to hear from you now regarding the utilization of timber in the national parks.

Mr. GRAVES. Go ahead, Mr. Bruce.

Mr. BRUCE. Mr. Secretary and gentlemen: In regard to the utilization of the mature timber in the national parks my personal opinion is that such timber should be utilized wherever it can be done without injury to the scenic beauties of the park, which I believe should always be considered of the first importance. The mature, dead standing, and windthrown timber in the national parks should be sold and utilized wherever possible up to the point where such cutting and removal is liable to affect the scenic beauties of the park. Beyond that point I do not think it should be carried.

In some of the national parks a large amount of the mature timber can well be utilized at the present time, while in others very little of it can be utilized on account of the timber being located in such places that it is so inaccessible that it can not be removed at a financial profit. There

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are certain localities in Glacier National Park where a portion of the timber can well be removed without injury to the scenic beauties of the park, and such utilization of the natural resources of timber would furnish a considerable source of revenue to aid in constructing needed trails and in protecting the park. The mature timber should be disposed of wherever it is possible to do so without injury to the scenic beauties of the different parks and thus avoid allowing the timber to die, fall down and rot upon the ground, or become a dangerous fire menace. I believe that the sentiment of a majority of the thinking people who have been instrumental in bringing about the reservation of national parks would be to the effect that wherever the mature and dead and down timber could be cut and removed at a profit and where such removal would benefit the commercial interests of the country without materially affecting the scenic beauties of the national parks involved that it should be done in every instance.

The SECRETARY. I wish, Mr. Bruce, you would describe the general conditions as you found them in Glacier Park. I do not mean the details as they are in the records of the department, but the general situation as you found it.

Mr. BRUCE. Mr. Secretary, unless one is somewhat familiar with the general outline of Glacier National Park my remarks will not be very intelligible. The Great Northern Railway runs along the southern boundary of the park, and there is considerable fire-killed timber along the southern boundary which should be sold. In many of the ravines and stream beds running back into the mountains from the Flathead River and the Middle Fork of the Flathead River there is considerable mature timber not fire-killed which could well be sold in connection with the dead timber, which was principally killed by the forest fires of 1910. The mature live timber should, however, always be left standing where necessary, and especially where it affects the scenic beauties of the park by reason of being brought prominently into view of the traveling public, who visit this park chiefly on account of its scenic beauties.

On the higher slopes nothing whatever should be cut in those localities where the wind would be liable to blow down the timber left standing on account of its being deprived of a portion of its support as a result of the timber being removed.

In that portion of the park along the east side of the Flathead River there is considerable fire-killed timber which should be sold at once if satisfactory purchasers and a satisfactory price can be secured. The possibility of a sale of timber always depends largely upon the commercial desirability, the quality and location of the timber, the regulations under which it is to be removed, and the time allowed for the cutting and removal of the timber. The same general regulations which apply to the cutting and removal of timber from the national forests will

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usually apply to the cutting and removal of timber from the national parks, with perhaps some few additional regulations to cover different conditions sufficient to adequately protect the natural scenic beauties of the national parks. There is some live mature timber that can well be cut and removed in the vicinity of Lake McDonald in Glacier National Park, and there is also in this vicinity a considerable beetle-killed, infested, and blown-down timber which should be cut and manufactured into lumber. In my report to you, Mr. Secretary, I have recommended that in this particular locality this class of timber be cut and manufactured into lumber by the Government under the direction of the superintendent of the Glacier National Park to be used in the construction of the necessary administrative buildings for this park. There is no one large area or body of timber in this locality that should be sold in an amount sufficient to interest a prospective purchaser. The work of cutting and removal should be very carefully done under close supervision and there should be wide reserve strips left along the shores of the lake and along the main traveled roads and trails in which nothing whatever should be cut or removed except the dead standing and down timber, nor should any timber be cut where it would open up or mar the scenic beauties of the tops of hills or mountains visible from Lake McDonald. The same general principles of utilization of mature or dead timber where it can be done without injury to the scenic beauties of a park which are applicable in the Glacier National Park will, in my judgment, apply in a greater or lesser degree to the other national parks, and I believe that a general policy of utilizing the merchantable mature, dead standing, and blown-down timber wherever it can safely be done without affecting those features of interest or scenic beauty which the parks were primarily created to perpetuate should be applied to all national parks wherever possible.

The SECRETARY. The broader question of handling the forests in the parks is one of very great importance and one which, because of the unfortunate organization of the governmental service, it has been impossible to handle in the most efficient manner. Perhaps you do not know that the Forest Service, contrary to the general understanding, is not a part of the Department of the Interior, but a part of the Department of Agriculture. The result of this is not always happy, although during my administration both the Department of the Interior and the Forest Service have shown every possible disposition to cooperate whenever the necessity for such cooperation was realized.

We have with us the Chief Forester of the country, Mr. Graves, and I am sure that at this time, especially as the railroad men will have to leave us shortly, we would all like to hear from Mr. Graves on the general question of forestry in the national parks.

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REMARKS BY MR. H. S. GRAVES, Forester, Forest Service.

Gentlemen, I have come to this conference primarily because the problems of administration of the national parks have a very intimate relation to those of the national forests, which are under my direction. Most of the parks themselves are great forests. Many of them are entirely surrounded by national forests or are adjacent to national forests with very similar physical conditions. It is absolutely necessary that those in charge of the parks and the forests work in close, practical partnership. While the purpose of the national forests differs from that of the national parks, there are many questions of administration which are very similar, if not alike.

The forests and the parks are for the most part great undeveloped forests in which there are not as yet adequate means of communication and in some cases none at all over very large areas. In the past these areas of forest have been without protection and have suffered incalculable injury from fire and insects. To-day they produce far less in the way of timber than their real capacity, and the old slashings resulting from previous burns and from insect depredation are a tremendous menace from further fires, as well as being very unsightly.

The problems of organization of these great areas are essentially the same. These problems concern the efficient organization of the parks and forests for their protection, for their administration and the conduct of regular business, and for their development to carry out the purposes for which each was specifically established. The largest problem is that of protection from fire and insects, and that problem is the same in the forests and parks. For its successful solution the work on contiguous parks and forests must be so closely coordinated that the whole protection system is practically one.

I shall not go into details in the various questions of forestry involved in park management, but shall touch only certain principles which we are following on the national forests in connection with our protective work and which apply to the parks as well as to the forests. I have already spoken of the undeveloped character of our forests. We have the problem of organizing these areas so as to make protection from fire possible. The first necessity is to build trails into the forests in order to make the different portions accessible. This is required in order to enable an adequate control; it is necessary also to enable the movement of men and supplies in attacking fires. A second necessity is a complete system of telephone lines through the forests to afford quick communication in case of fire and a proper coordination of the various members of the patrol organization. The forests must be further equipped with well-located signal stations connected with headquarters by telephone. During the present season scores of fires have been quickly located and extinguished through our system of signal stations. It is essential also

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that ranger cabins be constructed in various parts of the forests so that during the season where there is danger of fire the forest officers may be near at hand. These cabins serve further as bases of supplies in case it is necessary to establish camps for the men engaged in fire fighting. The forests must be thoroughly well equipped with tools and appliances for fighting fires. It has been our experience during the year 1910 that we were often unable to fight the fires properly because we did not have adequate tools and other aquipment. It was a great lesson, and as a result we have greatly improved the protective equipment of the national forests and are much better prepared for emergencies than formerly. Still again the forests must be equipped with facilities for transporting the tools and supplies into the forests and in some of the less accessible forests we have pack trains which we use regularly in connection with improvement work. In case of fire they are available to transport supplies and tools to the crews.

Our forests are full of litter, down timber, and dead snags, all of which constitute a menace from fire. Every practical man knows that we can not clean up any considerable part of this débris without prohibitive expense. We do, however, prevent further accumulation of débris in connection with timber sales by disposing of the tops at the time of cutting. Gradually the old slashings can be reduced at dangerous points to guard against fire.

Another problem concerns the organization of the protective force. At the beginning of the administration of our national forests there was no systematic coordination of the different parts of the protective force. Usually each ranger worked by himself without regard to the others, and the force of one forest worked independently of the other forests. The organization of the protective force is one of the greatest and most important problems we have. I do not care how many men you have on the rolls, unless the force is well organized efficient work can not be accomplished. In the forests as now handled each man is in close touch with the other members of the protective force. The rangers are in systematic communication with each other. They notify each other of danger and help each other in case of need.

In addition to the regular staff there is an organized reserve force which we can throw into action for a few days or a few weeks in case of great danger. This reserve force is recruited from the people who live on the forest or do business there. We are organizing so far as possible every person who lives on the forest or near enough to be accessible as a constituent part of our protective system. Preparation is made, also, in case of emergency, to secure large bodies of fire fighters from outside. Thus we are organizing a protective system which utilizes evey person within or near the forests.

The work of constructive development of the forests is conducted according to systematic working plans which outline the policy of admin-

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istration, improvement, protection, timber sales, range management, and reforestation. General preliminary working plans have been prepared for all forests. More detailed plans have been already made for the forests having the most business. These plans look not only to proper present management, but provide for a development of the forests in the future according to a consistent policy. The national parks will be developed along somewhat different lines than the forests; but there is essentially the same kind of a problem of constructive development, which, as on the national forests, requires technical administration and far-reaching working plans. In some cases we have a slight advantage in the national forests in that we are cutting more timber and hence can often push our work of improvement more rapidly than would be the case if the resources were not utilized as on the parks.

I may say that on the national forests we do not overlook the question of the preservation of the scenic beauty. It is not, however, our prime principle of administration. Our first work is the properly regulated use of our resources, the use of the ripe timber and its replacement by new growth. But in making cuttings we do not overlook the question of the appearance of the forests. On the other hand, in the parks the question of scenic beauty is first, and development and use of the natural resources is secondary. This work is so closely related to the work in the national forests that the two can be harmonized and the two administrative bureaus and departments work in the closest partnership.

Personally, I believe there should be a bureau of national parks organized to carry out the purposes for which the parks were created, and with that organization and our own working in closest cooperation in all the different lines where our work touches we can meet the important problems successfully.

The SECRETARY. In connection with what Mr. Graves has said I think perhaps it would not be inappropriate for me to express some conclusions which I have arrived at in regard to this question of the relation of the Forest Service to the national parks and the Department of the Interior. I will start by assuring you, gentlemen, that I believe I will have the enthusiastic indorsement of all the people representing the Department of the Interior when I say that the Interior Department has no desire to add to the amount of the work which it now has. The Department of the Interior should lose some of the activities with which it is now charged by law. The Patent Office, for example, in my opinion is a branch of the department which should be transferred to the Department of Commerce and Labor, because it is primarily concerned in a matter of commerce. This will serve as an illustration of some of the things which should be taken away from us. On the other hand, I am thoroughly convinced that the separation of the Forest Service from the Department of the Interior is fundamentally a mistake. As a business proposition it is

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absolutely uneconomic. We have in the Interior Department to-day many questions of forestry in one form or another in three or four bureaus. The Indian Office is administering large tracts of land for the benefit of the Indians and meets with many questions in regard to the forests thereon. We have to organize a force to supplement the administrative officials of the bureau on forestry questions. When there is already organized in the Forest Service a corps of experts, it is perfectly clear that we are duplicating and must duplicate their work, and it is likewise clear that we can not expect to get the same grade of talent where the service is merely supplemental to the work of the Indian Service, while in the Forest Service the work is the primary object of the bureau.

Now, there are not only these timbered lands administered by the Indian Service. There are in the public domain enormous areas of forested land, and here arises again the same difficulty. When we come to the national parks we again meet with the same difficulty. In the matter of the location of the roads and trails through the national parks, if the Forest Service were a branch of the Interior Department we could develop the parks in such manner as to promote better protection against forest fires. I do not mean that the same roads and trails would always serve the ends of fire protection and development of the parks, but I have no doubt that in many instances this would be the case, and I believe there are now in existence many trails which are located just far enough away to be useless for fire protection, while, with the proper forest supervision in the beginning they might just as well afford excellent protection against forest fires.

If Mr. Graves is right, and it seems to me that he is right, we should have a bureau of national parks to take care of the administration of the parks; but there should also be a bureau in the Interior Department to have supervision over all forestry questions whether in the Indian Service the Land Office, or in the national parks. Then we would have one service worthy of the name. We would have proper administration, we would prevent the needless duplication of work, and we would get the best results. The difficulty in perfecting this work now, as was said by Mr. Graves, is because we have two heads for the service. The bureaus are in two departments, and while there is the sincere desire and earnest effort to secure practical cooperation, divided authority means unavoidable inefficiency and sometimes serious mistakes. We might attempt to consolidate authority and responsibility in the Department of Agriculture were it not for the fact that the final disposition of all these lands—Indian lands, the public domain, and the forest reserves themselves—rests and apparently must rest with the Department of the Interior. It controls the titles, and as to the Indian lands and the public domain generally it must control the administration. Under these conditions it seems that consolidation of all the forestry questions in an enlarged and more efficient Forest Service must place that service in the Interior Depart-

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ment, although if any of you can suggest some other solution which will not add to the labors of the present Secretary, I shall be particularly glad to hear from him.

Mr. LOUIS W. HILL. In discussing this idea of the Interior Department taking charge of the forestry matters, I think most of the people of the West would be gratified. These things are vital to the western people. This is the first time that the department has taken the matter up in this way, and if these questions are followed up, it will naturally be of great importance and facilitate matters very much. Now, we have had from time to time many matters up with the Forest Service. We are passing through Glacier Park now, and it brings up the question of fire protection. I think where a railroad passes through a reserve the timber clearing should be widened. I think where trails are built and wagon roads constructed the question of forest protection should be considered. Where timber is cut, it should be hauled to the center and burned. Speaking with some of the parties who were at the fires last year, they said it was difficult to stop the fires as there were no places to control them. It is of the greatest advantage to have firebreaks. As you noticed, on the road that we came over yesterday, the trees were cut and then thrown back into the edge of the timber, thus making a veritable fire trap. While the railroads may be careless we do not wish to leave the timber that way. It certainly will facilitate matters if this taking over of the Forest Service is brought about. We heartily approve of the suggestion you have outlined.

Mr. COOPER. I rise to indorse very heartily the plan, which you have suggested, of transferring the Forest Service from the Agricultural to the Interior Department. I have considerable business to transact with the Forest Service and with the various branches of the Interior Department, and it seems to me the logical place for the Forest Service, by reason of the very nature of its business, is in the Interior Department.

I want to thank you, Mr. Secretary, for the opportunity given us to participate in this conference, and again to say to you that anything we can do to promote the work of this meeting and to induce more travel to the park we will be very glad to do.

The SECRETARY. Are there any others who wish to say something on this subject?

Mr. J. HORACE MCFARLAND. I want to most heartily second all that you have said, Mr. Secretary, as well as what Mr. Graves has said on this subject. Unquestionably the best results will come from such a combination as you have outlined, and I see no difficulty with the harmony that is brooding over the situation here to-day in such handling as will conserve in the highest degree the best interests. The people who love scenery, if they are sane, do not worship a tree—they realize that it must be used. If all these matters were handled in one department it would promote the highest use of all the lands. I believe by this means the forest conditions would be improved and the park conditions improved.

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AFTERNOON SESSION, SEPTEMBER 12.

The SECRETARY. We would be glad to hear from Mr. Hopkins on the subject of insect infestation—the damage done to trees by insects in the national parks. Mr. Hopkins is connected with the Department of Agriculture.

INSECT DAMAGE TO STANDING TIMBER IN THE NATIONAL PARKS, BY A. D. HOPKINS, Expert in Charge of Forest Insect Investigations, Bureau of Entomology, U. S. Department of Agriculture.

CHARACTER OF THE DAMAGE.

The damage by insects to the living trees of the forests and ornamental grounds of the national parks consists of injuries to the foliage, branches, or the entire tree, which mar or destroy their attractive, educational, and historic features and diminish or destroy their commercial value.

Throughout the forests of the Rocky Mountains and Pacific slope, including the national parks, a large percentage of the timber has died during the past half century. The old standing and fallen dead trees, the red foliage of those that died last year, and the fading tops of those dying now bear evidences of the work of insects and are conspicuous examples of a great waste of forest resources. In some localities a few scattering trees die each year within a township or section; in others, clumps of trees, or whole forests, die within a single year.

The conifers, which are the predominating trees of this western part of the country, are subject to a high death rate from insect attack. The pines, the spruces, the Douglas fir, the balsam firs, the hemlock, the cedars, and the Sequoias, have one or more destructive enemies.

In the fall, spring, and early summer the dying and recently dead trees are conspicuous on account of their fading, yellowish-red, and reddish-brown foliage, as if injured by fire. When they are in large patches, or extend over a considerable area, their death is often attributed by the casual observer to forest fires.

EXTENT OF THE DAMAGE.

The extent of the damage to the forests by insects through the accumulation of dead timber and the dying of matured trees over large areas is vastly greater than the general observer would suppose. In fact, the dead and fallen timber is so common in all forests that it has heretofore been recognized as a natural and inevitable condition. Large areas of insect-killed timber have been charged to fire without further thought or examination to determine the real cause. Fallen timber has been attributed to storms and scattering dead trees to old age.

During the present year a reconnoissance was made of typical sections in one of the national forests, where there was no evidence that destruc-

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tive forest fires had occurred during the past 20 years. It was found that the standing and fallen dead yellow pine that had died within that period amounted in board feet to nearly half as much as that which was then living, and of the sugar pine and Douglas fir there was one-fourth as much dead as was then living, and every dead tree examined in the estimate showed evidence that it had been killed by insects.

In the Black Hills National Forest of South Dakota over one-half of the timber died within about 10 years. In Oregon and Montana nearly all of the larger pine died within a few years on areas of a few hundred to 100,000 acres or more. These, together with many other examples of extensive dying of timber, have been investigated and found to be caused primarily by insects. These investigations have demonstrated beyond question that a vast amount of timber is killed by insects every year within the forested area of the Rocky Mountains and Pacific coast regions. Furthermore, the accumulation of this dead timber and fallen débris is a menace to the living, because they furnish fuel for destructive forest fires. The losses from insect depredations are thus augmented by fires.

The extent of damage to the forest and other trees of the national parks has not been estimated, and, with the exception of investigations conducted in the Yosemite and Glacier Parks, we do not have much direct information as to the damage already done. It is plain to us, however, that the general conditions are not different from those which prevail throughout the regions in which the parks are located and in which the destructive species of insects are known to occur.

The amount of damage in the parks must be considered not only on the basis of the commercial value of the forest resources, but on that of the æsthetic and educational value of the virgin forest of typical examples of tree species. The loss of a section of the forest which forms the attractive feature in a landscape and is the only remaining example of the original type of forest growth of that region is far greater than that represented by the commercial value of the timber, as is also the loss of notable veterans and giants of the different species. These old forests and old trees are at present one of the attractive and instructive features of the timbered areas of some of the national parks, and if they are protected from their insect and other enemies they will be even more attractive features in coming centuries. Under present conditions these old trees of the virgin forest are in greater danger of being killed by insects than are the younger trees. Indeed, many of them have been killed within recent years.

The three giant sugar pines on the trail from Wawona to Glacier Point and the Yosemite Valley are examples. Two of them were dead and the other was dying when I saw them in June, 1904, and there was conclusive evidence that their death was caused by the mountain pine beetle. The veteran sugar pine known as "Uncle Tom" was being attacked at the same time by the same species of beetle, and I am informed that it died next year. The loss of these four giants of the species is irreparable.

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The Sequoias are supposed to be immune from depredating insects, but they are not. They are more resistant than other species, and that is one reason they have lived so long. However, each species has a bark-beetle enemy which under favorable conditions is capable of killing the largest and finest specimens. I saw one of the large redwoods in the vicinity of Eureka, Cal., that had been killed by its bark-beetle enemy, and when in the Mariposa Grove in 1904 I discovered the bark-beetle enemy of the big tree in the living bark of a storm-broken limb.

THE PRINCIPAL DEPREDATORS.

The mere mention of the names of the thousands of species of insects, each of which causes some peculiar injury during the life of the different tree species, would occupy more time than is allotted for this paper. Therefore we must consider the more important of those which are directly responsible for the death of the trees.

The little genus of Dendroctonus beetles, or tree-killing beetles, is represented in the Rocky Mountain and Pacific slope regions by a few species which are more destructive to the conifers of western North America than all other forest insects combined. They are a constant menace to the pine, spruce, and Douglas fir of the national parks. They are certain to be present in every park in which there are forests of their host trees, and have doubtless caused far greater damage than the park officials have realized.

The species, in the order of their destructiveness, are the mountain pine beetle, the western pine beetle, and Engelmann spruce beetle, the Jeffrey pine beetle, and the red turpentine beetle. All but the Jeffrey pine beetle of the Sierras are common to the northern Rocky Mountains and the Pacific slope. Those common to the central and southern Rocky Mountains are the Black Hills beetle, the Engelmann spruce beetle, the Douglas fir beetle, and the red turpentine beetle. There are three other species common to the southern Rocky Mountains and northern Mexico which are of less importance in causing the death of trees.

These insects are small, stout, black to reddish-brown beetles, ranging in length from about 2 to 9 millimeters, or 0.08 to 0.32 of an inch. They fly in the period from April to October and attack the main trunks of the living healthy trees by boring into the bark and excavating long winding or nearly straight egg galleries between the bark and the wood. In this manner they completely girdle and thus cause the death of their victims. As soon as the bark begins to die the eggs deposited by the beetles hatch, and the young grubs or larval forms complete the destruction of the inner bark. All of the broods develop into the adult stage within a year and emerge from the bark to fly in search of new victims. Each species has its peculiar habits in the choice of host trees, method of attack, and period of development.

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THE MOUNTAIN PINE BEETLE.

The mountain pine beetle attacks the mountain or silver pine, sugar pine, western yellow pine, lodgepole pine, and evidently all other pines of the northern Rocky Mountains and the Pacific slope. The adult beetles fly in the period from July to October, inclusive. When abundant they concentrate their attack on clumps and patches of trees. Their long, nearly straight egg galleries and radiating larval mines soon kill the bark on the main trunks, but the foliage of the infested trees remains green and apparently healthy until the following May and June. It then begins to change to a pale green and later to yellowish and brown. By the time all of the foliage is dead, about the 1st of July, the overwintered broods of beetles begin to emerge. By the middle of August most of them are out of the dead trees and have entered the living ones.

This is by far the most destructive insect enemy of the pine within its range, and under present conditions is a constant menace to the forests of matured or merchantable sized timber. It can be controlled by felling the infested trees and by removing the infested bark from the main trunks without burning the bark or tops. This work must be done during the period between the 1st of October and the 1st of July to destroy the broods of the beetle before they emerge. Whenever the timber can be utilized the product will pay all expenses. If it has no commercial value it will cost on an average of 50 cents a tree for the required treatment. After an outbreak is under control the living timber can be easily protected from further depredat ons by giving prompt attention to the felling and barking of any clumps of dying trees found during May and June. Rangers or fire patrolmen can be instructed so that they can do this and anything else that is required to maintain control.

THE WESTERN PINE BEETLE.

The western pine beetle attacks the western yellow pine, the sugar pine, and the Jeffrey pine. The beetles fly in late June to October, inclusive, and usually attack scattering individual trees, often selecting the larger and older examples. The adults excavate winding egg galleries between the inner living bark and the wood and the larvæ transform to the adult stage in the outer bark. The beetles begin to fly and attack the trees in June and continue the attack until October or November. The first generation develops and emerges in August to November, and the second generation passes the winter in the trees that are killed by it in the summer and fall.

The foliage of the infested trees begins to fade and turn yellow in a few weeks after the trees are attacked by this beetle. The summer broods of the first generation leave the trees by the time the foliage is reddish brown, but the overwintered broods do not emerge until the following May and June, in some cases several months after the foliage is brown.

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This species is next in importance to the mountain pine beetle as a destructive enemy of the pine, and the two species often combine in their attack. In this combined attack the western pine beetle is a secondary enemy of the trees because it follows the attack of the other species. When it is the primary enemy it is responsible for the death of a few scattering trees each year throughout the forest which results in the accumulation of dead timber. In the aggregate, this accumulative loss is very extensive, involving as it does the largest and best trees.

It can be controlled and the living timber protected from its ravages by felling the infested trees during the period between the 1st of October and the 1st of June and removing the bark from the main trunks and burning it. It is necessary to burn the bark because the broods of this species transform in the outer bark. They are not destroyed by simply exposing the inner bark as is the case with the mountain pine beetle.

THE JEFFREY PINE BEETLE.

The characteristic habits of the Jeffrey pine beetle are similar to those of the mountain pine beetle and therefore it requires the same treatment.

THE DOUGLAS FIR BEETLE.

The Douglas fir beetle attacks the Douglas fir, the big-cone spruce, and the western larch. The beetles fly in April and May and enter the living bark on healthy trees and on trees that have been injured by fire and those that have been recently felled. In habits of attack and general characteristics the Douglas fir beetle is similar to the mountain pine beetle, except that the former begins to fly earlier in the season and the foliage of the infested trees begins to die in the fall. It is very destructive to the Douglas fir throughout the Rocky Mountain region from British Columbia to Mexico but is much less so on the Pacific slope and especially toward the coast. It can be controlled by felling the infested trees during the period between the 1st of September and the first to middle of the following April and removing the infested bark from the trunks without burning.

THE RED TURPENTINE BEETLE.

The red turpentine beetle is the largest species of the genus Dendroctonus. It begins to fly in April and is active until October and November. It attacks the pine and rarely the spruce, but as a rule confines its operation to the base or basal portion of the trunks. While its normal habit is to breed in the bark of stumps and logs of newly felled trees, it often infests the bark on healthy trees. It rarely kills a tree, but is the cause of a large percentage of the basal wounds known as "cat faces" and fire wounds, so commonly met with in the pine. This is a far more difficult species to control than the others because it breeds in the stumps of felled

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trees and the base of those killed by the other species or by fire. Valuable individual trees can be protected by cutting the beetles out of the bark as soon as their presence is indicated by masses of exuding resin mixed with reddish boring dust.

Wherever there is continued lumbering operations, the red turpentine beetle confines its attack to the stumps, but in the national parks and private grounds, where a limited amount of timber is cut, or where the ravages of the mountain pine and western pine beetles have been controlled, it is likely to cause more or less extensive damage to the living timber for a year or two after.

In combating the other beetles in the national parks care should be taken to remove the bark from the stumps whenever they are found to be infested with this pest.

THE ENGELMANN SPRUCE BEETLE.

The Engelmann spruce beetle attacks the Engelmann spruce, blue spruce, and any other species of spruce found within its range, but does not attack the pine, Douglas fir, or balsam fir. It flies in the period from June to August and attacks the bark of the main trunks of the older or matured trees. Its habits are similar to those of the mountain pine beetle, except that it flies earlier in the spring. When the trees begin to die the needles fade to a pale green and fall before they change to yellow or brown, but the bare twigs present a grayish-brown appearance. The infested trees are easily located in the fall and early spring by the fallen needles and the bare twigs of the tops.

This species occurs from British Columbia to Mexico, and at times is very destructive to the Engelmann spruce forests. It can be controlled by felling the infested trees and removing the bark from the main trunks during the period beginning with the 1st of October and ending by the middle to last of May.

THE BLACK HILLS BEETLE.

The Black Hills beetle is by far the most destructive insect enemy of the pine of the central and southern Rocky Mountains and the Black Hills of South Dakota. Its habits are similar to those of the mountain pine beetle, and the same methods are adopted for its control.

FAVORABLE CONDITIONS FOR THE BEETLES.

There are certain conditions in the administered, as well as in the natural forests, which contribute to the multiplication and destructive work of these Dendroctonus beetles. One of the most favorable conditions is an extensive forest of matured and old trees of pine or spruce, because in the beginning of an invasion such trees are more often the first to be attacked and killed. Trees in such a forest injured by lightning or storms often form centers of infestation, in which the beetles

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increase to sufficient numbers to enable them to kill a few trees, and then the invasion is started, year after year increasing in force until a large percentage or all of the timber is killed. They then attack the young trees, and often waste their energies on saplings, in which the broods fail to develop.

DROUGHT.

It is a common belief that severe droughts weaken the trees and thus contribute to favorable conditions for the attack of the beetles. We have made pretty thorough investigations of this subject and are led to conclude that exceptionally dry seasons are more unfavorable for the developement of the beetles than are moderately humid ones, and that, therefore, droughts do not contribute to their multiplication.

FOREST FIRES.

Forest fires contribute, to a limited extent, to the multiplication of certain species which breed in fire-scorched trees, but as a rule forest fires kill more beetles than they protect.

COMMERCIAL CUTTING.

Commercial cutting of timber may contribute to the multiplication of certain species which breed in the stumps and tops, but if the cutting is continuous the insects confine their attack to the cut-over areas and do not invade the living timber. Sporadic summer cutting, however, is dangerous. The odor of the cut wood attracts the flying beetles to the locality. This contributes to their concentration, and when the cutting is stopped they invade the living timber.

SECONDARY ENEMIES.

The secondary enemies of the trees consist of numerous species which attack the bark and wood as soon as the trees become weakened and are dying from other causes. The Dendroctonus beetles are the primary enemies or leaders in the attack. The secondary enemies are to a certain extent their allies, and when very abundant may contribute to favorable conditions for rapid advance in the destructive movement, but more often they are dependents and scavengers, merely utilizing the dead and waste material. With rare exceptions these secondary enemies are not capable of killing trees on their own account.

UNFAVORABLE CONDITIONS FOR THE BEETLES.

The unfavorable conditions for the destructive work of these Dendroctonus beetles are to be found in administered forests, where the ripe or matured timber is utilized and where the young timber is protected by the prompt disposal of any clumps of dying trees during the fall, winter, and spring months.

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In other words, systematic forest management, based on a knowledge of the principles of silviculture and forest entomology, will soon present conditions so unfavorable for the Dendroctonus beetles that they can no longer exist as agents of destruction and waste.

NATURAL ENEMIES.

The natural enemies of the beetles serve as a repelling force against the progressive development of an invasion. Indeed they are among the principal factors which have prevented the extermination of certain of the more important forest tree species. These natural enemies consist of parasites and predatory insects, which feed on all stages of the barkbeetles, and birds, which feed on the adults and young of the barkbeetles. Were it not for the fact that birds also feed on the predatory and parasitic insect enemies of the barkbeetles, and that they are so limited in numbers, they might render the great service that is so commonly credited to them. Insect diseases in the form of epidemics sometimes serve to bring an invasion under complete control. Unfavorable climatic conditions have been known to exterminate a species of Dendroctonus beetles within an area of thousands of square miles. Under natural conditions successive generations of the older trees are killed, but the invaders are checked or repelled by their natural enemies. Generations of younger trees take the place of their ancestors, and the forest as such is perpetuated.

NATURAL CONTROL THE MOST EXPENSIVE.

In the national parks, national forests, and private forests where the resources have a commercial value this natural control of the insect depredators on the timber is the most expensive and wasteful. Our friends, the enemies of the beetles, can not be depended upon to operate for the best interest of the Federal or private owner. They can, however, be made to render efficient service as the allies of the owner in an aggressive warfare by him against the invaders. They are indispensable in the defense against renewed attacks and in the maintenance of conditions which will insure the future protection of the living timber.

GENERAL METHODS OF CONTROL.

It is through a knowledge of the habits and seasonable history of the various species of depredating insects, and the various complex factors operating for and against them, that forest entomologists are enabled to advise methods of procedure in practical control operations either to reduce or eliminate the favorable conditions for the multiplication of the beetles or to promote and utilize the factors that are unfavorable for their existence.

It is also through a knowledge of the characteristic evidences of their presence in the living and dying trees that we are enabled to give instructions to an experienced timber cruiser, forest ranger, or fire patrolman,

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which will enable him to readily detect an infestation and report upon its character and extent.

Experiments with and demonstrations of methods of control have furnished up-to-date information on the essential requirements in conducting active control operations, which enables us to advise the most economical and effectual method to be adopted for each species of beetle, each species of tree, and each locality where an infestation prevails.

Therefore, if the symptoms are accurately described and information is furnished as to the local facilities for utilizing the infested timber or for treatment at direct expense, specific recommendations for successful control can be made without an examination by an expert.

The presence in any national park of quantities of dying pine, spruce, or Douglas fir that has not been caused by recent fires is evidence of the presence and destructive work of one or more species of the Dendroctonus beetles. An examination of the bark of the main trunks of some of the dying trees will usually furnish conclusive evidence, for if the trees are infested the characteristic work in the bark, as illustrated in the bulletins of the Bureau of Entomology, will be easily recognized.

The next thing to do is to determine the extent of the infestation, the kind of trees involved, and the facilities for disposing of the timber by sale, free use, or direct expense. Then the superintendent should report the facts to an expert and ask for advice and recommendations. If he will then proceed without delay to dispose of the infestation according to instructions given him, success in checking or completely controlling the pest is almost certain to follow.

If upon locating an infested area, it is found to extend beyond the park boundary into adjacent privately owned timber or the national forests, cooperation, or at least concerted action is required, because an important center of infestation is a menace to the living timber within a radius of 10 to 20 miles.

If the timber of a national park is healthy, and centers of infestation are found in adjacent forests within a radius of 10 to 20 miles, the park superintendent should notify the owners. If, for any reason, the owners can not dispose of the infestation the park officials should help do it just as they would help in fighting a fire that was threatening the park. In a like manner the Federal and private owners of healthy timber adjacent to a park should help dispose of any extensive infestation in the park, because it may be more of a common menace than a forest fire.

If this policy of cooperation for the general good is adopted, and the essential requirements for successful control are strictly adhered to for a few years by the officials of the national parks, the national forests, and the principal private owners, the damage to living timber on the parks and adjacent lands will be reduced to a minimum, and ultimately thousands of dollars in commercial and æsthetic values will be saved for every dollar of public or private money expended.

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The SECRETARY. If there is any discussion of the paper just read by Mr. Hopkins, now is the time for it. If not, we will proceed to the next subject, and we will ask Mr. Bond, chief clerk of the General Land Office to address us on "Administration of national monuments."

THE ADMINISTRATION OF NATIONAL MONUMENTS, BY FRANK BOND, Chief Clerk, General Land Office.

The act entitled "An act for the preservation of American antiquities," approved June 8, 1906 (34 Stat., 225), was the final result of a concerted effort of archæologists, scientists, and others, active both within the public service and in unofficial fields. Long prior to 1906 the slow, cumbersome, and ineffective process of creating reservations by special acts of Congress had been tried, and with few exceptions had failed. Briefly, these efforts were ineffective, not because the Members of Congress were opposed to the preservation of historic and prehistoric ruins, but largely, I think, because these ruins occupied tracts far too insignificant in area, and the ruins themselves were not believed to be of sufficient national importance to warrant for each, or for each little group even, the creation of so important a reservation as a national park. More than one effort, however, was made by the friends of new legislation before a general measure, in the main satisfactory to those actively interested, was finally agreed upon and later enacted into law. At first the preservation of historic and prehistoric ruins was alone considered, but the great value to the people, as a whole, of the widely scattered evidences of nature's handiwork in the form of great caverns, extraordinary examples of mountain formation, due to volcanic activity or to surface or subsurface erosion, forced the conclusion that a law authorizing the protection of historic and prehistoric ruins would be seriously deficient unless it also provided for a public guardianship of these treasures of nature—a guardianship which would permit their free study for the extension and diffusion of knowledge and their inspection and observation for the pleasure of the people. So the purpose of the proposed act was greatly enlarged and extended by the insertion therein of the word "scientific."

The intent of the act as finally passed has been broadly and, I feel, properly and wisely interpreted in the very great majority of appeals since made to its authority. We have now monuments created by man, such as the pueblos, the cliffs ruins, and the sepulchers of nameless and unknown peoples, often most extraordinary as to location, character, and size; we have mission churches of the earliest period of Spanish conquest in the Southwest, and also lofty rock towers and cliffs upon which were carved over 300 years ago, with the daggers of the commanders, the names, dates, and other records of their visits and activity there. We have cinder and lava mountain forms, exemplifying geologically recent volcanic activity. We have extraordinary canyons and caverns, lofty piles and monoliths, and natural bridges, magnificent and impressive

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almost beyond description, the products of erosion. We have also, as a monument, a magnificent Pacific coast redwood forest, a grove of sequoia which, as hardy seedlings, spread their ever-green leaflets to the warming sun almost before man began the written record of his birth and achievements. The great majority of these monuments were made possible because the objects preserved have great scientific interest; but I have at times been somewhat embarrassed by requests of patriotic and public-spirited citizens who have strongly supported applications to create national monuments out of scenery alone. In many persons the artistic and scientific powers are happily blended, but the terms of the monument act do not specify scenery, nor remotely refer to scenery, as a possible raison d'être for a public reservation. Reserves of this character may be created by special acts of Congress; however, the existence of magnificent scenery within the boundaries of proposed monuments has not, to my knowledge, acted as a deterrent in their establishment. The creation within a national forest of the Grand Canyon National Monument, containing over 800,000 acres, is a case in point.

NUMBER, LOCATION, AND JURISDICTION OF NATIONAL MONUMENTS.

There are now 28 national monuments, distributed by States as follows:

Alaska:
- Sitka.

Arizona:
- Montezuma Castle.
- Petrified Forest.
- Tonto.
- Grand Canyon.
- Tumacacori.
- Navajo.

California:
- Lassen Peak.
- Cinder Cone.
- Muir Woods.
- Pinnacles.
- Devils Postpile.

Colorado:
- Wheeler.
- Colorado.

Montana:
- Lewis and Clark Cavern.
- Big Hole Battlefield.

New Mexico:
- El Morro.
- Chaco Canyon.
- Gila Cliff Dwellings.
- Gran Quivira.

Oregon:
- Oregon Caves.

South Dakota:
- Jewel Cave.

Utah:
- Natural Bridges.
- Mukuntuweap.
- Rainbow Bridge.

Washington:
- Mount Olympus.

Wyoming:
- Devils Tower.
- Shoshone Cavern.

Of these monuments 17 are under the jurisdiction of the Department of the Interior, as follows: Eleven created out of the public lands—the Devils Tower, El Morro, Montezuma Castle, Petrified Forest, Natural Bridges, Lewis and Clark Cavern, Mukuntuweap, Shoshone Cavern, Gran Quivira, Sitka, and Colorado; two, the Navajo and Rainbow Bridge, are in Indian reservations; one, Muir Woods, was a gift under the terms of the act; two, Tumacacori and Chaco Canyon, were partial relinquish-

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ments of entered homesteads under the terms of the act; and one, the Pinnacles, was excluded from a national forest. The remaining 11, embracing Lassen Peak, Cinder Cone, Gila Cliff Dwellings, Tonto, Grand Canyon, Jewel Cave, Wheeler, Mount Olympus, Oregon Caves, Big Hole Battlefield, and Devils Postpile, being within national forests, are under the jurisdiction of the Department of Agriculture.

A supplemental proclamation has been issued in the cases of three of the monuments, for the following reasons, viz: In the case of the Natural Bridges, Utah, to definitely locate and identify with an official survey and to include prehistoric ruins and prehistoric cave springs whose existence was unknown before the survey was made; in the case of the Lewis and Clark Cavern, to definitely locate in accordance with subsequent official survey; and in the case of the Petrified Forest, to readjust the boundaries and reduce the area from about 95 square miles to 40 square miles.

A modification of the Navajo National Monument will be asked as soon as certain necessary surveys therein are completed.

MONUMENTS UNDER THE JURISDICTION OF THE SECRETARY OF THE INTERIOR.

DEVILS TOWER NATIONAL MONUMENT.

This monument was created September 24, 1906, and was the first after the passage of the act. It is located in T. 53 N., Rs. 65 and 66 W., of sixth principal meridian, Crook County, Wyo. It embraces 1,153.91 acres of forested, mountainous, and grazing lands, in the approximate center of which is situated the magnificent rock pile of great height, with walls so precipitous that they have seldom or never been scaled, for which the monument was named. The tower is entirely the effect of surface erosion, its rock being much harder than the average country rock surrounding it. The pile covers an area of 20 acres or more, and its lofty height, over 1,300 feet above the river near its base, makes it visible for long distances and from all directions. On this account it was used as a guidepost by early explorers and trappers and by the Indians of the Plains long before them.

The first steps toward its reservation from private entry and possession were taken on February 19, 1892, when a temporary forest reservation embracing 60.5 square miles was created. Two-thirds of this tract was restored to entry on June 27 following, and the remaining 11,974 acres were included in a bill to create "The Devils Tower Forest Reserve or National Park." The bill failed of passage, however, but the reduced tract stood withdrawn until the national monument was created 14 years later. The Devils Tower is in no danger from tourists, souvenir hunters, or even professional vandals, but its natural forests, undergrowth, and grassy environment add much to its natural beauty, and they should be

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carefully preserved. To make this monument of value to visitors an iron stairway, winding if necessary, and securely anchored to the face of the vertical wall, should be constructed to the top of the rock.

The magnificent panorama of mountain and plain spread out on all sides below and extending for hundreds of miles in all directions would amply repay the visitor for the toil of the climb. The rock would then be a watchtower, as well as a guidepost of the past.

EL MORRO NATIONAL MONUMENT.

This interesting monument was created December 8, 1906. It is located in T. 9 N., R. 14 W., New Mexico principal meridian, Valencia County, N. Mex., about 35 miles east of the Zuni pueblos. It is composed of a colossal, towering cliff at the extreme end of a high and grotesquely eroded, varicolored sandstone wall of a mesa which marks one boundary of a lava-strewn valley draining into the Zuni River. Upon the top of this rock are prehistoric pueblo ruins. The cliff is not only beautiful in color, but most majestic and imposing because of its great height and its isolation. Its sheer walls are marked often with brilliant stratification bands of red, yellow and brown, and brownish gray, with here and there a projecting stratum of harder stone which protects the softer wall below. Upon these faces and in many places the early Spanish adventurers, possibly even those seeking De Vaca's mythical "seven cities of Cibola," and others who came after them and followed this well-known trail to the Zuni, Moqui, Navajo, and other Indian lands, left records of their presence carved plainly and permanently upon these rocks, their names, the objects of their expeditions, and their successes, as well as the dates of their passage. The legible dates vary between 1629 and 1737. Many are doubtless much older, but are partly illegible from the erosion of wind-blown sands and other natural agencies. These inscriptions are of great historical interest, and every reasonable effort should be made to protect them from the encroachments of the modern name writer and other vandals in public places who barbarously deface so many public buildings and monuments the world over.

The section of land upon which El Morro is located was temporarily withdrawn from settlement, entry, sale, or other disposal by the Secretary of the Interior June 14, 1901, and remained withdrawn until after the creation of the national monument, embracing a reduced area of 160 acres, in 1906.

MONTEZUMA CASTLE NATIONAL MONUMENT.

This monument is located in T. 14 N., R. 5 E., Gila and Salt River meridian, Arizona. It reserves and protects from private entry a strip of high cliffs, 40 chains wide by 1 mile in length, in the face of which are a number of cliff-dwelling ruins. Of these, and one of the most important

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in the Southwest, is "Montezuma Castle," for which the monument was named. The monument was created December 8, 1906.

This noted prehistoric ruin is located upon a ledge which is about 55 feet above the talus at the base of the cliff. It is in a recess at a bend in the rock wall, and is further protected from the ravages of time and the elements by an overhanging ledge of harder rock above. This ledge forms the only roof of the smaller top story. The ruin, as it now stands, is 48 feet high, has 5 stories, and contains 21 rooms, generally in a remarkable state of preservation. The castle's base was reached by ladders which extended from the base of the cliff to several narrow ledges in succession. Curio hunters prior to the creation of the monument had excavated under the foundations at the right-hand corner and the same had given way, and had used dynamite to break down an inner wall in the hope of finding relics.

The Arizona Antiquarian Society has made some very necessary repairs to protect the walls of some of the outer rooms, where the original roof had fallen, by the use of corrugated iron roofing.

PETRIFIED FOREST NATIONAL MONUMENT.

This monument was created by proclamation December 8, 1906. It is located in Tps. 16 and 17 N., Rs. 23 and 24 E., Gila and Salt River meridian, Arizona. The silicified forest remains of the district are not all confined within the boundaries of the reserve but are scattered, in more or less abundance, over a territory embracing nearly a hundred square miles. These deposits were the object of considerable commercial activity as early as 1884. Several companies were organized to exploit the alleged limitless fields of jasper, agate, amethyst, and chalcedony, more abundant, more magnificent, and more valuable than all of the Siberian jaspers, Pyrenees marbles, Chinese jades and Russian malachites together. Possession and ownership were sought through the location of placer mining claims, of which one hundred and seventeen 20-acre tracts were located largely with dummy entrymen, as appears from the reports, and among the finest and most abundant petrifactions. But these efforts to secure title were abandoned when the nonmineral bearing character of the stone was established and the high cost of manufacturing it into ornaments was learned by experiment. A stamp mill also was erected on the Santa Fe Railroad near the depostis, not to manufacture the petrifactions into useful forms but to pufverize them for abrasive purposes. This adventure is said to have failed because of excessively high freight rates. Several carloads of the smaller fragments were sent to Sioux Falls, S. Dak., and St. Paul, Minn., for manufacturing purposes, but the records fail to show whether or not the ventures were financially successful.

As already mentioned herein, the Petrified Forest Monument, created in 1906, contained about 95 square miles, and this large area was reserved

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because the most desirable and necessary tracts could not be determined in advance of a geological survey of the district. The boundaries were, therefore, temporary and were to stand until a geological survey could be made. Such survey was made in May, 1911, by Dr. George P. Merrill, geologist of the Smithsonian Institution, who, on request of the Secretary of the Interior, was detailed to visit the monument, make a survey of its deposits of silicified woods and report thereon with such recommendations for reducing the area as in his judgment the situation would warrant. The result of his work was a second proclamation signed July 31, 1911, modifying the boundaries of the monument and reducing its area to 40 square miles, or less than one-half the original reservation. It is now believed that the monument contains all of the petrified wood and all the land that the public interest requires. The most important deposits both as to size of logs and character are reserved and to properly restrict and control collectors, two tracts within the mounment have been set aside for their use. An effective custodianship will confine the operations of all authorized persons to these tracts.

Effort had been made to largely increase the area of the monument by adding to the original tract of 95 square miles, an approximately equal area north of the railroad, but the fact that the north side attractions were chiefly, if not wholly, scenic in character, was disclosed by correspondence, and I did not feel justified, under the terms of the monument act, in supporting the plan for enlargement.

CHACO CANYON NATIONAL MONUMENT.

This monument was created March 11, 1907. It embraces five separate tracts containing, approximately 20,629 acres of land, lying chiefly in Chaco Canyon, T. 21 N., Rs. 10 and 11 W., New Mexico meridian, San Juan County, N. Mex.

On May 1, 1900, the Santa Fe New Mexican, a newspaper of Santa Fe, published an item to the effect that Richard Wetherill was exploring and excavating remarkable prehistoric communal dwellings in Chaco Canyon. On the 8th of the month a special agent of the General Land Office at Santa Fe was instructed by wire to proceed at once to the locality to investigate, and if the alleged depredations were verified to lay the facts before the United States attorney. The agent wired that the excavations had been carried on for two years and the relics and entire rooms of the largest pueblo were being sent to the American Museum, New York City, the funds therefor being furnished by J. L. B. and F. E. Hyde, of the latter place. In April and May, 1901, another agent of the General Land Office visited the ruins, and in June recommended withdrawal of all lands in 40 townships from settlement to prevent entry of those occupied by the ruins. The lands were withdrawn by direction of the Secretary of the Interior April 4, 1905, four years later, and after the tracts upon

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which the three or four principal ruins were located had been entered under the land laws by Wetherill as a homestead. Subsequent examinations of this homestead entry were made in 1905 by another special agent and while he did not attempt to decide upon the actual purpose of Mr. Wetherill in entering a homestead that seemed at the time of entry to be chiefly valuable for prehistoric ruins located thereon, did show that the entryman had several buildings in value not less than $5,000, 60 acres in corn, 5 acres in wheat, and 2 acres in vegetable garden, all being raised without artificial irrigation. Also 5,000 sheep, 200 horses, 400 chickens, range stock, etc. It was apparent that a cancellation for fraudulent entry would be difficult and probably unjust; that instead of excavating the ruins the entryman was protecting them, and that he was willing to relinquish to the Government, under the terms of the monument act, the tracts within his entry upon which the great ruins were located. This he did on receipt of formal papers January 14, 1907, and about two months later, or March 11, 1907, the monument was established. Prior to Wetherill's relinquishment his homestead was carefully surveyed by an examiner of surveys and the ruins and the tracts upon which they were located finally determined.

The Wetherill relinquishment embraced four lots containing in the aggregate 47 acres of land, and was the first surrender of entered land under the act.

The Chaco Canyon prehistoric pueblo ruins are in many respects the most important of those in the Southwest. Pueblo Bonito, which was partially excavated by Wetherill, and also by the Hyde Exploration Expedition for the American Museum, New York City, is reported as having originally had 1,200 rooms, was 4 stories high, and covered a large area. This ruin, together with Chettro Kettle and del Arroyo, was relinquished for the monument. From the excavated part of Bonito great quantities of turquoise beads, pieces of pottery, and some human bones were taken, but the report states that the actual field of research is barely touched, since not only much the greater part of Bonito is yet virgin soil, but numerous other ruins within the monument limits have not yet been marked by a spade or pick. There are at least 17 important communal dwelling ruins within the reserved tracts.

MUIR WOODS NATIONAL MONUMENT.

This is one of the most attractive of the national monuments made possible because of its great scientific interest, although the chief of the objects it protects and preserves are giant redwoods 18 feet in diameter at the base and 300 feet high. It is located about 7 miles northwest of San Francisco and is visited annually by thousands of people, who may almost step over from the crowded streets of a great modern city into a wilderness where nature reigns supreme and appalls with the magnitude

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of her works. The monument tract embraces 295 acres, covered with a virgin forest of which three-fourths are giant redwoods, with much fir and the common hardwoods of the coast country. It is a part of Rancho Sausalito, an old Spanish grant. This magnificent possession of the people was the gift of a public-spirited citizen of San Francisco and Chicago, William Kent, who placed a market value on the redwoods alone at $150,000, but who believed that as the attractive and impressive feature of a national monument they would be priceless. The deed to the United States of America is dated December 26, 1907, and the monument proclamation followed on January 9, 1908, two weeks later. At the request of the donor the monument was named in honor of John Muir, of California. It is certain in the years to come that this unique and accessible national monument will be visited and appreciated by a growing army of nature-loving people. The custodian estimates that 50,000 people visited it the past year.

PINNACLES NATIONAL MONUMENT.

This monument was created January 16, 1908, and lies within what was the Monterey National Forest, California. It is a small reservation containing about 2,080 acres of land, and the monument, owing to the recent elimination from the national forest, is now under the jurisdiction of the Department of the Interior. It is located in Tps. 16 and 17 S., R. 7 E., Mount Diablo meridian.

The pinnacles is a monument of lesser importance. The objects reserved are groups of peculiar rock formations, the effect of erosion, I believe, accompanied or underlain by a series of caves of scientific as well as popular interest.

NATURAL BRIDGES NATIONAL MONUMENT.

This monument was created April 16, 1908.

Three gigantic natural bridges with horizontal span were discovered in southeastern Utah, in 1895, probably by Emery Knowles, a cowboy, and later in that year were visited by three cowmen, one of whom acted as guide to a prospector named Long, in 1903. Long gave to the world, through the Century Magazine of August, 1904, photographs and descriptions of the bridges. For several years thereafter nothing more definite as to the geographic location of the bridges could be learned than that they were situated in White Canyon and its tributaries, more than two days' ride easterly from Dandy crossing of the Colorado River. In May, 1908, the General Land Office instructed W. B. Douglass, an examiner of surveys, to make an examination and survey of the bridges, which was done that month. On June 8 following a cave spring at the head of the South Fork of Fish Creek and a cave spring on the head of Road Canyon were withdrawn from settlement on receipt of telegram from Douglass, via Dolores, Colo. Later Mr. Douglass filed the field notes and plat of his location survey of the bridges.

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The proclamation of April 16, 1908, did not definitely locate the bridges with reference of one to the other, nor as to their geographical location on the map. It did, however, reserve a 40-acre tract around each bridge. A much larger tract was surveyed, because of the cliff dwellings and other prehistoric ruins located on the walls of the canyons, which the bridges crossed. The two prehistoric cave springs with pictographs on their walls, which were withdrawn from entry June 8, were added with 160 acres surrounding each. The total area of the monument as provided in the second proclamation of September 25, 1909, was 2,740 acres. These three magnificent natural bridges together with the Rainbow Bridge, discovered later, are unique and unprecedented both as to height and spans. No other known natural bridges equal or even approach them in their awe-inspiring grandeur.

LEWIS AND CLARK CAVERN NATIONAL MONUMENT.

Two proclamations, as already noted, have been issued covering this monument, the first on May 11, 1908. At this time the land was unsurveyed, and the reservation was made in order to prevent entries that might be embarrassing later, and with the intention of asking a second proclamation after an official survey had fixed the definite location.

For some years prior to the creation of the monument a portion of the tract was covered by a mineral location, which was finally held invalid by the General Land Office and the Department of the Interior. The official survey, however, developed the fact that the cavern, and the 160-acre tract which centered on the cavern's entrance, were in an odd-numbered section, which became the property of the Northern Pacific Railroad Co., according to the terms of its grant from the date of the passage of the act. This company formally deeded the land to the United States, February 14, 1911, with the understanding that title would immediately revert to the grantor in case the tract was abandoned for monument purposes, and the latter would be entitled to immediate possession. A second proclamation was then issued by the President, definitely fixing the boundaries of the monument with reference to the public surveys. This proclamation was of date May 16, 1911.

This limestone cavern is located in T. 1 N., R. 2 W., Montana principal meridian, Montana. It has been partially explored to a depth of many hundred feet, and as appears from reports on file is superbly decorated with stalactites and stalagmites and all manner of curious drip formations of great interest. Eight or ten chambers have been explored, the largest of these being 105 by 135 feet, and about 100 feet high. Many of the stalactitic formations in this chamber are over 20 feet long, and of almost indescribable beauty.

TUMACACORI NATIONAL MONUMENT.

This little monument, containing but 10 acres of land, affords protection to an old Spanish Mission Church, located in T. 31 S., R. 13 E., Gila and Salt River meridian, Arizona. It was built by early Jesuit monks,

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who burned the bricks therefor. Its walls in some places are 12 feet thick, and the old burying ground lies to the rear with the ruins of an old fort therein. The cemetery and mission are inclosed by a high brick wall. This old mission was on the rejected Tumacacori land grant, and has suffered much from neglect as well as vandalism. Portions of old paintings within the chancel have been knocked off and carried away, and the names of many of these vandals are written inside the nave. The land upon which the mission stands was entered as a homestead by Carmen Mendez, who fully appreciating the desirability of preserving the ruin, showed the faith that was in him by relinquishing the necessary 10 acres of his claim to the Government, June 30, 1908.

NAVAJO NATIONAL MONUMENT.

The present monument reservation was created March 20, 1909, for the purpose of preventing unauthorized excavations of several very important prehistoric pueblo ruins located within the Navajo Indian Reservation, but whose exact geographical location was unknown. For this reason all of these ruins within a large tract were reserved, together with a 40-acre tract surrounding each. This still stands for the reason that we have not yet been able to definitely locate one of the most important ruins on Navajo Creek by a careful traverse line connecting it with some established public survey corner. This ruin, however, is of exceeding interest. It was visited by examiner of surveys, W. B. Douglass, who not only found an important and astonishingly well preserved ruin, but discovered written upon the walls of some of the rooms a record, for the most part easily legible, of the visit of an early Spanish expedition with names, dates, etc.

The principal ruins at the head of Laguna Creek are along the walls of its canyons on the south side of Skeleton mesa. One of these contains about 150 rooms. There are in all four groups of ruins in the neighborhood of Bubbling Spring. One of these groups contains five separate ruins, having about 40 rooms each. Of the Bubbling Spring group perhaps Keet Seal and Betata Kin are two of the most important. These have been connected by traverse with an Arizona-Utah boundary monument and a second proclamation might have been issued some time ago greatly reducing the area and the number of ruins of these groups reserved by the Navajo monument proclamation, but for the fact that we wish to add to and make a part of this monument the important ruin on Navajo Creek containing the Spanish inscription and discovered by Douglass.

MUKUNTUWEAP NATIONAL MONUMENT.

This monument was created July 31, 1909. It is located in southwestern Utah, in Tps. 40 and 41, S., R. 10 W., Salt Lake meridian, and is upon unsurveyed land. It contains approximately 15,840 acres, which lie, in the main, within one of the most striking canyons of the Rocky Mountain States. The canyon has smooth, perpendicular walls varying in

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height from 800 to 2,000 feet, which are, with the exception of one trail, unscalable within the monument limits, and this trail is so dangerous that only unburdened animals are permitted to use it. Parallel with the canyon walls and midway between them is a long ridge high enough to cut off all view from either side of the canyon to the opposite canyon wall, thus dividing the canyon into two parts equally important. The North Fork of the Rio Virgin, a stream over 20 feet wide and 18 inches deep, flows through the canyon. The United States deputy surveyor who closed his lines upon the canyon walls reports that the climate in the bottom of the canyon is tropical while the regular mountain temperatures prevail immediately adjoining and beyond the rims. At intervals along the west walls several streams plunge over the edge of the chasm forming magnificent falls 800 to 2,000 feet high. Some of the views into the canyon are only surpassed in grandeur by those offered by the Grand Canyon of the Colorado. From the descriptions on file, however, I think this canyon is, in many ways, similar to the Yosemite Valley, California, now in a national park, whose vertical walls, while considerably higher in places are not continuously perpendicular, and whose highest waterfall, the Yosemite, has a drop of 1,600 feet.

SHOSHONE CAVERN NATIONAL MONUMENT.

This little monument was created September 21, 1909. For the purpose of preventing entry and to determine by examination the character of this cavern and the tracts of land which might be needed for its protection, two sections of land were withdrawn February 16, 1909. In April following a mineral inspector of the General Land Office visited the cavern and reported in substance as follows: That it was discovered by Mr. Ed. Frost, of Cody, in 1908, who chased a mountain lion into it and, after vainly trying to smoke out the animal, concluded to explore. A mining claim was soon located on the cave, but no evidence whatever of mineral was found, either in the limestone of the cavern or in the surrounding country. The entrance to the cavern is on the north face of Cedar Mountain about one-quarter mile south of Shoshone River, 3 miles east of the Great Shoshone Dam of the Reclamation Service, and 4 miles west of Cody, Wyo. It has been explored about 1 mile and found to be adorned with many beautiful drip formations including in places an entire encrustation of beautiful and sparkiing crystals. There are holes and pits in the cavern of unknown depth and other attractive features which, considered as a whole, were worthy of a small reservation. The monument contains 210 acres ol land, and is in T. 52 N., R. 102 W., of the sixth principal meridian, Wyoming.

GRAN QUIVIRA NATIONAL MONUMENT.

This small monument, covering 160 acres, was created November 1, 1909. It covers the ruins of what in the early Spanish régime was doubtless an important mission. It is located upon a commanding eminence

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about 200 feet above a broad valley to the west, and from it panoramas of mountain ranges are in view in several directions. The walls of the church are from 12 to 20 feet high and 2 to 4 feet thick. Inside, the church measures 30 feet in width by 100 feet long, was located almost due east and west, and has a transept near the west end. There is to the east and north of the church the heaped up piles of rectangular stone, covering several acres and evidently all that remains of a once great Indian pueblo. A portion of these remains are within the monument, but the great majority are within a patented homestead which is believed to have been fraudulently obtained; no cultivation, because of the desert character and lack of water, and no homestead having been established. No one lives upon the tract now, and there is no evidence whatever that anyone ever did live upon it.

SITKA NATIONAL MONUMENT.

This is a small monument containing about 57 acres only, and was created March 23, 1910, for the purpose of protecting the burying ground of Russian soldiers killed at this spot in the last battle with the natives in their struggle to maintain their independence. Here also are numerous totem poles, some of great size and splendid carving, which give, by quaint and monstrous figures in relief, the Indian history of the clan to which each belongs.

RAINBOW BRIDGE NATIONAL MONUMENT.

This interesting monument was created May 30, 1910. It embraces 160 acres of land lying about 4 miles northwest of Navajo Mountain in the Navajo Indian Reservation, extreme southern Utah. In the center of this tract and for whose protection the land was reserved is, in some respects, the most remarkable natural bridge in the world. The first white man to see and describe it was W. B. Douglass, an examiner of surveys, who, after surveying out the Natural Bridges National Monument, was sent to locate a bridge which a Paiute Indian, called "Mike's boy," stated he knew of and had seen. If found worthy for a national monument, it was to be surveyed. This natural bridge spans a canyon and small stream which drains the northwestern slopes of Navajo Mountain, a lofty and well-known landmark. Among the known natural bridges of the world it is unique in that it is not only a symmetrical arch below, but presents a curved surface above, thus roughly imitating the arch of the rainbow for which it is named. Its height above the surface of the water in the creek below is 309 feet, and its span 278 feet. It is well worth a place among the national monuments created because of their scientific interest, and, like the Natural Bridges Monument with its group of three lofty and most magnificent horizontal spans, this arched bridge will some day be on some regular line of travel followed by both the student and the archæologist and the increasingly numerous seekers after recreation.

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COLORADO NATIONAL MONUMENT.

This monument was created May 24, 1911. More than four years ago the people of Mesa County, Colo., began a petition campaign to have certain tracts of land reserved as a national park. These lands embraced two striking canyons, known as Monument and Shackelton Canyons, which nature had carved out of the highly colored country rock and ornamented with magnificent and impressive columns, spires and towers in great numbers. These canyons meet within the proposed park. On request of the governor and auditor of the State of Colorado certain lands were withdrawn from all forms of entry, pending legislation to create a national park, on July 15, 1907; and on December 24, 1909, additional tracts were withdrawn on request of Senator Guggenheim, who stated that he would introduce a bill in the Senate for park purposes, which he did. Congressman E. T. Taylor also introduced a similar bill in the House, but for the general reasons already stated herein, both failed of passage. Petitions were then presented through Mr. Taylor to have the tract proclaimed a national monument. Before a monument proclamation was prepared, the General Land Office sent two of its field mineral inspectors to make a geologic and mineral examination of the lands and report, with recommendation for the reservation of the least area of land necessary to accomplish the end sought. This report was received May 1, 1911, and on May 24 the President signed the proclamation creating the Colorado National Monument, as stated above. The monument is in T. 1 N., R. 2 W., Ute meridian; T. 11 S., Rs. 101 and 102 and T. 12 S., R. 101, all west of the sixth principal meridian.

MONUMENTS UNDER THE JURISDICTION OF THE SECRETARY OF AGRICULTURE.

LASSEN PEAK AND CINDER CONE NATIONAL MONUMENTS.

These monuments were created within the Lassen Peak National Forest, Cal., May 6, 1907. They are located in Ts. 31 N., Rs. 4 and 6 E., respectively, of the Mount Diablo meridian, and contain the Lassen Peak, 1,280 acres, and Cinder Cone 5,120 acres. As illustrating the most recent volcanic activity south of Alaska, they are of great scientific interest. The eruptions from these peaks occurred not more than 200 years ago, as shown by trees killed at the time, which are still standing. Within the reserved tracts, also, are hot springs which show continued volcanic activity and may not now be entered under the mining or other laws, but are reserved for the benefit and enjoyment of all, and there are also reserved a number of small lakes of great interest, and characteristic of the region, being formed, in the case of Snag Lake, by the lava which flowed across and dammed the little valley in which the lake lies. The stumps of many trees drowned at the time the water rose are still standing therein.

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The efforts first made to reserve these geologic features were directed toward a national park, but it was found upon examination that in order to include the desirable objects it would be necessary to reserve a large tract and one which would include districts much more valuable for other purposes. The proposed park contained about 3,634 square miles. The proposition was abandoned after a careful examination had been made and the several small monuments within the district created instead.

These monuments are administered by the regular forest officers in charge of the forest in which they are located.

GILA CLIFF DWELLINGS NATIONAL MONUMENT.

This monument was created by proclamation dated November 16, 1907, and is located within the Gila National Forest, in T. 12 S., R. 14 W. of New Mexico principal meridian, New Mexico. The monument consists of a group of hot springs and cliff houses in the Mogollon Mountains, neither very large nor very important, but are located within a district in which few prehistoric ruins are found. The reserved tract contains 160 acres of land.

TONTO NATIONAL MONUMENT.

This monument was created December 19, 1907, and is located in T. 4 N., R. 12 E., Gila and Salt River meridian, Gila County, Ariz. It consists of two cliff dwellings about 2 miles south of the Tonto Reservoir of the Reclamation Service and about 5 miles southeasterly from the town of Roosevelt. The principal ruin is within the high flaring entrance to a large, shallow cavern, is three stories high, approximately 60 feet wide and 30 feet deep, and contains 14 or more rooms. The ruins are not of the first class, but they are located so close to what is fast becoming a large urban and agricultural population that their reservation as a monument was believed to be in the public interest. They are within the Tonto National Forest and centrally located within a small but rough mountainous tract of 640 acres.

GRAND CANYON NATIONAL MONUMENT.

This monument lies within the Grand Canyon National Forest in northern Arizona, is upon unsurveyed lands, and contains upward of 800,000 acres. It was created January 11, 1908, and is one of the monuments which, in spite of its great size and the difficulties in the way of giving it a thorough examination, is being visited annually by a large and increasing number of people. The railroad north from Williams on the Santa Fe to the canyon makes the monument easily accessible. A statement that it embraces the most attractive portion of the Grand Canyon of the Colorado River is all the description it needs. But there are practically no facilities for getting down into the canyon except upon the back of a burro and no possibility of traveling about to view the sublime effects of stream erosion after one gets to the bottom. However, a visit to the rim where

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at one's feet is spread out the most extraordinary and magnificent panoramas in the world is ample compensation for the time and cost. This monument should be developed and made accessible to the public. Roadways should be constructed to the bottom of the canyon and on or near the bottom, both up and down stream, and competitive hotels erected and controlled near the canyon rim, but not within the monument boundary lines. If the boundary line on the southeasterly side of the monument were moved near the rim, I believe the change would be in the public interest, for then adequate and very desirable electric railways could be given a right of way and would soon be constructed near the rim, but outside of the monument, to the great advantage of those who travel long distances to view the canyon. An electric railway running both easterly and westerly from the end of the steam railroad near the canyon's rim would from one end to the other place before the visitors an ever-changing panorama of a gorge which of all the world Arizona alone possesses.

JEWEL CAVE NATIONAL MONUMENT.

This little monument reserve was created February 7, 1908. It contains 1,200 acres of land and lies in the Black Hills National Forest, in Tps. 3 and 4 S., R. 2 E., Black Hills meridian, South Dakota. The objects sought to be preserved are two caverns known as Jewel and Jasper Caves, which were discovered by Albert and F. M. Michaud, who heard the noise of wind coming out of Jewel Cave through a hole in the ground. After enlarging the opening they located the ground as a mining claim, and held it for the jasper and manganese found in the cavern. They spent three years developing the cave and followed the main wind passage for a mile and a half and 600 or more feet vertically below the surface. The cave is evidently an old subterranean water course through the limestone. The "Jasper" is a similar wind cave and was discovered a mile and a half west of Jewel cave, and, like the latter, was located by miners as a mining claim.

In both of these caverns the wind currents blow inwards and outwards, the periods in the Jewel Cave averaging about 15 hours each way. The Michaud Bros. attempted to exploit the caves but their patronage was too small. An effort was then made by many interested persons to have a national game preserve containing 60 square miles created by Congress, but a justification for same was not apparent and so a national monument was created, the same reserving only so much of the land as was necessary to protect the caves.

WHEELER NATIONAL MONUMENT.

This monument, embracing 300 acres of land, is in T. 42 N., R. 2 E., New Mexico principal meridian, Colorado. It lies within the Cochetopa and Rio Grande National Forests and was created December 7, 1908. The objects reserved from entry are striking examples of erratic surface erosion.

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MOUNT OLYMPUS NATIONAL MONUMENT.

This large monument lies within the Olympic National Forest, Oregon, and contains 576,000 acres of land lying on the summits and high slopes of the lofty Olympic Mountains. This region is of great scientific interest because of the existence of numerous small glaciers, and because the Olympic elk, a species which has been reduced in numbers so rapidly as to carry fears of its extermination, appears to be making on these lofty summits, scarred with ever present ice, his final struggle for existence. This is their summer range and breeding ground, and all hunting or collecting is absolutely prohibited.

OREGON CAVES NATIONAL MONUMENT.

This monument lies within the Siskiyou National Forest, Oregon, and reserves 480 acres in T. 40 S., R. 6 W., Willamette meridian. These lands were withdrawn from all forms of entry August 5, 1907, on request of the Secretary of Agriculture, and were created a national monument July 12, 1909.

The Oregon Caves were discovered by Elijah Davidson in 1874, and were partially explored in 1877, when four floors or levels were opened up in part. The caves are below a limestone peak, commonly called Cave Mountain, which seems to be honeycombed with caverns of various sizes that extend for miles in the form of galleries and chambers hung with stalactites. It is believed that the caves run under and entirely through the mountain connecting with openings on the other side. Numerous streams of water meander through the several levels and larger bodies of water can be heard in pits too deep to be sounded by a 300-foot rope. Strong currents of wind race through some of the galleries. No doubt when these great caverns can be explored and made accessible and safe this monument will be among the most popular of the cave monuments created.

The Forest Service has improved the trails leading from each side of the divide to the caves, making the latter more accessible than formerly. But little work has been done within and much should be done. Vandals already have broken off and carried away many of the beautiful drip formations which abound in the caverns, and parties of explorers are changing the snow-white crystals to a dingy yellow.

DEVILS POSTPILE NATIONAL MONUMENT.

This monument embraces about 800 acres of land and was created July 6, 1911. It is located within the Sierra National Forest and within what was formerly a part of Yosemite National Park. The principal object protected by the monument is a series of fine basaltic columns, which have in part toppled over, making a large pile of prismatic log-like

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sections which, from a distance, strikingly resemble a pile of posts. This formation is deemed worthy of protection because it is the best example of columnar basalt within the United States, as far as known.

BIG HOLE BATTLEFIELD NATIONAL MONUMENT.

This monument contains 5 acres and embraces the Big Hole Battlefield in T. 2 S., R. 17 W., Beaverhead County, Mont. It is within the Big Hole National Forest.

ADMINISTRATIVE CONDITIONS.

With the single exception of the Muir Woods National Monument, of the monuments created out of public lands or out of relinquished lands, the protection afforded to reserved objects is practically confined to the restraining qualities of an official notice, warning the public of the fact of a Government reservation and of the penalties for violation of the regulations adopted for its protection. These have a sufficient restraining influence when the visitor is honest, or when the danger of discovery is so great as to make carelessness, appropriation, or vandalism dangerous. Because of a total lack of funds protective make-shifts have been adopted in some cases, but in the majority the warning notice, with its threat of prosecution, has had to do. Under these conditions, so far as the caverns, the pueblos, cliff and other ruins, and the prehistoric sepulchres are concerned, it is only a question of time when they will be secretly attacked and pillaged piecemeal, until there is nothing left to preserve; and, it seems to me, that if they are not to be developed and made accessible and their treasures uncovered, the sooner monuments which may be despoiled or destroyed are turned over to private ownership and exploitation, the better, because we will then be relieved of a responsibility which we now feel but can not make effective. And as for the monuments like the Devils Tower, the Colorado, Mukuntuweap, Pinnacles, and others, if they are not going to be accessible for study and recreation by Government aid, it were better that they be turned over to private ownership, because in the latter case they would soon be made available at a price, which would be much better than not available at all. Those who had the price would be able to see, the rest would neither gain nor lose. But no monument should be turned over to private development and exploitation under contract, agreement, lease, or otherwise. Such arrangements are not only certain of being unsatisfactory, productive of scandal, and prolific of complaint, but they would necessarily, and at once, negative the purpose of the monument act; that is, to preserve for all time and without price these extraordinary heritages. It would, I think, be unpatriotic to advocate the abandonment to private speculation of any one of them.

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PRESENT PROTECTION.

The Muir Woods National Monument is within easy reach of San Francisco, a large city with a large transient population. Owing chiefly to this fact, but also to the origin of the monument and the ease with which its chief attractions could be ruined, this monument has a real custodian, one who is paid an annual salary and who is on duty all the time. Roadways have been constructed, fire guards maintained, and visitors to the giant redwood forest controlled, to the end that no living thing within the monument, bird, beast or plant, is harmed and the danger of fire is reduced to a minimum if not a negligible quantity. This custodian was the custodian employed by the former private owner and his official appointment was an admirable thing, but he is paid out of a fund which the Comptroller of the Treasury advises is available, although intended when asked of Congress for another and very different object.

The Devils Tower should have some one in charge during the summer season to prevent fires and unauthorized grazing, and to make trails and act as guide, as well as care for such improvements as are indicated herein to be necessary in the development of the reservation. A small salary for actual service would, I think, secure a satisfactory custodian.

The extreme isolation of El Morro will render attempts to protect it adequately difficult. Since all of the inscriptions made during the nineteenth century are reported undesirable, while many are positively bad, I think, possibly, it would be well to remove them and post conspicuous warning notices that thereafter every effort would be made to arrest all offenders for similar acts of vandalism. This method of preservation of these most unique of all historical records would, of course, necessitate regular visits to the monument; and I think the early erasure of all new names, after noting them for punitive purposes, would discourage the practice.

For Montezuma Castle a resident custodian at a small salary could, I think, be easily secured, but better and more permanent means of access to the ruins are greatly needed, and vandalism in the past has made repairs necessary in some places.

The Petrified Forest has a custodian, who lives at Adamana, the railroad station nearest the monument. He was formally appointed at a nominal salary of $1 per month. I have heard no complaint of neglect of duty, but I am informally advised that his chief business is that of guide to the forest. I can see no serious objection to this under present conditions, except that his charges should be regulated by the department, and a strict observance of the regulations governing the reservation should be required of him. The great difficulty encountered here is that of requiring observance of strict regulations from an individual who is paid nothing

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for his services. To properly administer this extraordinary national monument, which is worthy both of a fostering care and such development as will make it easily accessible and at a minimnm cost to visitors, the custodian should be paid a reasonable salary, not large, but large enough to demand and require an effective guardianship in exchange. He should be equipped by the Government with means for transportation of visitors, and if an annual appropriation for the maintenance of same were denied, then a round-trip charge from the nearest railroad point, sufficient to meet the cost of maintenance only, should be maintained.

No custodian has yet been appointed for Chaco Canyon, but there should be one as soon as funds are available. No large salary would be required here, but some money will be needed to repair falling pueblos. The custodian should be on the ground to warn off unauthorized explorers who would excavate without permits, and fail, in the absence of supervision, to strengthen walls made dangerous by their labors or to restore those damaged thereby. If many of these ruins shall be found incapable of restoration, which is extremely probable, he shall keep them intact until exploited by authority and their treasures disposed of for the public good.

No custodian has been appointed for the Pinnacles, which was transferred from the Forest Service, and I think it very doubtful if one will be needed. Certainly none is needed at the present time. However, should the locality become more easily accessible and better known, development work would become necessary and the appointment of someone to administer the reserve will naturally follow.

I know of no reason why anyone should harm the Natural Bridges. No sane person would attempt such a feat, and it is certain, because of their isolation, that it will be a long time before they can be visited by any but hardy horseback riders familiar with the desert and the toll it collects. The name carver is the only vandal to be feared, and his records should be obliterated as fast as discovered.

For the Lewis and Clark Cavern a proper and effective administration is greatly needed. Few things tempt the vandal more than the beautiful stalactites which dame nature hangs in the caverns she digs far from the light and the heat of the sun. Some of these ornaments in the Lewis and Clark Cavern have been broken down and removed, but the great majority remain and should be protected. The cavern is reached by one of the great transcontinental railroads, and visitors may be plentiful soon. No opportunity should be given the curio hunters to knock down and carry away these drip formations, which are the cavern's principal charm. There should be a resident custodian at a moderate salary to develop the roads and trails, build and keep in repair stairways, and pilot parties through the cavern. To prevent access without a guide, the entrance to the cavern should be closed and kept locked, as at present, and provision for artificial lighting, without smoke, should be made.

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The old Spanish mission Tumacacori should have a custodian at a modest salary. No doubt the entryman who relinquished the ground for the monument would make a good custodian and be satisfied with a salary of $20 a month or less. The old mission church, however, should be restored as far as possible and kept in repair, and the myriad vagabond names and writings removed from its walls.

The Navajo Monument needs a custodian as soon as its final boundaries are established. Reports testify that some of the ruins have been visited and much pottery uncovered and carried away. With the reduction of this monument to three or four 160-acre tracts, as is now contemplated, there will still remain almost an unlimited virgin field for exploitation by colleges, museums, and associations armed with the necessary permits to excavate and remove treasures. In this connection I wish to state that I am of the opinion that all excavating and all restorations of ruins protected by national-monument proclamations should be done by and under the authority of the Government, and that the collections made therein should be placed primarily in the Smithsonian Institution; those which are typical and of greatest interest and importance to remain there on exhibition for the benefit of students and seekers after knowledge, and for the pleasure and enjoyment of others. I believe that a legitimate objection does not lie against the adoption of this policy, because the ratio of reserved ruins to those not protected by monuments is very small indeed.

I have been advised by those who know best, that the fruitful field for archæological research in the Southwest has in fact neither metes nor bounds.

The Mukuntuweap Monument will need a custodian at a small salary as soon as the advent of a railroad brings it within reach of the people. Roads and bridges will have to be built and kept in repair, and transportation facilities within the magnificent canyon maintained. It is in no danger now, not even from name vandals.

The Shoshone Cavern under present conditions does not seriously need a local custodian. Prior to its creation the mineral inspector found that many low-hung stalactites had been broken off and carried away, but much better facilities for reaching the cavern must be provided before many people will visit it. A stairway one hundred or more feet high, permitting access to the entrance by way of the Shoshone Canyon road, and safe trails and by-paths through the cavern itself are greatly needed.

The Gran Quivira appears to be in no danger of unauthorized exploitation and does not, I think, need a custodian at any price at the present time. These ruins are not believed to be of sufficient value as to warrant efforts at restoration on a large scale, but thorough excavations might reveal very valuable relics of the people who dwelt there long before the Spanish conquest and make restoration a very desirable policy.

The Sitka Monument is in little danger from vandalism, because it is so far away and the difficulties of transportation are so great that the principal objects preserved, the totem poles, could not be easily removed.

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The Colorado Monument needs a custodian, not so much to protect the monument from vandalism as to develop roads and trails and make all parts of the reservation easily accessible. A custodian could act as guide also. Mr. John Otto, of Fruita, Colo., who has freely expended his own time and money in making trails through the canyon and over impassable places for years, was appointed superintendent and caretaker of the monument on June 7 last at a nominal salary of $1 per month.

ADMINISTRATIVE RECOMMENDATIONS.

As far as I am advised the Forest Service has not appointed local custodians, superintendents, or caretakers for the monuments in its charge. This responsibility is assigned to the district supervisors of national forests and other field assistants, and I assume that the actual protection given by them is similar to that afforded in the Interior Department by the chiefs of field divisions and by the local land officers of the General Land Office. All of these officials, by virtue of their positions of authority, can threaten punishment for offences committed and they may make good, but what we want for most of the monuments is protection from damage, not punishment afterward. The value of the services of national monument custodians will depend upon their immediate presence and personal supervision, supplemented, of course, by that watchfulness and devotion to duty characteristic of the good public servant everywhere. We need this, but we need something more. Under existing conditions two departments are charged with jurisdiction over national monuments, and three may be. Responsibility is divided. There can be no uniformity in administration under such conditions unless there is uniformity in letting the monuments alone. The chiefs of field divisions and the local land officers have now all they can do if they efficiently discharge the regular duties imposed by law and the regulations thereunder. I assume it is the same with the officers of the Department of Agriculture. If this is not true, it were better to reduce the personnel than to attempt to require of the supernumeraries a long distance service which they are unable to perform. I believe, therefore, that not only should we have effective local custodianship, but the administration of all national monuments of whatever character or wherever located, or however secured, should be consolidated and the responsibility for their developement, protection, and preservation placed where it can be made effective.

It is possible that 28 national monuments, or that portion of them which needs development, do not form a sufficiently weighty trust to warrant a separate administrative unit to develop and administer them. If this be true, why not consolidate a little further? Create an administrative unit for the national monuments and national parks together. The method of creating these reserves is different, but after creation there is no evident difference between them. They are as like as two peas in a pod. Furthermore, with the exception of the ruins, any general plan of

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development which may be adopted for the one will be equally applicable to the needs of the other. Experience shows that there can be no effective administration for either under present methods and regulations, because the time given to them is largely stolen from that assigned to other work. As a whole they receive only incidental consideration when the public interest is great enough, and the reservations are important enough to demand a sympathetic and energetic effort directed exclusively toward solving the problems of development and administration they present.

The SECRETARY. I am sure you will appreciate all the interesting information which Mr. Bond has given us on a subject which, as stated by Mr. Bond, is very little understood.

We have another matter of administration connected with the national parks which has been mentioned to me by a number of individuals here at this conference as being in their judgment important, and we will ask Mr. Sunderland to present a paper on "Architecture and engineering, its relation to isolated Government improvements."

ARCHITECTURE AND ENGINEERING: ITS RELATION TO ISOLATED GOVERNMENT IMPROVEMENTS, BY E. M. SUNDERLAND.

Mr. Secretary and gentlemen: It is not my intention in my talk upon the subject assigned me to give a lecture upon archæology or statics, but I do wish to hang out a danger signal, or if not permitted to do this, to put up the green flag, which, as you all know, in railroading signifies caution. In the past two years and a half I have been intrusted by the Department of the Interior with several commissions for architectural and engineering work upon Government reservations. During this time I have seen many buildings and engineering works which remind me of the comment made on the mermaid, "The mermaid is too much of a fish to hug, and too much of a woman to fry." Many of the Government improvements are structurally too good to be dismantled and abandoned, but still in design are poor. Many of you are intrusted with the developing of reservations and parks which are in their infancy, I have in mind two of these reservations which I have recently visited, and upon which practically no improvements have been made. I sincerely trust that those of you who have charge of such reservations and the developing of same will give most careful consideration to the following:

SITES, CONSTRUCTION, ARCHITECTURE, SANITATION, FIRE PROTECTION, AND TEMPORARY WORK.

In selecting sites for a building, those should be selected which appeal to you from a picturesque standpoint, the site that only needs a building to complete the picture. This of course is conditional as to

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whether water supply, drainage, and approaches are obtainable. It often happens that the site most desired for a building from a picturesque standpoint becomes impractical for the reasons that water supply, sewerage, and approaches can not be economically constructed.

In the construction of buildings and engineering work stability should be the first consideration. If anything is to be sacrificed for economic reasons, do not sacrifice the construction; rather, sacrifice the architecture. I mean by this that your buildings can be well designed in massing, but the ornamentation and elaboration can be limited. The first cost of any work should not be such as to cause the overhead charges to be too great; I mean by this, your annual expense for up keep.

In the selection of the style and type of architecture the same should be governed by the location, climate, and surroundings. A building of the Mexican Mission or the Spanish Renaissance style would not be appropriate in a park of such character as Glacier National Park, nor the chalet or chateau here except in the higher altitude. In the design of a building the massing is what catches the eye. There may be handsome columns and capitals and the detail elaborate, but if the eye is not attracted to the building by its general pleasing outlines, the detail will never be appreciated, because to persons passing the completed picture is what attracts the eye.

Many of you are intrusted with large propositions, as I have stated before which are in their infancy, for instance Glacier National Park and Platt National Park. It seems to me that in parks of this character a careful study should be given to a definite layout for the entire park and the contemplated improvements. If there had been a definite scheme adopted for the Hot Springs, Ark., the many sore thumbs of architecture would not exist; the hodgepodge there is pitiful. There we have the Romanesque, Greek, Gothic, and Renaissance within one hideous grouping, and it seems to me that conditions such as this is an ample warning to those of you who have in charge the development of new propositions.

In designing buildings for my private practice, I have found that if I gave my clients plenty of heat, good plumbing, and tight roofs, that they would put up with a great deal in the way of the lack of the ornate. In this connection I wish particularly to emphasize the necessity of a well-designed and constructed sanitary layout, especially as to the ventilation, sewerage disposal, heating, and water supply.

As to temporary work, it has been my experience that where appropriations are inadequate for the improvements contemplated, those in charge will say, "We will do this work only temporarily, only for a year or two until we can get Congress to appropriate more money." This is a dangerous practice, for the work in most instances becomes a permanent fixture and is extravagant and deceiving in the end.

I have heard to-day many remarks about the natural beauties of our parks in comparison with those of Europe. American tourists returning

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from Europe not only comment upon the beauties of the landscapes but invariably are enthusiastic over the architecture and its harmony with the natural beauties of the landscapes. Here we are starting out with a new country, developing new parks, and we should be careful not to mar the natural beauties of nature with inappropriate and poorly designed architecture.

The SECRETARY. Is there any general discussion on the subject of architecture in the parks, sanitation, or the other subjects touched by Mr. Sunderland?

We will now hear from Mr. Schmeckebier on publicity. Mr. Schmeckebier is in charge of the publicity work in the Department of the Interior.

PUBLICITY IN ITS RELATION TO NATIONAL PARKS, BY L. F. SCHMECKEBIER, Clerk in Charge of Publications, Department of the Interior.

Publicity regarding the national parks may be accomplished in three ways: (1) By means of news items or specially prepared articles given to newspapers or magazines; (2) by means of handbooks giving detailed information regarding each park; (3) by means of exhibitions of photographs, lantern slides, and moving pictures. The department has already taken steps to disseminate information by each of the methods mentioned, but the active and hearty cooperation of the park superintendents is needed to get the best results.

First let us consider the newspaper field. This class of work is readily divided into special descriptive articles and news items. Descriptive articles are generallly sent out for the Sunday editions of the papers in the large cities, while the news items are given to the press associations and the newspaper correspondents. As a rule such articles will be prepared in the Washington office, but there is no reason why the field men should not contribute materially if they have the time and opportunity.

The best field for the activities of the park officials is in regard to news items, which should be forwarded to the Washington office from each park as often as possible. Now what constitutes an item of news? Too many people think that only sensational matter constitutes news. As a matter of fact much of the sensational matter is no news at all, being simply the manifestation of an active imagination. In reality everything that happens is news and the things that are undertaken in the regular work of developing a park make the very best of news items.

The entire process of development, such as trail and road work, building bridges, and the discovery of new points of interest form the foundation for numerous items of news. For instance, if you are starting to build a road or trail, that fact should be given publicity, but do not rest content merely with a statement that a road or trail has been started. The item should indicate the place held by that particular work in the general

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development of the park. You should state where the road begins, whither it leads, and what points of interest will be made more available. Perhaps the road may lead to a glacier, a grove of big trees, or a mountain from which a magnificent view may be obtained, or it may cross some stream in which the trout abound, or it may traverse some beautiful valley that offers fine opportunities for camping; it may reach to a section of the park that has been difficult of access or it may materially shorten the distance. Give the course of the road in a general way, indicating whether it is along the shore of a lake, whether it goes through forest, or whether it is in open country from which extended veiws are obtained, and if the work of construction is especially difficult give the particulars. After you have let the public know that your road is started do not abandon it for news purposes. If the work is delayed by a rock slide or a forest fire another apportunity is offered for publicity, and the completion of any unit or of the entire road gives the publicity man a chance to tell the whole story over again. What has been said with regard to the road applies to all the work of man and nature in the park, because nature will furnish you with many a unique item of news. In this park any unusual action of the springs and geysers or the discovery of new phenomena constitutes items of great interest to the public. In other parks glaciers, caves, springs, or waterfalls may be discovered or some new information regarding them may be available. Forest fires in or near the parks should be reported, with a statement of the damage done, and if the fire has not done any appreciable damage that fact should be brought out. You are not expected to present this material in shape for the press. Write the facts clear, mark it "news item," sign your name, and forward it to the Washington office.

You might ask, "What is the purpose of all this?" In the first place these parks are public institutions supported and maintained by the Government, and the people are entitled to know what is going on and what is being done. It is true a report is made each year, but the number of persons reached by the report is very limited, and they are reached only once a year; while items given out to the press reach people who do not know that there is such a publication as an annual report. Then it is only just to the superintendents who are charged with the management of these parks that the work being done should be given as much publicity as possible. The people that have been to the parks and others that know of the parks see that you are on the job and that you are getting results. Most important of all we want to get people interested in the parks because the continued development of the parks must necessarily depend on the interest of the public. We want people to see the names of the parks in the papers, to realize that there are such things as national parks, and to feel that these great national pleasure grounds are being developed for their use and benefit. To a man who

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has been to one of the parks a little item in the papers concerning it is like shaking hands with an old friend. We want to keep the good will of this man who has been to the park, to call back to him the pleasant days he has spent within its borders, and to remind him that a better park awaits him on his return.

Every year millions of dollars are spent in Europe by American tourists who have seen nothing of their own country, but at present there is a well-defined movement in this country to have our people see America first before seeing the sights of the Old World. We want to take advantage of this movement, and have our people realize that they are the owners of great pleasure grounds, which are not surpassed by anything that Europe can offer.

Thousands of people have heard of the beauties of these national wonderlands, and every time they see an item of news their desire to see the parks is stimulated and they are brought a step nearer to our gates.

I have discussed these items in some detail because men who have had no experience with publicity work do not realize what an abundance of material there is around them. I have known this for some time, but it was never brought to my attention more forcibly than during the past summer, when the publicity work for the parks was first started. Early in the summer a call was sent to the parks for news items, and the result of that call has been one item contributed by the superintendent of this park. Now, I do not mention this by way of criticism, because I realize that the publicity work is something which had not been attempted before and which perhaps did not appear of much importance. But I want to impress upon you that the publicity work is of great importance in the future of the parks, and I want you to realize that what is routine and perhaps commonplace in your regular work is novel and interesting to the public.

Now, let us consider what literature to aid the traveler should be issued by the Government. Heretofore we have issued practically nothing. As the annual report must necessarily be of an administrative character, it is of little value to a person knowing nothing of the park. Furthermore, I was surprised to find that many of the handsome and attractive booklets issued by the railroads contain little specific information. Practically all of these are issued for a special purpose and contain general descriptive matter, and the items that affect the business of the person or company issuing the publication.

Each of the superintendents of the larger parks has already been requested to submit the data for a handbook, which it is intended shall give all necessary information to a person that knows nothing about the park. It is not intended to give a great amount of detailed description, as this can be obtained easily from other sources. It is proposed, however, to give a list of all the important features in the park, a brief characteriza-

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tion of each feature, its distance from some central point, and the manner of reaching it. This will enable persons to intelligently plan a trip through the park. A list of such places in the Sequoia and General Grant National Parks was given in the annual report on those parks for 1909, and it is proposed to follow the plan of that list if no better one is suggested. The handbook will contain a brief statement of how to reach the park. This statement will be confined to the names of railroads that are immediately tributary to points near the park.

The handbook should also contain a section on the method of transportation through the parks and a list of permanent hotels or camps. This portion is regarded as of great importance in cases where there are two transportation lines in the park or where there are several systems of hotels or permanent camps. The Government will, of course, express no preference for any system of hotels, permanent camps, or transportation. The pamphlet will give the locations of hotels and camps, the addresses of managers, and all rates that are authorized and sanctioned by the department. In several of the parks the hotels are located on patented land, and there may be some question regarding the listing of such hotels. As these hotels are located within the exterior limits of the park, I am of the opinion that they should be listed in the same manner as the hotels that hold concessions, as these hotels are necessary to the people that visit the park, and none of them, I believe, compete with hotels that hold concessions.

The handbook should pay particular attention to information needed by campers. It should tell particularly at what points guides, cooks, horses, outfit, and provisions may be procured, and the approximate cost of all these items should be given if practicable. I should be glad to have expressions of opinion as to whether it is desirable to publish the names of guides, persons who have horses for hire, and dealers in campers' supplies. In publishing such a list it will be necessary to exercise strict impartiality in the selection of names, but care should be taken to include only the names of persons that are known to be trustworthy. As it is proposed to issue a new edition of the handbook each season, the department could strike from its list any guide who had been guilty of misbehavior or any dealer who made a practice of overcharging. Such a procedure would be an incentive to all persons to act fairly in the treatment of visitors.

The department should also issue small handbooks giving an account of the natural features of each park. For the Yellowstone, Crater Lake, Mount Rainier, and Yosemite parks there should be issued a small pamphlet giving their geologic history in such terms that the publication will be understood by the intelligent tourist. For this park there should be an account of the geysers, the hot springs, the fossil forests, and other phenomena of peculiar interest. For the California parks there should

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be issued a general pamphlet on the big trees. For all the parks there should be compiled lists and descriptions of the birds, game, and flowers. A lot of material for these publications is available; its publication is only a matter of the time necessary to reassemble it in proper shape. Such publications not only will add to the pleasure of the tourist, but their education value is almost incalculable.

The department has already published a list of magazine articles on the national parks and reservations, and hopes to compile a list of books and articles in books. In the handbook on each park will probably be reprinted the list of books and magazine articles on that park. These lists will be compiled at the department, as it is impossible to do this work in the field.

The last phase of publicity work that I care to discuss is the pictorial side. The department has made arrangements for assembling a collection of pictures of the scenes in the parks for exhibition in public libraries next winter. This exhibit is being assembled through the cooperation of the various railroads that are tributary to the parks. The cordial help being extended by the railroads will result in a collection of great interest and value.

The department hopes to obtain some lantern slides showing scenes in the parks, but the details of this matter have not been worked out.

The department desires to acquire as many views as possible of scenes in the parks. These pictures should be on hand so that they will be available for publicity work as well as for reference and for use before the committees of Congress.

As new opportunities for publicity are presented the department will endeavor to take advantage of them. The field I have outlined is extensive enough for the small force that is available in the Washington office. The success of the plans formulated depends on the enthusiastic cooperation of the superintendents of all the parks, and I have not the slightest doubt but that this cooperation will be forthcoming.

The SECRETARY. I can only add this to what Mr. Schmeckebier has said; that is, that his suggestions are intended for practical application. We expect to keep a check on the steps taken by the officers in charge of the parks to comply with these suggestions, and we will have something to say about the men who carry out the suggestions, and perhaps something to say about those who do not. This is intended as an invitation, not a warning or a threat.

We will now have remarks on the general question of park administration before taking up some of the more detailed matter, and would be glad to hear from Mr. R. B. Marshall, Chief Geographer of the Geological Survey, on the subject.

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PARK ADMINISTRATION, BY R. B. MARSHALL, Chief Geographer United States Geological Survey

It is an honor and a real pleasure to be present at this, the first conference of the acting superintendents of the national parks. Much good must come from such a gathering of men, all of whom are doing everything in their power for the good of their parks. I can not help but feel that Secretary Fisher's idea in calling you together is the best step toward getting first-hand information regarding each of the national parks, as well as being a definite move toward the betterment of our national playgrounds.

It was my pleasure recently to listen to Mr. Fisher in Denver, and the plain, personal way in which he talked to his audience leads me to believe that from you he wants to hear every phase of your work discussed, and that any suggestions you may have to offer may be freely given without a thought of fear or favor. We of the Geological Survey have found, even in the few months that Mr. Fisher has been our secretary, that he is always willing to listen, that he weighs facts, and when he has given his approval it means get at it at once; and I am sure his first and ever-prevailing thought is that of the people, and in this conference the administration of the national parks for the people, the whole people, is what should be the guiding principle.

I shall speak very frankly to you, giving my point of view as I see it, and I ask you to accept my brief notes in the spirit in which they are given. If I say anything regarding your park in the way of criticism please do not think that I wish in any way to reflect upon you or your administration. I believe each of you are honestly doing all you can under present conditions. It is these same conditions that I will talk about.

It has been my good fortune during some 20 years in the Geological Survey to have topographically surveyed three and visited seven of the principal national parks, and my point of view has always been, is the public, the great mass of the people, getting the greatest benefit from the parks, and, if not, how can conditions be improved to make the parks more attractive so that more people will go to them and will stay in them longer than they now do? A natural park, preserved in all its beauty and at the same time made accessible to the public for all time, is as grand a heritage as it is possible to leave to future generations, and too much thought and care can not be given to its development and preservation, at the same time providing for its fullest use by the people of to-day. In 1910 in the 11 principal parks there were only about 200,000 visitors, less than one-fourth of 1 per cent of our 90,000,000 people. There should have been 1,000,000. The question is, what can be done to increase the number of visitors over that of 1910? Naturally, we must turn to the administration of the parks for an answer. What is it?

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Let us take the Yosemite, for instance. First of all, Congress has given practically no money for the development of the park. Therefore there could be adopted no comprehensive plan of development, no definite policy could be inaugurated by the department. The result is that this wonderful park, the finest in the world, is practically in no better condition to-day than it was in 1890 when established. Many of the roads and trails are in worse condition—the same old dust is there, where there is more water than could possibly he used in sprinkling. Only one miserable hotel now, where in 1890 there were two, one of which, the Stoneman House, destroyed by fire years ago, was fairly good. The underbrush over all the park, and especially in the valley, has increased to such an extent that if a fire should once get a good headway we would lose one of the principal attractions of the park, its magnificent forest. The present shack of a hotel was only a makeshift when first built. The location is the worst imaginable. Even the Indians did not chose this site for their tepees. There are no walks or driveways over which one may travel without getting smothered in dust. There are no attactions save an unkept nature's wonderland. There are any number of people who would travel miles for the pleasure of golf, tennis, open-air concerts, skating, skeeing, sleighing, and similar attractions in the wonderful Yosemite. Such civilized attractions would add much to the physical pleasure to thousands of the people of California alone, to say nothing of the people from other States, or even the world. I believe the Secretary would be tempted to forget the affairs of state and make at least one trip a year to the Yosemite for a chance to put a ball over the bunker, El Capitan, with a Mono Indian for a caddy.

But it will take money to improve our national playgrounds and I, for one, am firmly of the opinion that the grown-up children of the nation would be willing to pay for the improvements. If they are once aroused to a full appreciation of the needs of the parks, by a well-planned national park organization, Congress will be forced to respond and authorize a few millions to be spent where the people will get the direct benefit, and, mark me, there will not be one word of criticism of Congress for any money that it allows to be spent in improvements in our national parks.

Therefore, I say, Mr. Chairman, the first step to take is to put the parks on a permanent civil service basis, with a general superintendent of national parks at the head and superintendents and assistants in each park. Have them formulate plans for your approval and start a campaign of publicity to let our people know that they possess such wonderful unimproved property. Let us have a national park magazine, for free distribution, filled with photographs and live human-interest stories. I am confident that such men as John Muir, John Burrows, Olmstead, Burnham, Chase, White, and many other of our out-door writers, would gladly contribute, making an official magazine that would do more good

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than can be estimated, in arousing the people, who want to help but don't know how to go about it.

You may say that I am a national park enthusiast. I am, but who could have lived in nature's wonderlands for 20 years and be otherwise? I know you who have lived in the national parks must feel the same sense of affection as I for nature's handiwork, and you must spread the enthusiasm. Make it more contagious. Play the game for all it is worth, until the people will come in such numbers and will have such a personal interest in the parks that there will be no need for the soldier or the ranger, or the sign "keep off the boulder."

But I am drifting, losing the trail, getting too deep in the gardens, nature's paradise.

To come back out of the woods to administration.

I fully agree with the statement in the annual report of the Secretary of the Interior for 1910, that some effort should be made to turn the tide of tourist travel from the mountains of Europe, where millions of dollars are spent annually that should be spent in our own national parks. Our parks are as beautiful in every respect as any to be found in the older countries. Their accommodations for visitors, however, are perhaps the least attractive and at the same time the most expensive to be found anywhere. It can not be expected that the tourist will go to the parks in our own country when the cost of such trips is more than that of a European trip. The railway companies should and must cooperate by reducing their transportation charges. They should give to the tourists from any point a round-trip rate equal to the present rate for the single trip. The resulting increase in travel in the long run will yield greater profit than is now derived from the small number of tourists at existing rates. The same general view should be taken by the local transportation companies, and by the hotels and camps, in the treatment of tourists after they reach the park. The present policy is to tax them all they will stand. This attitude prohibits those who most need the benefits of the parks from visiting them. Therefore the transportation companies—unintentionally perhaps—discourage rather than encourage the fullest use of the parks for the purposes for which they are created. Unless the present attitude is materially changed it is a question whether it is worth while to spend so much time and money in park improvement for the very few who can now afford the trip, especially as those few do not need the outing as much as those who are denied this great benefit solely because of the rates charged by the transportation companies. In reality, these companies are having improved at Government expense localities from which they, more than anyone else, derive profit.

We have 13 national parks, containing more than 4,000,000 acres. We should have 50, but even the 13 deserve administration by a separate bureau. The direction of the work involved will surely require a man of large experience, and he should receive liberal compensation for his services.

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There should be created a bureau of national parks, with a director in charge. He should be an engineer who has had experience in the mountains and the woods, who knows the country. He should be a man who has had actual and not merely theoretical experience with conditions in the national parks. His office in Washington need not be large; in fact, it should be a field-service bureau. There should be for each park or group of parks a civilian superintendent, who should be an engineer, or at least have a general knowledge of engineering, and rangers or guards for patrol duty, all of whom, including the director, should be appointed under civil service. These appointments should be entirely divorced from politics, and the positions should be held for indefinite periods. In that way only can first-class results be accomplished, for the officers and men should be thoroughly familiar with all conditions in the parks and such familiarity can only be acquired by years of experience and observation.

But there is a long step between the recommendation that a bureau of national parks be established and the actual creation of such a bureau by Congress, but in the meantime the above plan of administration should be put into effect so far as it can within the law, and thus start the organization, so as to provide for the public convenience in every possible way until Congress shall create the Bureau of National Parks.

And I suggest that any bill providing for the creation of a bureau of national parks shall carry all appropriations in lump sums, which shall include all salaries to be paid in connection with the administration of the parks. In grading the salaries of professional and other skilled employees under the Government cognizance should be taken so far as practicable of the value of similar services in private work. Almost without exception the salaries paid by the Government for such services are much lower than those paid in private work, many specialists receiving only one-half or one-third of the compensation they would receive outside of the Government service.

Being a topographic engineer, I am fully convinced that a topograhic map is absolutely necessary in planning any engineering development. Without it millions must be spent in preliminary work in connection with development interprises, whereas, with a topographic base map in hand, costing about $20 a square mile, or 3 cents an acre, the engineer may sit in his office and plan practically all his work without going to the field, thereby dispensing with the costly preliminary surveys. Therefore, when I began the topographic survey of the Yosemite National Park in 1893 I was impressed with the importance of having a first-class topographic map for administrative and development purposes to take the place of the crude maps accompanying the superintendent's annual report. I worked in every way I knew how to put my scheme into effect, both with the Geological Survey and the departmeat, but it took time and patience. They say all things come to him who waits—anyway, in 1909, 16 years later, with the assistance of Maj. H. C. Benson, at that time acting

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superintendent of the Yosemite National Park, the department authorized the preparation by the Geological Survey of administrative topographic maps of the Yosemite, Sequoia, General Grant, and Platt National Parks; in 1910, of the Yellowstone, Glacier, and Crater Lake National Parks, and during the season of 1910–11 field surveys were begun of the Mesa Verde and Mount Rainier National Parks, which it is expected will be completed during the present field season. Therefore, by 1912 my dream of 1893 will have come true and there will be available first-class administrative topographic maps of nine of the largest national parks. I have here copies of six of these administrative maps for your inspection.

The Wind Cave and Hot Springs maps can be prepared whenever the department desires them from data already in the Geological Survey, leaving only Sullys Hill and Casa Grande ruin to be surveyed.

I hope these maps will prove to be worth to you for administrative purposes all that I have claimed for them. I would also like to have a folded edition in the hands of each tourist visiting the parks. Being now directly responsible for the accuracy and appearance of the topographic maps of the Geological Survey, I shall welcome any criticism from any and all of you, that the maps may be made of more service to the department and to you in your work, as well as to the public, which I hope will be constant users of them.

I believe that all work of improvement and construction in the national parks should be done directly by the Department of the Interior and that all funds created by Congress for that purpose should be placed directly under the control of the Secretary of the Interior, to be expended by him, the work not being delegated to the Chief of Engineers, as has been the practice in the past in the improvement of national parks. There should be no division of authority and responsibility in the improvement and administration of the parks, such as necessarily results when two coordinate branches of the Government have equal authority over two pieces of work which, although apparently independent of each other, are as a matter of fact parts of one project, between which no distinct line can be drawn.

The manner in which the work of improvement is carried out must, of necessity, depend largely on the appropriations made by Congress for that purpose and the revenue derived from concessions granted within the parks. Experience has shown that it is impracticable to limit to a specified sum the expenditure in any one area or on any particular piece of work. No single piece of work included as an item in general estimates for improvement of a national park could be completed within its estimated cost if done independently of other work. The preliminary expenditures for equipment, etc., would more than equal the estimated cost of the single piece of work. Only if Congress at the outset provides

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a certain appropriation for an entire project, to be made available annually in lump sums, can the best results be attained. This is the plan under which in 1900 was adopted the project for the recently completed system of roads and trails in the Yellowstone National Park, and I wish to quote from the 1901 report of Capt. H. M. Chittenden (Brig. Gen., United States Army, retired), of the Corps of Engineers, who was in charge of that work for several years:

> The sum appropriated (act of Mar. 3, 1901) largely exceeded any former appropriation. It was made immediately available. It was in a lump sum, thus giving more latitude in using it where most needed. It designated what proportion should be applied to works of improvement and what to administration and protection. The advantage of these liberal provisions is already apparent in the season's operations. More work has been accomplished at this date (July 11) than is ordinarily by the 1st of September. *The appropriation will yield 20 per cent larger results, dollar for dollar,* than has been possible under any previous appropriation.[1]

Again, I quote from Capt. Chittenden's report for 1903:

> The money has been applied to the work most needed, and the quality of the work has depended upon the funds at the time available. The whole system is being progressively developed, and every new contribution made by Congress is applied where most needed, and all tends toward the final results.[2]

The protection of the enormous timber resources of the national parks from destruction by fire is one of the most important considerations in their administration and maintenance. As most of the parks are surrounded by or border on national forests, there should be the fullest cooperation in the administration of the two. Most of the acts creating the parks provide that the Secretary of the Interior "shall sell and permit the removal of such matured or dead or down timber as he may deem necessary or advisable for the protection or improvement of the park." Steps should be taken toward accomplishing this cleaning up at the earliest practicable date. All underbrush and rubbish should be properly burned off. It is recognized that the humus found on the ground in all forests is in reality the fertilizer which is necessary to the life of the trees, and that if this humus is entirely destroyed the trees will suffer; but the large amount usually found in uncared-for forests is wholly unnecessary and when it remains undisturbed the danger from fire is greatly increased. If this humus is burned off at the proper season—early spring or late fall—there will still remain sufficient for the nourishment of the trees.

A complete and adequate fire-protection service should be established in each of the parks. The numerous high peaks, by reason of their location in all parts of the parks, are admirably adapted to serve as fire-signal stations. The parks should be divided into fire districts radiating from the signal stations, and a network of firebreaks should be cut over the en-

[1] Annual Report, Chief of Engineers, 1901, pt. 5, pp. 3785-3786.
[2] Annual Report, Chief of Engineers, 1903, pt. 4, p. 2461.

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tire area, sufficiently close to control all possible fires. An adequate telephone system should be constructed, connecting the administrative headquarters with each of the fire-signal stations. A competent ranger or guard should be placed in charge of each station during the dry or fire season, and it should be his duty to keep constant watch for fires in the hills and valleys below his station. Immediately on discovering a fire in his district or the surrounding country he should notify administrative headquarters by telephone, and guards should then be dispatched at once to the danger point.

The points for fire-signal stations should be selected, made accessible, and the service inaugurated at the earliest practicable date. The station buildings themselves may be of very simple character, but should be substantial and permanent. Preferably they should be built of stone, with window on each side and circular tower on top for look-out in all directions. Each station should be equipped for living purposes, and be provided with a good observation instrument and maps, so that the observer can locate a fire and report at once to the superintendent.

My belief is that many thousand head of cattle could be pastured each season in the various national parks with no resulting damage. If given 5-year leases the cattlemen would be glad to pay a reasonable fee per head a month, which would create a large fund to be used in general improvement of the parks. The cattle would keep the trails open and eat the underbrush. The interest of the cattlemen in conserving the feed for their cattle would induce them to become an organized fire-fighting ally. In addition, such a policy would remove much of the present attitude of criticism against the Government for withdrawing these lands from use of any kind save as pleasure grounds.

A uniform system of providing hotel accommodations should be adopted for all of the national parks. At the present time such accommodations, as a general rule, are entirely inadequate. Concessions should be granted for a period of years sufficiently long to warrant and encourage the construction of first-class hotels. All plans for hotels should receive the approval of a board of architects, which should also approve the selection of sites, in order that the hotels may be properly located and so constructed as to meet prevailing climatic conditions as well as to be architecturally attractive and in harmony with the sorrounding country. Recently I heard that a concession was to be granted for a hotel in the Giant Forest, but the location proposed is the worst that could be selected. It is in the heavy timber, where no sun will reach it; it is damp and not surrounded by attractive scenery, whereas if a site were selected on the bluff, 3,000 feet above Kaweah River near Moro Rock, there would be constant sunshine, a wonderful stretch of magnificient scenery in plain view for 180°, with Sequoias all around. Such mistakes in the selection of sites would not be made if all plans were subject to approval by a board

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of architects. All hotels and camps in one park should be either under one management or so controlled that the public will not be subjected to annoyances by runners or stage drivers, bewildering the tourist by urging him to go to this or that camp or hotel.

In calling attention to a few specific conditions, I have hoped to make them appear to you in their real light, as I see them—conditions which I believe would not have been allowed to exist for one minute if there had been some one person charged with the duty of looking out for all the parks. Therefore, I can not too strongly urge, Mr. Chairman, the establishment at once of an organization of some kind whose sole duty it shall be to administer the national parks.

The Sequoia National Park should be enlarged, as outlined in Senate bill No. 10895, introduced at the last session of Congress by Senator Flint, of California.

The boundary line, as shown on the map which I have here, and as defined by Senator Flint, is a natural one, and right here I want to urge in the strongest possible way that all park boundaries be made to conform to natural lines wherever practicable.

I believe that in the improvement of the Glacier National Park, which is in all of its virgin beauty and affords a splendid opportunity for the Government to carry out an ideal plan of improvement profiting by its abundant experience in the management of the other national parks, the cooperation of the Great Northern Railway should be encouraged to the greatest possible extent. Applying this more broadly, I believe that the fullest cooperation should be encouraged of any railroad reaching a national park. The development of the park will enhance the general attractiveness of the entire region and will give a distinct impetus to travel. Undoubtedly, therefore, the railroad company would be desirous of aiding in the work in every way possible, in order that it may satisfy the large tourist business that will surely come as soon as accommodations can be established. I believe that the Government, in order to confer upon its people full and early enjoyment of the privileges of the Glacier National Park may with propriety accept the assistance of the Great Northern Railway. It seems to me that this would be a good business principle for the department to establish in behalf of the people.

I want to say just a word about the Mesa Verde National Park, which I I visited during the past July. There is nothing in this park to make it of national importance save the cliff dwellings. There is no opportunity for camping; the scenery is common to many of the Western States and needs no protection. The inaccessibility of the park, the long distance, and the miserable railroad accommodations make it, I think, out of the question to make this park popular to any degree in comparison with the other parks. The road which is under construction, particularly along the north face of the cliff, although of scenic value, is in the worst place possible to main-

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tain it. It will, I estimate, require $50,000 to put these few miles in good order, and because of the slide rock and other material through which it passes that $10,000 a year will be none too much to keep it in safe condition.

There is practically no water within the park, and until water can be found the department is taking a big chance of wasting public money in building roads and accommodations where they may not be used by the public on account of lack of water. The nearest water supply in any reasonable quantity is 40 miles distant and 3,000 feet below the top of the mesa.

The present boundary of this park must be changed on the north and east if the mesa ruin is to be entirely within the boundary, and on the south if that for which the park was created is to be protected—that is, the cliff dwellings. The present boundary does not include a single ruin. My recommendation would be to create a national monument of small acreage around the ruins—say each canyon containing the cliff houses, and have the area around all the canyons converted into a national forest.

The question of whether or not troops should be stationed in the parks and monuments is a mooted one. The present policy of stationing Federal troops in the parks for brief periods is shortsighted, and the system is entirely inadequate for proper protection. The tendency appears to have been to continue and even to extend this policy. It is questionable whether troops should be stationed in the parks at all; but if they are they should be detailed for guard duty only and for periods of at least five years, and then not all changed at the same time. It requires at least one year of experience for a man to become at all familiar with the conditions in any one of the national parks. In this connection I wish to quote from the annual report for 1904 of Capt. George F. Hamilton, United States Army, acting superintendent of the Sequoia and General Grant National Parks:

Administration and guarding of the parks.—I believe the present system of administration and guarding of the parks to be entirely wrong and quite unsatisfactory in its workings. The parks should be entirely under civil control, with a permanent superintendent and 6 to 10 rangers carefully selected, one being a head ranger. Soldiers should not be sent here. The system which I propose would give a more fixed policy of administration and would secure the continual presence of a superintendent. The parks would be much better and more efficiently patrolled and protected by this ranger force than by soldiers. During the short time that soldiers are on duty here the officers and men can not become familiar with the geography of the park and the location of trails. They are, under the present system, placed in detachments at important points about the park and patrol from these stations as far and as often as practicable, but can not patrol and investigate nearly so well and efficiently as rangers would. It takes some time for soldiers to become familiar with their duties here. They can not be expected to take the interest in the park and in the enforcement of all the regulations which rangers would take. The soldiers sent here are not for the time being available for military duties; they have no drill; they are performing the duties of civil guards. The entire expense of maintaining two troops of cavalry here,

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including the cost of supplying them, is properly chargeable to the guarding of the parks and is borne by the War Department, whereas it should be borne by the Department of the Interior.

* * * * * * *

Altogether the present system of guarding the park entails hard work upon officers and men, great expense to the Government, and is very unsatisfactory in its results.

The following statement is taken from the Chittenden report on the Yosemite National Park:[1]

Moreover, at present the authority of the military is intermittent. They arrive in the spring and leave in the fall, before the troops have learned their duties and become sufficiently familiar with the country to guard it effectually. The next spring new troops are sent, and these in turn are relieved before they can obtain a satisfactory knowledge of the country.

I also wish to quote from the report for 1907 of Gen. S. B. M. Young, United States Army, retired, superintendent of the Yellowstone National Park:

The enlisted men of the Army are not selected with special reference to the duties to be performed in police patrolling, guarding, and maintaining the natural curiosities and interesting "formations" from injury by the curious, the thoughtless, and the careless people who compose a large percentage of the annual visitors in the park, and in protecting against the killing or frightening of the game and against forest fires. It is quite obvious that any man assigned to duty in any capacity in the park should possess special qualifications for the proper discharge of that duty, and he should be by natural inclination interested in the park and its purposes. In addition, every man should be an experienced woodman, a speedy traveler on skees, an expert trailer, a good packer, who, with his horse and pack animal could carry supplies to subsist himself for a month alone in the mountains and forests, and besides he should be of a cool temperament, fearless, and independent character, and handy with his rifle and pistol to enable him to find and overcome the wily trapper and the ugly large-game head and teeth hunter. He should be well informed in the history of the park and thoroughly cognizant with all the curiosities and points of interest therein; he should also be qualified to pass a reasonable examination in zoology and ornithology. A visiting tourist should always be favored by an intelligent and courteous answer on any subject pertaining to the park from any guard interrogated. Inattention or discourtesy should subject the guard to proper discipline or dismissal from the park, when, in the judgment of the superintendent the discipline of the park service would thereby be promoted. Divided responsibility and accountability as to police control and management seldom produce the best results, and should no longer obtain in the Yellowstone Park. Under existing conditions the superintendent is answerable to the Secretary of the Interior, while at the same time the troops acting as park guard are held to accountability and discipline as is contemplated and provided for in the United States Army.

The pay of enlisted men in the Army is too meager to attract capable men who can fill these requirements, and the duties are too onerous for the remuneration. It requires a year for new troops arriving in the park to become familiar with the duties required of them, and during that year many of the enlistments expire and the vacancies are filled by raw recruits. At the expiration of three years, or at most four years, these troops are ordered elsewhere and new troops take their place. The proper and necessary military instruction and training can not be carried on, and thorough disci-

[1] Senate Document No. 34, Fifty-eighth Congress, third session, page 18.

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pline can not be maintained. The troopers can not be examined and made subject to such tests of efficiency as good service in the park requires.

Civil guards, on the contrary, would be selected by examination with reference to their special fitness, their interest in the work, and their capacity to perform it; they would at the same time be subject to appropriate tests for efficient park service and subject to dismissal on failure to meet such tests. By continuous service efficient civil guards would soon become thoroughly familiar with the park, its topography, roads, byroads, pack trails, game trails, game habitats of winter and summer, and likewise with the haunts and methods of the poachers who are constantly seeking profit by invading the park to shoot game for heads and teeth and to trap for furs. The troops assigned from time to time for guard duty in the park can scarcely all become familiar with its topography and trails ere a just regard for the proper maintenance of organization and discipline and a fair division of duties, foreign and domestic, require their withdrawal. And so continuity of service can not be had from the Army except at intolerable expense to Army organization and discipline.

Men whose continued employment is guaranteed during good behavior and efficient work would render the task of developing as near as possible a perfect system of protection and control reasonably easy, and the service would be more efficient and very much less expensive to the Government.

The policy of harassing the persons who have private holdings within the national parks in taking their stock to and from their patented lands is shortsighted and unwise. Let us remember, gentlemen, that these claims were taken up before the parks were established, the range was open and had been for all time before, and practically every person who took up a claim felt assured from past experience that he would justly be entitled to a certain range. Otherwise, his 160-acre mountain meadow would be of no value at all, and now to fence it will cost more than the feed is worth. It does not make any difference if the land has changed hands—the general principle remains the same. As an example of the restrictions placed upon the owners of private lands within some of the parks, take the following extract from the written authority of one of the park superintendents to a landowner within the reservation to take his stock to his lands and graze it.

You are required before taking any stock to such lands to present for file in this office satisfactory evidence of title thereto and have the metes and bounds thereof plainly marked and lands fenced. When these conditions are fully complied with, you will be granted a permit to carry your stock onto the lands under military escort, which will meet you at the park boundary upon due notification to this office of the precise date and place. Similar notification must be made with request for permission to carry your stock out of the park. You will be held responsible that all your stock is kept within the bounds of the lands controlled by you, and you are hereby notified that all stock found outside the bounds will be driven out of the park and not be permitted to return.

Conditions of this character amount practically to a prohibition.[1]

All private holdings within the national parks should be eliminated by purchase as soon as possible, but in the meantime the private rights should be given every consideration within the requirements of the law.

[1] Chittenden Report on Yosemite, Senate Document 34, Fifty-eighth Congress, third session, page 6.

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I believe the public is generally willing to obey the laws, but if the strictest interpretation of the law is always to be enforced, with no allowance for years of custom or no appreciation of any other than the administrative point of view, it will surely create enmity, and the people so affected and their friends will antagonize the administration to the point of constant irritation. I think there can be no better policy pursued than to reason with the settlers, be one of them, so to speak, let their friends be your friends, encourage them to appreciate the value of the parks and to be glad to have their homes near the boundary, as is always the case in cities, where homes are more valuable if abutting on a park. There has always been a noticeable effect in the betterment of conditions generally when a park superintendent has appreciated the public's point of view in contrast to one who has literally interpreted the law.

Personally, I would much prefer to allow a few cattle to stray into a park or to have a few trees cut inside the boundary line, rather than to have the settlers damning the administration and the parks because of these restrictions.

We all make mistakes, and we invariably think the other fellow's point of view is worse than ours. Let us be charitable and remember always that we are working for these same people, they are paying our expenses and it is the common people that need protection and assistance far more than the few with whom one seldom comes in contact. The rich can take care of themselves—the average man needs all the assistance we can give him. One can not rise to success or achieve greatness and hold it by tramping underfoot his fellow beings; but, by being generous, kind, considerate for the good of all, anyone, and especially the Government, may rule indefinitely, and this, from my point of view, should be the ruling thought in any policy inaugurated by the department.

The SECRETARY. It occurs to me that there may be some things in Mr. Marshall's paper on which divergence of view may exist, and we will be glad to have any discussion of it. I am sorry Mr. Marshall failed to get his expected "rise" out of Mr. McFarland because of his suggestions as to the utilization of the resources of the parks.

Mr. MCFARLAND. I see no objection to what Mr. Marshall has said as to using the mature timber and permitting grazing. They are matters of administration which can be worked out; the whole subject is being thrashed out here in the best possible manner. Any legitimate and proper usage of the advantages and resources of the parks and monuments is bound to be beneficial. All that is advanced by this conference is sure to be useful, whatever may be the means or under whatever department the work may be done, in making the parks serve in the best possible way the purposes for which they were created.

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The SECRETARY. Mr. Sunderland, is it your idea that before any improvement work is done the scheme for the whole should be definitely laid out?

Mr. SUNDERLAND. There should be a definite scheme for the development of the entire park and it should be carried out as money becomes available.

The SECRETARY. Should not those receiving concessions be subject to that scheme?

Mr. SUNDERLAND. They necessarily would be.

Maj. FORSYTH. Mr. Secretary, there are two points in Mr. Marshall's paper on which I would like to say a few words. I thought at first I would wait until my paper was read, but perhaps it would be best to touch upon them now. The question of cattle in the parks is the most vexatious one with which we have to deal. The Chittenden report from which Mr. Marshall read is six years old. Mr. Marshall did not consider one point of view. It is that of the people who are going to clamor against cattle wandering over the best meadow lands in Yosemite. From three to six or eight hundred people camp in Yosemite Park, using their own transportation, pack and saddle animals and occasionally a wagon, and they depend entirely for forage of their stock on the little meadows that would be destroyed by grazing cattle in the park. He did not mention that point in connection with the grazing of cattle. Another thing which struck me was that he assumed that the park superintendent had authority to exercise his discretion about the cattle question. The superintendent must obey orders. The regulations prohibit cattle roaming in the parks and the superintendent keeps them out. That is all I wanted to say.

Mr. MARSHALL. I am very glad to have my good friend, Maj. Forsyth, call me to time. I did not mean that we should let the cattle go through the park and destroy the pasture, because I want to go through the park again myself. It would be a very easy matter to segregate certain areas and have the cattle kept in certain stations. When it comes to the superintendents carrying out the orders of the department, I venture the opinion that no one carries them out any better than does Maj. Forsyth.

The SECRETARY. Would you suggest that these areas be fenced?

Mr. MARSHALL. I think it would be a good policy to do so. I think it would be better to fence the meadows.

The SECRETARY. I have not been to Yosemite and can not express an opinion as to that park. Would you suggest that we permit pasturage of cattle here in Yellowstone?

Mr. MARSHALL. I do not think the cattle would hurt anything. There are a number of bears here though, and they might hurt the cattle.

The SECRETARY. The two would certainly conflict.

Mr. MARSHALL. The men who own the cattle would look out for that part of it.

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The SECRETARY. I think it would be rather expensive and unprofitable to have to look after the cattle in that way. Do you think the rental which they could afford to pay would make it worth while to fence in certain portions here? Would not that interfere with the campers?

Mr. MARSHALL. The campers go to certain areas.

The SECRETARY. But many of the people who camp do not follow the ordinary paths.

Mr. MARSHALL. I think you will find that the area they cover distinct from the regular circuit is very small.

Mr. SUNDERLAND. I have been out in Oklahoma on a forest reservation where the cattle roam at large—at the Fort Sill Reservation. I have heard of one case where a calf was carried off. I have seen bear, but the animals which do damage to the small stock are the coyote and timber wolf. Fifty cents a head is paid for them. I was out one day and what worried me most was the masculine gender of cattle. I judged them to be masculine from their actions. There are thousands of cattle there.

The SECRETARY. We have one large reservation quite different from the others—Hot Springs of Arkansas. That reservation is more of a health resort. There has recently been constructed on that reservation some bath houses and the question of the administration of those bath houses has been taken up, especially from a sanitary point of view and we have asked Mr. W. G. Maurice, of Hot Springs, to present a paper on that.

MR. WM. T. S. CURTIS. Mr. Maurice is not present and with your permission I will read his paper.

BATHHOUSES ON THE HOT SPRINGS, ARK., RESERVATION: THEIR PROBLEMS FROM THE STANDPOINT OF PRACTICAL ADMINISTRATION, BY W. G. MAURICE.

In order that you may fully understand the cause of many of the problems that confront us, I must ask you to go back with me to the early days when the Interior Department first assumed control of these great hot springs.

Since boyhood I have been directly connected with the bathhouse interests and have seen the bathhouse advance from the wooden shack, equipped with wooden tubs, to which the water was conducted in wooden troughs laid on top of the ground, to the palatial houses that are now in process of construction.

Charles E. Maurice, my father, was one of the original lessees at the time the commissioners made the Hot Springs Mountain a permanent reservation. For many years there was very little improvement or change in the bathhouses.

The first house of any consequence was built by Fordyce & Maurice and was christened "Maurice's Palace." It was situated on Central Avenue, opposite the present Bathhouse Row. This was a very primi-

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tive affair, yet in those days was considered all that its name signified—a palace.

When the order was issued by the department that all bathhouses should be upon the permanent reservation, and that the waters should not be piped therefrom, this house was abandoned as a bathhouse, and the same firm built the present palace, which was at that time considered a very complete plant. Later, in 1879, the Ozark was built, and as the patronage to the resort increased other houses followed, but no attention was paid to sanitation and all hygienic appointments were unknown.

The department paid very little attention to the hot springs, and the superintendents of the reservation paid less up until within the last 10 years.

Drumming for doctors, bathhouses and hotels flourished unmolested by the department or the city of Hot Springs. This traffic in human ills was carried to such an extent that it kept many visitors from our resort. I have personally known many cases where drummers received $2 a head from the bathhouse and $1 from the negro attendant, for their "fruit," as they termed the visitors. This, in some cases, was 50 per cent of the money received by the bathhouses for the 21 baths.

Many houses were forced to do this in order to get any business at all. There were also many doctors who had to be taken care of financially by the bathhouses, and all hotel and boarding houses expected free baths for their familes and employees.

Spasmodic efforts were made to suppress this traffic by the different superintendents, but with no assistance from the city officials, nothing was accomplished. This condition was deplorable. A lessee with thousands of dollars invested in a bathhouse was dominated by a drummer who did not even pay a poll tax. It was almost an impossibility to build up a legitimate business, and many lessees were forced to pay the drummer in order to make a living.

To these conditions was due, to a great extent, the poor equipment and services furnished by the bathhouses. There was no competition upon legitimate lines and no incentive to give proper care or attention to the invalid; the payment to the drummer was deemed sufficient.

The department was not entirely blameless for such deplorable conditions, because the leases were not just or equitable, inasmuch as they contained the "One year cancellation clause," which placed the lessee in the position of a tenant at the will and mercy of the department. On this account the lessees would only expend what was absolutely necessary to keep their houses together.

The department later issued leases to hotels off the reservation. In consequence all hotels of the first class, and many of the second class enjoy this great privilege of using the hot waters. This placed the reservation bathhouses in a position where they can only expect the patron-

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age of the cheaper hotels, rooming and boarding houses. This class naturally seek the cheaper houses on the reservation. Instead of this condition, the reservation should be the main attraction for all visitors to Hot Springs, and should rival the beauties of the great European "spas."

Nature has been very lavish in her gifts to Hot Springs. The greatest and most wonderful healing waters in the world are there, combined with beautiful scenery and a delightful climate, yet the reservation, the show place of the world, which should be the mecca for the elite, is patronized only by the cheaper element of our visitors.

So you see the department as well as the lessee is to blame for the condition that existed until recently.

To offset the very great advantage enjoyed by the hotel bathhouses, we must offer to the visitor bathhouse accommodations superior to the hotels with comforts and conveniences. We must give that which will appeal to the better class, with a view of putting our beautiful reservation upon a higher and better plane; with a view of making it what it should be—the most beautiful in the world.

Upon the appointment of Mr. Harry Myers as superintendent of the Hot Springs Reservation a change for the better was soon noticed. He at once commenced a systematic fight against the drumming evil and waged a relentless war upon the drummers, with the result that at the present time there is little, if any, bathhouse drumming being done.

Following close upon the appointment of Mr. Myers came that of Maj. Harry M. Hallock as medical director. I am sure that his heart grew faint when he made his first inspection and realized all too well the material he had to work with.

Gentlemen, there was not a bathhouse in the city that made any pretensions to sanitation or ventilation.

The equipment in many of them was old and out of date. The attendants for the most part were ignorant, uneducated and, naturally, unclean. He has since his appointment accomplished a great deal of good in bringing order out of chaos and realizing an almost perfect state of affairs.

Many new rules have been issued for the betterment of the service and the improvement of the sanitary conditions of the houses.

A little over a year ago we were visited by Mr. Clement S. Ucker, chief clerk of the Interior Department. I believe he saw at once the great possibilities of this resort. During my conversation with him he delighted and encouraged me when he spoke of "A Greater Hot Springs," and of his ideas of greatly improving conditions at the Springs, and urged the earnest cooperation of all the lessees in the policy of the department. He predicted that we would have bathhouses that would rival those of the Old World. I told him then, as I have just told you, the obstacles in our way. Those obstacles were removed, and to-day one can see the result of his visit.

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Two palatial bathhouses, at a cost of over $200,000, are now under construction. In beauty and equipment they will surpass those of Europe. Another house is being rebuilt and remodeled at a cost of over $40,000, and next season the department will be able to point with pride to, and be justly proud of, its bathhouses. Next year, too, will see others just as magnificent erected. With the new and beautiful fountains and spring pavilions on the reservation, the department can point with pride to its own resort.

I feel that we have just started on the upgrade. Since the department has realized that the United States Government, of which it is such an important factor, has the most wonderful health resort in the world, and with broad-minded and progressive men in the department to help us develop it, the officials may expect in the future the most hearty cooperation from all the bathhouse lessees, as well as the strict observance of all rules for the betterment of the service and improved condition of our houses.

When I allow myself to ponder over what Hot Springs should be, my enthusiasm, ambition, and love for the resort starts me "day dreaming," and in fancy I picture a beautiful city under Federal control. This city of my dreams has everywhere that vital requisite—clean streets. It is a sanitary resort in every sense of the word. Its parks are part of the natural beauty of the city itself and a delight to both residents and visitors. I see Hot Springs, Ark., so improved that its citizens can, to the thousands who go to Europe each year, shout from the house tops: "See America first. Come to us. Visit Hot Springs. We have the best."

And, gentlemen, we can say this now in reference to our bathhouses, but are still lacking in civic improvement, and, much as I regret to admit it, I am afraid that it will be ever thus under our present system of city government.

Like so many cities of its kind, Hot Springs has been torn asunder, patched up and rent and "doctored" again by the prolonged war of disgruntled and dissatisfied factions in the past. Though it may not be necessary to open for your inspection the leaves of its history of years gone by, in order that you may fully understand some of the obstacles that have prevented the city's advancement, a reference to that contention is not foreign to my subject. Individuals seemed to strive for their own aggrandizement, regardless of their actions where the city proper was concerned. God gave to its people wonderful opportunities and set the seal of the Infinite on our picturesque resort that nestles so snugly in the very lap of the historic Ozarks when He caused to burst forth from the dark and unexplored caverns of the earth those hot and healing waters, the fame of which is known wherever the germ of disease is found. Commercialism, however, in the past o'ershadowed a proper appreciation of that gift, until its citizenship realized that it must first cleanse itself before it could hope to give confidence to the world that treatment in Hot Springs was all that God intended it should be.

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I believe that an entirely new system of bathing should be introduced, following as closely as possible the system in vogue in Carlsbad, Germany.

This new system will do away entirely with the objectionable helper and the constant "tipping" of two or three persons in order to get the needed service. It gives to each attendant a stated task. To each and every bather is given a specified hour for his or her bath. I will introduce this new system, and if it is successful—and I see no reason why it should not be so in Hot Springs as well as in other resorts—I hope to see it adopted by the department.

And now, gentlemen, in closing I will also suggest the following:

(1) A more simple system of reports to the superintendent, if possible, as at present it necessitates an extra clerk to keep them.

(2) A rule requiring the manager or bath superintendent to have regular inspection of the bathhouse and help at stated hours twice each day. (The medical director could inspect each house at inspection hours, which would assist him very materially.)

(3) A rule discontinuing the use of germ-bearing rugs, carpets, curtains, etc., and to discontinue the use of all wooden furniture in bath departments, substituting for all such enameled steel.

(4) A rule that all towels, robes, sheets, etc., furnished by the bather must be of a white material.

(5) That rule No. 6 be changed to read that all persons be required to have an attendant, instead of reading "It shall be optional with the bather whether he employs an attendant or not." The rule in its present condition works a great hardship upon the bathhouses. The attendants are not paid by the houses, but by the visitors, and they are expected to fix the bath, clean the tub and room after the bather is finished, and the regular patrons are discommoded. The rates are graded so that a person can get a bath as cheap as 35 cents, including attendant, towels, etc.

I would be lacking in appreciation if I permitted these remarks to be concluded without some statement from me as to the honor and pleasure I feel in being requested to speak on this subject, and I rely upon you as coworkers, and your generosity, to give me credit for being both proud and delighted to be here. I can not but express my enthusiasm over this meeting, and feel that the department has inaugurated a policy in bringing together for consultation the men to whom its treasures in wonderlands have been intrusted, something that will redound to its great good in the future; something that will make its citizens in every State, when the "wanderlust" possesses them, realize that the Old World has no treasures more priceless than those over which floats the "Stars and Stripes;" that there are no wonders across the seas but what can be duplicated and excelled in many places right here within the broad domains of their own great and glorious country.

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REMARKS BY MR. WILLIAM T. S. CURTIS.

Mr. Secretary and gentlemen of the conference: Representing, as I do as counsel, the various bathhouse lessees upon the permanent reservation at Hot Springs, Ark., and the Arlington Hotel, which is also situated upon said reservation, I desire to add a few suggestions to the clear and able presentation of the various features and conditions of Hot Springs submitted by the superintendent, Mr. Myers, and the medical director, Maj. Hallock, and that submitted by Mr. William G. Maurice, of the Maurice Bath Co., in his paper, which, at his request, I have just had the pleasure of reading.

One feature of the discussion upon which I desire to lay particular stress is that relating to the proposed establishment in your department of a bureau of parks and reservations, to be under the immediate charge at Washington of a bureau chief familiar with these reservation interests, who would be able, by his undivided consideration, to give proper and personal attention to the multitude of questions which daily arise, and which will yearly increase, especially when the features of our wonderful resources and the beauties of our parks and reservations and the healing efficacy of the waters of Hot Springs are brought more prominently to the public attention, which they undoubtedly will be as the outcome of this conference which we are now holding.

Such a bureau if created would have under its control the many details of administration, subject, of course, to the supervision of the Secretary of the Interior, and would relieve to a large extent your already overburdened immediate office.

Listening as I have to the proceedings of this conference and to the remarks and suggestions that have been made by the representatives of the great transportation companies and by those connected with and so well informed as to the conditions in our parks and reservations, I am impressed with the idea that the business attending all of these many public interests is fully entitled to the dignity of recognition by the creation of a separate bureau in your department on the same lines as that which has been given to the subjects of mining, education, public lands, and other kindred subjects, each of which, as we know, has a bureau of its own.

Now, speaking of Hot Springs, Ark., you have heard what has been said and recommended by the other gentlemen who have preceded me on this interesting subject, and it is exceedingly difficult for me to add anything of interest thereto, but I do venture to hope that as the outcome of this conference and the publication of the proceedings and the publicity which will be given to it by your department and the press the general public will be better advised as to the wonders of our land, the marvelous scenic beauties such as are shown in this beautiful park, with its unsurpassed falls, canyon, and geysers, and in the Glacier Park, Mont., whose moun-

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tain lakes, forests, glaciers, and crags are unsurpassed, the Yosemite, Mount Rainier, and others, and with the further fact that at Hot Springs, Ark., within easy access to all parts of our land, are springs and waters unsurpassed by those in this or any other land, and that it is useless and absolutely unnecessary to cross the sea in order to seek restoration to health.

Twenty years ago the conditions at Hot Springs in the matter of transportation were somewhat inferior and difficult, and the bathhouse and hotel accommodations in many cases not of the best; and all these facts, taken in connection with the old system of drumming, which has now, I am glad to say, been abolished, had the effect of diverting many of those seeking health to foreign resorts, such as Carlsbad, Weisbaden, etc., but now these conditions have entirely changed, and, Mr. Secretary, if you would only go to Hot Springs, which I hope you will do at a very early date, in order that you may see for yourself and be cognizant with conditions, I am sure you will find that the springs rival, if not excel, those of any health resort abroad.

The Arlington Hotel, which I have the honor to represent as counsel, is prominently located upon the permanent reservation front, bearing the same relation to Hot Springs as this magnificent house, the Cañon, does to the Yellowstone, and can well be spoken of as one of the wonders to be seen, and it is an inducement to those visiting the Springs to linger for a prolonged stay. No finer house than the Arlington can be found in any section of the country. It was erected at a cost, including appointments, in the neighborhood of $800,000, and the accommodations to be found there are all that the most exacting patrons can demand. It was constructed and built on its present extensive scale, at the request and under the direction of the Secretary of the Interior, the idea being to give to the visiting public at Hot Springs a hotel as fine as could be found in the land.

Now as to the bathhouses, the same remarks can apply, and after the present houses, which are now under construction, are finished, together with the others that are upon this reservation, and which are run so well by the lessees in accordance with governmental regulations, and under the direct supervision of the superintendent and medical director, Hot Springs can well be the Mecca for the multitude of our public who are afflicted, and who require treatment such as is obtained at these springs.

I am pleased, Mr. Secretary, to say that the progressive and public-spirited policy of your department, such as has been applied to Hot Springs, and which has been so marked within recent years—yes, I might say within the last couple of years—has met with the hearty approval of those whom I represent. They have been, and are now only too anxious to uphold your hands in any movement that will better serve the public. They have willingly expended their money and energies in adding beauty

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to the springs, and placing thereon buildings and improvements that wil' be a monument to their good faith, knowing and believing that your department will, by a continuation of a broad and conservative policy, recognize and encourage their efforts in that direction, and in doing so, you will thus better serve the public, and such encouragement from your department will be an incentive to the lessees for expending their money in better improvements, and in better service. If your department did not, by such a broad and liberal policy, encourage these lessees holding concessions upon the national parks and reservations, how could it, from a business standpoint, be expected that such improvements as these which we see here in this Cañon Hotel, or those at the Arlington and in the bathhouses at Hot Springs, would have been made? These lessees who, with so much public spirit, have expended their money in making such extensive improvements, had confidence in the good faith of the Government, knowing that whoever should occupy the position of Secretary, would be broad and liberal, and appreciative of their efforts, and would do nothing whatever that would tend to jeopardize their interests or lessen their assurances of the hearty cooperation and support of the Federal Government.

I do hope, Mr. Secretary, that in your next annual report to Congress and in your official conferences with Senators and Members, in relation to future appropriations, you will bring prominently to their attention these questions to which I have referred, and that, as far as appropriations are and may be available, you will use the same toward exploiting and bringing to the attention of the public these great national resources, the hot springs and parks, thus giving to the efforts in that direction of those interested, the moral and active support of the National Government. Such a seal of approval, I am sure, will go far toward diverting from abroad the streams of travel to our own land, and to such health resorts as Hot Springs.

Mr. Secretary, if I may be permitted while I am on my feet, I would like to make a few remarks also about the latest acquisition by the Government, namely, the wonderful and unexcelled Glacier Park in Montana, which has been spoken of to-day during the discussion of park matters. It was my good fortune a week or so ago to take a trip through this park with a party in which were the Assistant Secretary, Mr. Thompson, and Maj. William R. Logan, the superintendent. The memories of that trip will never be forgotten by me. Long will I remember the impressions I received in viewing its mighty crags and peaks, capped with eternal snow, the unbroken and virgin forests reflected in lakes nestling below like ermeralds, and above all the mighty glaciers lending added beauty to the scene.

The wisdom of Congress in setting aside this storehouse of grandeur for the public, will be more and more appreciated, I am sure, as the years roll by, and taken in connection with the Yellowstone, the Yosemite, the

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Grand Canyon of the Colorado, and the other parks, form a series of attractions that should induce our citizens to see America first rather than continue their annual pilgrimages abroad.

I would feel remiss should I not refer to the impression made upon my mind when I saw the wonderful progress made by the department and of the work performed by Maj. Logan, the superintendent, who, within only a few months, through the aid of his earnest rangers and men, has constructed with a mere pittance of an appropriation several miles of magnificent macadamized road, leading from Belton, on the Great Northern Railway, to the foot of Lake McDonald, which is the natural western gateway of the park, and also over the wildness of the mountains and the Continental Divide, has built scores of miles of horse trails and paths, making it possible to reach many of the most interesting sections, and if Congress will but give additional appropriations, I am sure that in another year, under his guidance, every portion of the park will be accessible either to the foot tourist or on horseback.

I may be considered an enthusiast. I admit the fact, and, like Mr. Marshall of the Geological Survey, believe that I have a malignant type of enthusiasm, but what I saw in the Glacier Park was enough to make any man as enthusiastic as myself.

I have seen much of this world, but to my mind Glacier Park is the central jewel, and I hope that the American public, as the result of this conference, will be better, properly, and fully advised of what nature has stored up for them in this direction.

To be fully appreciated, these wonders must be seen and visited.

The SECRETARY. Gentlemen, before calling upon the park superintendents, I think it would be well to discuss the last remaining general topic that we have. As most of you know, we maintain a force of special inspectors in the Department of the Interior, whose duties are to go about as directed to supervise and to investigate these parks and other branches of the service, so that they may report on special matters sent them for investigation as well as on general conditions. Their work is most important. It is important that they should understand the work from their point of view as inspectors and also from the point of view of the people they are investigating. I will ask one of the older, if not the oldest, inspectors in the service, Mr. E. B. Linnen, to present his views on this very important subject.

GENERAL INSPECTION WORK RELATING TO NATIONAL PARKS, BY E. B. LINNEN, Inspector, Department of the Interior.

It has been my pleasure in the performance of my official duty to inspect, on several occasions, a number of our national parks, and while the duties of the Secretary's inspectors have been confined more largely

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in other channels, such as the inspection of Indian reservations, Indian schools, United States land offices, offices of United States surveyors general, and matters pertaining to the public lands, still I deem it a matter of much importance that at least annual inspections should be made of our various national parks. These inspections should be general and so complete and thorough in their character as will acquaint the Secretary fully with the conditions as they exist in each of our national parks.

We have 13 national parks and 28 reservations for the preservation of antiquities and national monuments, containing over 5,000,000 acres, situated in 15 differant States and Territories. These national parks have been set aside by the Government for the whole people, because of the great natural beauty, scenic grandeur, and special features created by nature which make them worthy of preservation, governmental supervision, and such improvements, protection, and general management as will make them specially inviting to our sight-seers who delight in the beauties of nature.

These national parks contain wonderful and picturesque scenery, hot springs, geysers, lakes, streams, gigantic redwoods, mammoth trees in vast forests, cliff dwellers' ruins, beautiful driveways, grand mountain scenery, and other special features of interest, all of which have been created by nature, and which have been set apart by our Government because of their splendid natural beauty.

This inspection should embrace the books, accounts, and finances of the superintendent. It should be shown that the Government funds are being properly handled and accounted for; that each appropriation is being used for the specific purpose for which it was made, and the inspection in this regard should be so complete and thorough as to develop any irregular use or waste of Government funds. There should be a uniform system of keeping the books and records, time books, property accounts, etc., to show each fund, cash balance, balance of each appropriation, etc.

In the course of a recent inspection of one of our national parks it developed that Government funds were being wrongly used, and covered by vouchers made in the names of certain parties who performed no services as laborers, park rangers, or in any other capacity. Large sums were spent in the purchase of property without calling for competitive bids, even though active local competition in these articles existed. Payrolls were padded and falsified and other irregularities developed, which clearly demonstrate the necessity for at least annual inspections of national parks.

In the preservation of these national parks, and in order that they may be accessible to the sightseer and lover of nature, it is necessary that certain improvements be made by the hand of man. Thus one of the most important features is the question of good roads.

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These roads should be laid out by competent engineers with a view to making it possible to get to the various points of interest to be visited, and to showing the scenic beauties in each park to the greatest advantage. Such roads should be laid out and constructed with regard to their permanency and the protection and safety of the traveling public.

Generally, I believe that roads, bridges, and other improvements as may be found necessary to be constructed within our national parks should and can be constructed more economically under the contract system than by laborers employed under the jurisdiction of the superintendent.

It is especially desirable that suitable accommodations be provided in the parks for the many visitors where they may be lodged and fed. Good hotels or other suitable accommodations should be maintained by or under the jurisdiction or proper supervision of the Government, and conducted in a manner suitable and satisfactory to the Government. It should be possible for the traveler who visits our national parks to have equally as good accommodations as can be found in our cities, and to be served at prices not greatly in excess of those which obtain in the cities. The traveler and sightseer who has the time and means sufficient to visit our parks delights in good accommodations, and hostelries conducted in our various parks should be not only a credit to the management but to the General Government, the duty of whose officers it is to see to it that such accommodations, reasonable prices, and satisfaction is meted out to the traveling public.

There should be a uniform policy adopted for the supervision, maintenance, and improvements in our national parks. The inspector should carefully inquire into all concessions, and all persons to whom special concessions have been granted should be checked up, and it should be shown that they are paying therefor an amount commensurate with the value of their privileges; that they are not abusing same, and that they are conforming to the rates, rules, and regulations. The construction of public works of whatever character should be carefully looked into and checked up by the inspector. Suitable office quarters for administrative purposes should be provided, telephones and telegraph lines should be constructed, good pure water should be supplied, sanitation and sanitary conditions should be looked into and insisted upon, the patrol by a guard to prevent forest fires, trespass of stock, killing of game, etc., should be carefully looked into.

The means of transportation in our national parks should be given consideration and attention; accommodations for traveling in our parks should be by means of comfortable conveyances, vehicle, automobile, or otherwise, as appears best in each individual park, which should supply ample room for the traveler and his baggage. These conveyances should be covered as a protection to the traveler against heat and storms. The prices should be reasonable and regulated by the Government, as should

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also be the prices in the various hotels and lodging houses in our parks. The natural beauties and works of nature in whichever manner they may obtain should be carefully preserved and guarded by the Government officers whose duty it is to look after each national park, and the inspector should see to it that the superintendent, park rangers, and other employees are performing their various duties in a competent, faithful, and painstaking manner, that they are obliging and courteous to the general public, and that each employee is performing his specific duty in a proper manner. The protection of the game in our national parks is well worthy of attention, and great care must be given to this particular feature if the game is to be preserved. It has occurred to me that it might be wise for the Government to fence, with high strong wire fences, certain of its national parks which contain large quantities of game, for their preservation. This particular feature has been strongly brought to my attention by reason of the fact that in this Yellowstone National Park large numbers of elk, which make it their natural feeding ground during the summer months, go south during the fall and winter months to the Jackson Hole country, where some are slaughtered and many hundreds die from hunger each winter.

Wolves, mountain lions, and coyotes should be killed to safeguard the young antelope and fawns and prevent their extermination.

Some of the many beauties which nature has provided in a majority of our national parks are their splendid forests and timber, containing, as some of them do, gigantic redwoods, pines, and some of the finest forests in the world. Ample and adequate protection should be made to prevent the destruction of these magnificent forests by forest fires and the timber beetle. A wide fire guard should be constructed at the outer edge of these parks to prevent forest fires; likewise it should be the duty of the park rangers to see to it that campers within our national parks observe strictly the regulations to prevent forest fires occurring. The ground should be cleared of rubbish and worthless undergrowth where possible, to prevent fires and improve its appearance. Too much attention can not be paid to this feature of fire protection.

At least two of our parks contain the prehistoric ruins of the ancient cliff dwellers. Several cities or villages of these old cliff dwellers' ruins are still in a very fair state of preservation. These ancient ruins are particularly interesting to the archæologist and student of nature, and they should be protected and preserved in the best possible manner.

Each of our national park superintendents who will take a special interest in his work can always find plenty to do in the matter of laying out and accomplishing further necessary improvement, whether they be additional roads and bridges, additional hostelries, or additional fire protection, beautifying the grounds or something that will attract the visitor and preserve the natural beauties within the park. The inspector should

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make such a general inspection of all the matters herein enumerated as will qualify him to report with certainty to the honorable Secretary and acquaint him with conditions as they really exist, and also make such suggestions for the improvement and betterment of conditions as he believes necessary.

Each of our national parks possesses some special feature, differing from the others, and this is especially true of the Hot Springs Reservation at Hot Springs, Ark. This national park is one which is visited by many thousands of our people annually, who go there to receive the benefits from the curative properties contained in these famous health-giving waters. This, aside from the glorious climate and natural scenic beauties in said reservation. This national park contains the famous hot springs, which waters contain wonderful curative powers and from which the Government derives a revenue of $5 per month for each bathtub located in each bathhouse or hotel using the water. Likewise the Government derives a revenue of ground rental from several of the various hotels and bathhouses situated on the reservation, the moneys derived from these sources of revenue being employed for the maintenance of said national park and its management. One of the evils which had to be contended with at this point was the drumming system, which has heretofore obtained to an alarming extent and which has been the cause of much criticism on the part of the general public, and a matter which the Government was called upon to handle with much tact and firmness. Drumming was largely practiced on behalf of certain doctors, hotels, and rooming houses. They had their runners interviewing visitors and patients in the city of Hot Springs, also on the trains leading into Hot Springs, and they imposed upon and grafted the unsuspecting health seeker and traveler and gave Hot Springs a bad name by reason thereof. I am pleased to say that under the present management this drumming evil has been nearly stamped out, and while it still exists to a small extent our people can now visit Hot Springs with the assurance of courteous treatment and Government protection which formerly did not obtain.

Our national parks, rich in their natural beauty, should be a source of pride and delight to all our people. They have been set apart by our Government because of the wonderful works of nature and their scenic and awe-inspiring beauties. Some have until quite recently been in a measure neglected by our Government. The wonderful grandeur and beauties of nature are now being brought to the attention of our department, whose duty it is to preserve them, and steps are now being taken along the lines herein indicated with the object in view of the adoption of a uniform policy of administration; for the construction of good roads, comfortable hostelries, adequate means of transportation, protection against forest fires, preservation of the game, the preservation of primeval forests, prehistoric ruins, and antiquities. Our whole people are becom-

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ing interested in our national parks. Many thousands visit them each year. The lavish manner in which nature has endowed our parks has made them second to none in the world, and it should not be necessary for our people to visit foreign countries in their search of nature's attractions, wonderful mountains, and places of natural beauty, for here, in these parks, nature has provided wonders which are the never-ending delight of the visitor. To the lover of nature there is poetry in every beautiful scene. I am of opinion that this department might well give a little more attention to the national parks and their improvement, and that it would be wise if a bureau of national parks were created for such purpose.

EVENING SESSION, SEPTEMBER 12.

The SECRETARY. We were on the question of park inspection, and perhaps any discussion of that had better be postponed until we hear from the next two inspectors, whom I will call on in a moment. You will recall that in Mr. Marshall's paper he referred to topographical maps of the park. If you are interested in that you will find them there on the table for your examination. We shall be glad to hear from Mr. Keys regarding road and trail construction.

ROAD AND TRAIL CONSTRUCTION IN THE NATIONAL PARKS, BY E. A. KEYS, Inspector, Department of the Interior.

It has been deemed unnecessary to enter into a general discussion of highway construction as generally applied to the State and county and the numerous problems that enter into the same, and indeed this would be impossible without the addition of complete specifications and detailed plans, but rather to confine the paper in a general way to the roads of the national parks without regard to the peculiar topographical and climatic conditions of any particular park.

ORGANIZATION.

In each of our national parks where the financial resources justify there should be an organization to handle the public work of the park, and where the revenues are insufficient to justify such an organization this class of work might be handled from the nearest park having such an organization; as, for example, if the financial resources of Crater Lake National Park did not justify such an organization the organization from Yosemite National Park, with its equipment, might be temporarily diverted to Crater Lake National Park to make surveys for this park. In no case should a piece of work of any magnitude be allowed to proceed unsuperintended by a man of technical knowledge. This, of course, should be under the direct supervision of the superintendent of the park.

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The engineering organization in each park should have a man of general experience, who would be qualified not only to construct roads, but buildings, waterworks, sewer systems, power plants, etc. (such a man can be found among the younger engineers).

Where the problems along the above lines are complicated, such as an extensive sewer system, the superintendent of the park should be allowed the services of a consulting engineer to assist in determining the best possible general sewer design. The report of the superintendent regarding this branch of the service, including plans and specifications for the various classes of work, should be submitted through a central office to the Secretary of the Interior, and this office should be in charge of a man of technical knowledge of such matters.

SURVEYS.

Before any work of magnitude is undertaken in any of the national parks for a system of roads a carefully prepared general plan should be worked out, and each piece of construction should be some unit of this general plan, so that when it is finally completed every unit will go to make up a system of highways which will be a credit to the Government. If there is only $5,000 a year available in any particular year the small amount which this will construct should be some small unit of the general plan.

These carefully prepared surveys, with necessary profile and cross sections, would enable the engineers to submit through the superintendent of the park to the Secretary of the Interior a carefully prepared estimate of the cost of these roads, so that when the work should be undertaken at some future date the department would have at its command sufficient data to determine the probable cost of the undertaking in time to thoroughly discuss the matter and arrive at some definite conclusion before Congress is asked for an appropriation.

PLANS AND SPECIFICATIONS.

Before the work of actual construction is commenced proper plans and specifications should be prepared showing the cross section of the road, width, the amount of crown, depth of macadam, and all necessary data to proceed with the construction of the road. These plans and specifications should be standardized and approved by the Secretary of the Interior and available to send out to the superintendent upon request for the same, and the plans should not be departed from without express authority from the department, except in so far as is necessary to meet peculiar local conditions. Some of the first features which present themselves to the superintendent starting at the beginning of a highway are what shall be the maximum allowable grade, the width and depth of the macadam, what height of crown, what available rock is best suited for the purpose at

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hand, what class of culverts shall be constructed—concrete, terra cotta, galvanized iron, masonry, or wood. With properly prepared plans and specifications these matters would be settled definitely for the superintendent, with the exception of applying the general plans and specifications to the peculiar local conditions to which each case must be adapted.

Departing from the title of this paper, but in connection with the above, I would say also that it would greatly facilitate matters for the superintendent if standard plans and specifications were prepared and adopted by the department for sewer construction—that is, standard manholes, standard flush tanks, and standard septic tanks should be adopted and in all cases where a sewer system of any magnitude is to be installed the matter should be carefully considered and if necessary the department should not hesitate to employ for a limited time to assist the superintendent some of our well-known sanitary engineers, who should be consulted on the general and important matter of sewer disposal. In the case of our newer parks I believe it would be well to lay out in the beginning a general town-site plan where there is likelihood of a town growing to some magintude, then design the sewer system for this town and compel the buildings to conform to the town site and sewer system. This is a matter which is especially important in the national parks, where the work will be viewed by thousands of critical tourists, among whom will probably be some of the leading engineers, not only of this county but of other countries.

In connection with sewer disposal I desire to call attention to the but recently invented Emhof septic tank, which has been invented by one of the leading German scientists and which has been recently reviewed in the Engineering News and approved by no less an authority than Rudolph Herring, probably the ablest sanitary engineer in the United States.

Attention is called to this invention particularly for the reason that it is thought that it will be found applicable to sewerage disposal in some of our national parks. It appears that Mr. Herring made a trip to Europe, taking with him his assistants and made a thorough test of this septic tank before writing the above-mentioned article.

In connection with the adoption of standard plans and specifications for the roads, one of the first problems which presents itself is determining the maximum allowable grade and at the same time reach the points of interest throughout the park. This is a subject which has a somewhat large range and what follows is with reference to maximum grades on broken stone roads. In Prussia the maximum grade in mountainous country is 5 per cent, in France the standard on national roads is not to exceed 3 per cent, departmental roads not to exceed 4 per cent, and on subordinate roads not to exceed 6 per cent. On the great Alpine road over the Simplon Pass built under the direction of Napoleon Bonaparte the grades average 4½ per cent on the Italian side and 5.9 per cent on the Swiss side. In only one place does it become as steep as 7.7 per cent.

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In Great Britain the celebrated Holyhead Road built by Telford, the celebrated English engineer (from whom this class of road derives its name) through the very mountainous district in north Wales has an ordinary maximum grade of 3⅓ per cent with one piece of 4.5 per cent and a very short piece of 5.9 per cent, on both of which pieces care was taken to make the surface smoother and harder than the remainder of the road.

In New York on the State aid roads the nominal maximum grade is 5 per cent, but grades of 6 per cent have been found necessary in some places. In New Jersey are a number of State aid roads having grades of 7 and 8 per cent and one of 10 per cent. The Massachusetts State Highway Commission which has probably made more careful scientific research in road construction than any other State has fixed no maximum grade, but it appears on some of their important roads the maximum grade is 7 per cent.

For mountainous roads where the bulk of the traffic is down grade the maximum grade is often 8 per cent, and sometimes as much as 12 per cent. Experience in heavy freighting shows that wagons can be controlled on 12 per cent grades, but can not be satisfactorily controlled on steeper grades. I believe in the construction of roads in our national parks 10 per cent grades should be the maximum and this for a limited length.

A width of road for our national parks should be adopted which would not make them too expensive and at the same time would be wide enough not to endanger lives at the precipitous points. The width of travel way wide enough for necessary traffic is ordinarily overestimated. Two wagons having a width of wheel base of 5 feet and width of load of 9 feet can pass on a 16-foot roadbed and leave 6 inches between the outer wheels and the edge of the paved way and a clearance of 1 foot between the inner edges of the roads. An extreme case of this kind will rarely occur, hence a width of 16 feet should be sufficient unless there is considerable rapid traffic and this is a feature which we must sooner or later deal with, for I believe that we can not long exclude the advent of rapid traffic in the form of automobiles from our national parks and that our future construction should be guided by this feature.

The Massachusetts Highway Commission carefully measured the width of traveled way on numerous crushed-stone roads and found an improved width of from 15 to 24 feet, the average being 16 feet. The maximum width of the traveled roadway averaged 14.92 feet, and the width of numerous traveled roads averaged 11.5 feet. Upon this evidence the commission concluded that a width of 15 feet is ample, except in the vicinity of the larger towns. In New Jersey the width for State-aid roads is from 9 to 16 feet. The width of the French roads varies from 16 to 22 feet, and in Belgium there are many roads only 8¼ feet wide.

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It is my judgment that the width of 16 feet of paved way is sufficient for most of the principal roads in our national parks. At the precipitous points, in order to give the tourists a feeling of more security, an earth shoulder might be added to the outer edge, but where such a point occurs on a maximum grade the grade should be decreased at the dangerous point, and the road elevated at its outer edge upon the same theory that the outer rail of our railroads is elevated.

Theoretically, the shortest radius of curvature permissible on roads depends upon the width of road and upon the maximum length of teams traveling on that particular road and upon the speed of the teams. The length of a 4-horse team and vehicle is ordinarily about 50 feet. To permit such a team to keep upon a 16-foot roadway would require a radius of about 75 feet for the inner edge. In laying out the alignment for the roads in our national parks consideration should be given the maximum length of teams used in that particular park. It is also a good plan where these curves occur on steep grades to decrease the grade on the curves.

The principal requisites of a rock suitable for broken-stone roads are hardness, toughness, cementing or binding power, and its resistance to the wear under the grinding action of wheels. The rock should also be homogeneous in order that the road surface should wear smoothly. The hard, dark-colored, igneous rock commonly called trap rock is probably the best suited as road material, both as to its wearing and cementing qualities. The hard, uniform grained basalt, showing a steellike fracture and free from gas blows is probably the best road material to be found in this country. Next in order are the granites, but these vary so widely that many of them are practically worthless as road material. The fine-grained granites have been known to give good results, while the course, loose-grained ones are practically worthless as road material.

According to some authorities the gravel of the glacier drift furnishes excellent road-making material, and as a rule the gravel of bluish color will cement together while the reddish or brown gravel will not. However, so far as I am able to ascertain this class of material has not been actually used in road construction to any great extent and little is therefore known of its action under traffic.

In the construction of roads in our national parks the problem which will confront the superintendent is not so much what is the best material for road construction, but what is the best available material on the ground, and this will require a careful study of all available rock in that particular location, and in order to obtain the best material I would not hesitate to change the location of a road in order to make the material accessible to the particular job. It is thought that this is another case which would appear to warrant the necessity of a central office to which the superintendent could refer samples of rock to determine their suitability for road construction.

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FORM OF PROFILE OR CROWN.

Some authorities claim that the upper surface should be curved, while others claim that the upper surface should be two planes intersecting at the center of the road and having their angles of intersection slightly rounded off. Both forms are in common use throughout the country, but the first or curved form is probably the most commonly used; both have their ardent advocates. The Massachusetts State Highway Commission has adopted the form of two planes intersecting at the center; while the standard section for the New York State aid roads is curved. The curve usually adopted is not that of a circle, as is generally understood, but that of a parabola. My personal objection to the form of two planes intersecting at the center is, first: After the road is built it gives the appearance of a poor attempt at making a curved surface; in the second place, when the flanks wear a little, to the eye they look swaybacked and at the same time allow water to stand on the surface, which is detrimental to the foundation of the road.

HEIGHT OF CROWN.

The proper height of crown depends largely on the way of making repairs. If new material is added at long intervals, then the crown should be somewhat greater to compensate the wear, which would take place between repairs, but if the system of continuous repairs is used the crown may be somewhat lower. The transverse slope should be greater on narrow roads than on wide ones to prevent the water from carrying the surface material into the side ditches.

There should be more crown on steep grades than on flat ones, and indeed the crown should be in reality a function of the grade,—that is to say, there is no need of carrying the water to the gutter any faster than to prevent its flowing down the center of the road. In other words, the grade from crown to the gutter should be somewhat larger than the longitudinal grade of the road, and indeed a high velocity from crown to the gutter is undesirable, as it carries too much of the binding material into the gutters, which must be shoveled out, and usually by hand, and at the same time produces ridges in the road. Another disadvantage of high crown is that in riding over the road, unless the wheels are centered over the crown, the vehicle will ride onesided, and the occupants be forced against one another, thus making it somewhat uncomfortable. In concluding this subject I would say that in the construction of roads in our national parks I believe a crown of 6 inches would be found to be sufficient. This might, however, be increased to a maximum of perhaps 12 inches upon our maximum grades.

THICKNESS OF MACADAM.

The object of placing a layer of broken stone under the roadway is to secure, first, a smooth, hard surface; second, a water-tight roof, and, third, a rigid stratum which will uniformly distribute the pressure of the

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wheel over the area of the subgrade so that the bearing power of the soil will not be overtaxed.

The smooth surface and tight roof will depend upon the quantity and quality of the binding material, and the rigidity of the layer depends upon the binder and largely upon the thickness of the stratum. The supporting power of the subgrade depends upon the nature of the soil and particularly upon the drainage. Therefore for the above reasons the minimum thickness of the broken stone depends upon the nature of the soil, drainage, traffic, and binding material. The initial thickness of the roof depends upon the wear permitted before new material is added. If the repairs are continuous, the initial thickness may be a minimum, but if the repairs are made periodically, that is at intervals, the initial thickness must be equal to the minimum thickness, plus the amount allowed for wear between intervals at which repairs are made. After the road has been worn down 3 or 4 inches, it is usually so uneven as to require resurfacing, and for this reason it is uneconomical if the road in this stage is much or any thicker than the minimum required to prevent its breaking through.

There has been much discussion, and there is a great deal of difference of opinion, as to what shall be the proper depth of broken stone road. The depth considered necessary by the most extreme advocates of thick roads has decreased with more improved methods of construction, particularly the use of good binder and the advent of the steam roller, and as the advantage of thorough underdrainage has been better understood.

In the early days a depth of from 18 to 24 inches was frequently considered necessary for heavy traffic, while now 6 inches or less is usually considered sufficient. The Massachusetts State Highway Commission has carried on very extensive experiments to determine the proper thickness of macadam, and from these experiments has derived a formula for determining the thickness, which it is thought unnecessary to reproduce here.

In Massachusetts the thickness of State aid roads varies from 4 to 16 inches, and the standard for crushed stone roads with macadam foundation on well-drained sand or gravel is 6 inches, which the commission concludes is sufficient for ordinary traffic. In New Jersey the depth of macadam varies from 4 to 12 inches, but is generally 6 inches. The advocates of a small thickness of macadam often cite the experiment at Bridgeport, Conn., where some 60 miles of road having only 4 inches of macadam were constructed and gave excellent service, even under heavy traffic, but in this case all the conditions were extremely favorable for a thin road.

For the roads in our national parks I would recommend a minimum thickness of 6 inches of macadam and a maximum of about 9 inches. The thickness of course should depend upon the class of rock used in the

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macadam and the class of binder it is possible to obtain, and the proximity of the material to the site. If the best available rock is comparatively soft, and the binder is not as good as it should be, I believe it would be wise to use the maximum thickness in such cases.

CONSTRUCTION EQUIPMENT.

In the construction of roads in our national parks I believe that the department should have available in so far as possible standard specifications for construction equipment—such, for example, as standard designs for crushing plants, including the type of crusher, type of screen, and type of bin construction. This data could be sent out to the superintendent, who could remodel them so as to suit their peculiar local conditions. There should be also a standard type of road roller, carts, wagons, etc. After a piece of work in any particular park is completed it might be possible to transfer the construction equipment to one of the nearby parks, provided, of course, the cost of transportation were not too great. There should also be standard plans for highway bridges and culverts.

MAINTENANCE.

After a road has been properly constructed and the surface has been made compact and smooth it is very essential that it should always remain in this condition. The general impression is that a stone road is a permanent construction which needs very little attention after it is finally completed, but the best we can do is to approximate an indestructible road; therefore proper maintenance or up-keep is equally as important as good construction, and, indeed, the best roads are the result of good construction and a system of maintenance whereby every small defect is corrected before it has time to cause serious damage. Among highway engineers there are two general methods of maintenance: First, continuous maintenance; second, periodic maintenance or repairs. In the first system the waste caused by the grinding of the wheels under traffic is supplied gradually as it is worn away and carried to the gutters by the wind and rains by adding a patch here and there and thus maintaining the full thickness of the road. By the second method the road is permitted to wear thin and then an entire new surface is added. Of course, this latter system does not exclude small repairs, but rather limits them to the timely filling of holes and ruts in order to check more extensive damage to the road. In Europe the system of constant maintenance is the one generally used, while in the United States the method of periodic repairs seems to be more commonly used, although in the United States both methods have their advocates.

I believe in our national parks it will be found advisable to adopt a combination of the two above-mentioned systems of repairs—that is to say, after the snow and ice have cleared away in the spring the entire road

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system should be given a careful overhauling and that slight continuous maintenance will have to be applied throughout the season for which the park is open to the public.

EQUESTRIAN ROADS AND TRAILS.

In the construction of this class of roads throughout the national parks there is very little which can be said, except that standard widths and limiting grades should be established. It will be impracticable, of course, in this class of road or trail to use rock as a surfacing material, but I believe that the lines should be carefully located by instrumental work, so as to select the easiest grades, and I believe it would be well as fast as these trails are located to have a progress map upon which they can be immediately plotted. This would greatly facilitate tourists in getting around through the parks, as well as for administrative purposes.

It is thought that a width of about 6 feet would ordinarily be sufficient for these trails. This width, of course, could be increased at the precipitous points where the grade of the trail might also be decreased somewhat in order to give a feeling of more security to the tourists and to lessen the danger. It is also deemed advisable that these trails at the precipitous points should ordinarily be in-cut—that is to say, by benching back rather than to build out a dry rubble wall, the grades, of course, to be the best it is possible to obtain and reach the points of interest. In this class of construction I believe it would be wise to adopt some form of light equipment which could be packed on animals' backs.

WIDTH OF TIRES.

It is probable that the question of what shall be the proper width of tires to be used on the roads of our national parks has presented itself to some of the superintendents and it is therefore thought that remarks on this subject will not be out of place. It is very essential that the wagon in passing over the road should help to make and preserve it rather than to destroy the road and therefore in so far as the road alone is concerned and within reasonable limits, the broader the tire the better for that particular road. Quoting from N. S. Shaler, formerly president of the Massachusetts State Highway Commission:

> The matter of width of tires has been a subject of much remark. There has, indeed, been no end of idle talk concerning this matter, much of it directed to the point that our American builders have shown a lack of judgment in building with narrow tires, while they should provide their vehicles with broad treads such as are in use in Europe. The fact is that in this, as in many other matters in which our people have departed from ancient and Old World customs, they have been led by wisdom and not by folly. This will, on a little consideration, be made evident. Where there is no definite pavement, as is the case in $\frac{99}{100}$ of the American roads, the wheels have in muddy weather to descend into the earth until they find a firm foundation on which to rest. In so doing they have to cleave sticky mud, which often has a depth of a foot or more. If these wheels were broad tired, the spokes would also have to be thick and the felloes

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wide, so the aggregate holding power of the mud upon the vehicle would be perhaps twice what it is at present. It is useless to talk about the advantage of a broader tread for the wheels of our wagons until we have a thoroughly good system of roads which they are intended to traverse. Any laws looking to this end would be disobeyed because of private needs so general they would amount to public necessity. When the roads of a district are made good, only as to main lines of communication, the side roads and farms still demand the peculiar advantages afforded by the narrow tire.

Quoting a little further from the same authority:

The best argument against the enactment of laws concerning broad tires is found in the fact that the numerous and long-enforced English statutes on this matter have of late years been abrogated, a century of experience having shown that they are difficult to administer, and generally disadvantageous.

The Massachusetts Highway Commission, after an elaborate discussion of the matter, says:

It is a matter of doubtful expediency to endeavor in the present state of our highways, by general legislation, to control the width of tires and diameter of wheels.

The above-quoted articles are entirely logical with reference to the highways of our States and counties, but are not entirely applicable to the roads of our national parks, for the reason that there are not so many conflicting interests concerned, and I believe that the adoption of some standard width of tire tending to preserve the roads should be carefully considered.

Although there is not much difference between the tractive power of broad and narrow tires, the latter are much more destructive to the road but in deciding upon the proper width of tire there are other factors beside the road that should be considered. Other things being equal a wagon with broad tires is not so easily managed as one with narrow tires, and for this reason might prove dangerous on some of the roads of the parks; but it is believed that it would be well to investigate this matter from actual trials with wide-tired vehicles.

DUST PREVENTIVES.

One of the most important problems in connection with road construction and maintenence in our national parks is the suppression of dust. In some of the parks this is bad enough now, but when the motor vehicles are admitted it will be worse, and at the same time the damage to the road will also be worse than is now found from the use of iron-tired vehicles. A general discussion of the causes and effects of this subject will not be entered into, but in a general way it is thought a few remarks would be applicable.

The dust problem in our national parks must be handled in one of two ways. First, by constructing the roads in such a manner by incorporating such materials in the aggregate as to reduce to a minimum the formation of dust; or second, by treating the surfaces of the existing roads with materials which will give the same results. The latter may

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be either by the use of water or some of the known emulsions. While neither of these methods can be said to be entirely satisfactory at the present stage, yet I believe where the materials are used in the proper proportions, and both materials and methods of construction are better understood, that by the first method, that is to say, an oiled macadam road, which is constructed by the incorporation of an oil which has an asphalt base during construction, good results may be obtained, and it is believed that in those parks where the dust is especially troublesome that a short piece of this class of road should be actually constrcted as an experiment.

The heavy oil with an asphalt base, such as is found in our western States has a very great binding quality and is superior for this purpose to our eastern oils which have a paraffine base. On account of its greasy nature, oil with a paraffine base has very little cementing or bonding quality and is, therefore, unsuited for road construction. Those parks in the vicinity of Bakersfield, Cal., where probably the best oil for road construction is found, should certainly make some experiments along these lines, as it is thought that the cost of transportation will not make this material prohibitive.

If the consrtuction of the oiled macadam road in some of our national parks should be found satisfactory, the item of cost of sprinkling saved thereby should not be overlooked, as in some instances the cost of this item is considerable, and I call attention to the estimate for the necessary equipment for road sprinkling in the report of the acting superintendent of the Yosemite National Park for 1908, which is about $18,000 for approximately 10 miles of road.

There are very little data available covering actual cost of an oiled macadam road, but that which I am able to find would appear to fix a maximum cost for the addition of oil over an ordinary macadam road of about 14 cents per square yard. At this figure the first cost of applying the oil to a 16-foot road for a stretch of approximately 10 miles would be about $13,000, or a saving of about $5,000 between the first cost of the oiled macadam road and the purchase price of the necessary equipment for sprinkling the same road.

Quoting from an article on oiled macadam road construction and maintenance, found in the transactions of the American Society of Civil Engineers for March, 1911, Mr. Ross, who has charge of the roads for Newton, Mass., says:

> Asphaltoylene was used in 1907 on two roadways in Newton, a surface of 16,822 square yards being treated at the manufacturer's contract price, 6 cents per square yard. At present these roads are in very good condition.

It will be noted that this statement was made after the road had been in use about four years. Quoting further from the same article:

> Several macadam-surfaced streets having varying grades up to a maximum of 9 per cent and subjected to heavy horse-drawn and auto traffic were submitted to the

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liquid asphalt treatment. The method was as follows: A quantity of sand was heated to a temperature of 200°F., dumped in a pile, leveled and asphalt was poured over the hot sand in the proportion of one gallon of asphalt to each cubic foot of sand and then the whole mass was turned with shovels, or mixed in a concrete mixer (the latter being preferable on account of the cost). This work was done at the pit. The mixture was teamed to the work and spread on the roadway to a depth of one-fourth of an inch, being raked even with 14-tooth wooden rakes. Rolling was not considered necessary and the street was kept open at all times. The cost of this treatment was about 3 cents per square yard. It has the advantage of leveling and building up the surface of the road, each new application providing a new wearing surface. This work has remained in perfect condition without further expense since the summer of 1909.

There has been considerable of this class of work done in Spokane, Wash., but at this location it can not be said to have proven entirely satisfactory, but I attribute this more to the fault of construction than to the principle involved.

CONCLUSIONS.

Along the lines set forth in this paper the following conclusions are drawn:

(1) That there should be located in each one of our national parks, where the revenues and appropriations would warrant it, an assistant engineer to act under the direction of and in conjunction with the superintendent of the park, all reports including plans and specifications to be submitted by the superintendent to a central office to be in charge of a man having technical knowledge of such matters, this office to be equipped to prepare proper plans and specifications for the various classes of construction work, which will arise in the parks.

(2) The adoption of standard plans and specifications, in so far as possible, for the various classes of construction.

(3) Careful surveys and estimates for future extensions of the work, in accordance with a general road and trail plan previously adopted.

(4) The carrying on of experiments with oil and tar macadam roads and a general discussion among the superintendents of this subject, especially as to dust preventatives.

The SECRETARY. We shall now hear from Mr. Norris on general inspection work.

GENERAL INSPECTION WORK AS A PART OF PARK ADMINISTRATION, BY J. H. NORRIS, Inspector, Department of the Interior.

Mr. Secretary and gentlemen of the conference: As a result of the accession or setting aside, by act of Congress or otherwise, of a vast territory, covering an area of approximately 5,527,000 acres, for national parks and for the preservation of American antiquities and national monuments, the continued increase in population, wealth, business, and

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railroad facilities of the United States, the building of roads, bridges, and trails, making the parks, antiquities, and monuments accessible, and the judicious advertising of the natural wonders within the borders of the reservations, the work has grown until this branch of the service is now one of the important ones with which the department has to deal.

When we take into consideration the fact that this vast area is divided into 13 parks, covering approximately 4,600,000 acres, and 25 reservations for the preservation of American antiquities and national monuments, covering over 900,000 acres, scattered, as they are, over 15 States and Territories—namely, California, Arizona, New Mexico, Colorado, Utah, Oregon, Washington, Idaho, Montana, Wyoming, South Dakota, North Dakota, Oklahoma, Arkansas, and Alaska—as follows:

	Acres.
National parks:	
Yellowstone, Wyoming, Montana, and Idaho	2,142,720.00
Yosemite, California	719,622.00
Sequoia, California	161,597.00
General Grant, California	2,536.00
Mount Rainier, Washington	207,360.00
Crater Lake, Oregon	159,360.00
Wind Cave, South Dakota	10,522.00
Sullys Hill, North Dakota	780.00
Platt, Oklahoma	848.22
Casa Grande Ruin, Arizona	480.00
Mesa Verde, Colorado	42,376.00
Five-mile strip for protection of ruins	175,360.00
Hot Springs Reservation, Arkansas	911.63
Glacier, Montana	981,681.00
Total	4,606,153.85
National monuments administered by Interior Department: [1]	
Shoshone Cavern, Wyoming	210.00
Montezuma Castle, Arizona	160.00
Petrified Forest, Arizona	60,776.00
Navajo, Arizona	600.00
Tumacacori, Arizona	10.00
El Morro, New Mexico	160.00
Chaco Canyon, New Mexico	20,629.00
Gran Quivira, New Mexico	160.00
Muir Woods, California	295.00
Lewis and Clark Cavern, Montana	160.00
Mukuntuweap, Utah	15,840.00
Natural Bridges, Utah	2,740.00
Rainbow Bridge, Utah	160.00
Devils Tower, Wyoming	1,152.00
Sitka, Alaska	57.00
Total	103,109.00

[1] The above list was taken from the report of the Secretary for the year ended June 30, 1910, and since that time I am informed that there have been some additional reservations and some changes in the areas of the above reservations by reduction.

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National monuments administered by Department of Agriculture: [1]	Acres.
Cinder Cone, California	5,120.00
Lassen Peak, California	1,280.00
Pinnacles, California	2,080.00
Grand Canyon, Arizona	806,400.00
Tonto, Arizona	640.00
Gila Cliff Dwellings, New Mexico	160.00
Jewel Cave, South Dakota	1,280.00
Wheeler, Colorado	300.00
Mount Olympus, Washington	480.00
Oregon Caves, Oregon	.....
Total	817,740.00

it will be readily seen that the subject of inspection is almost unlimited in its scope.

Inspection work in connection with future park administration should be thorough and complete, independent of local influences. The principal points to be covered by an inspection are:

(1) Whether or not reservations for park purposes or monuments are capable of development as national institutions.

(2) The assistance in adopting a definite uniform policy for their maintainance, supervision, and improvement.

(3) The management—adaptability of the superintendent to the surroundings and whether or not he has met the conditions incident to the establishment of the park or reservation for national monuments.

(4) Complete, comprehensive, and systematic plans for roads, bridges, trails, telegraph and telephone lines, sewer and water systems, hotel accommodations, transportation, and other conveniences, such as will make all points of interest accessible and afford an opportunity for the sightseer to see them to the best advantage.

(5) Concessions to hotels, camping companies, transportation companies and others, whether or not adequate compensation is received for such concessions, whether or not suitable quarters and transportation facilities are provided for the comfort of the tourists at reasonable prices, and the methods employed in soliciting patronage.

(6) As to the best and cheapest methods of transportation and best means of regulating prices and competition in the different lines of business employed by concessioners and their responsibility, taking into consideration the fact that fair interest on capital invested for the suitable comfortable transportation and care of tourists should be realized in order that men of means will invest their money in buildings and equipment for such accommodations.

(7) As to the length of term for which concessions should be granted in order to secure the best results.

[1] The above list was taken from the report of the Secretary for the year ended June 30, 1910, and since that time I am informed that there have been some additional reservations and some changes in the areas or the above reservations by reduction.

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(8) Careful inspection of all public works and conduct of concessioners.

(9) Suitable quarters, in keeping with the surroundings, for the proper comfortable administration of affairs.

(10) Uniform system of keeping records, accounts, property returns, time books, registration, etc.

(11) Sanitary conditions and sanitation.

(12) Forests—proper protection for their preservation from fires and keeping them in their natural state.

(13) Preservation of natural wonders, such as geysers, terraces, glaciers, ruins, and other historic or prehistoric structures or monuments.

(14) Suitable notices at the various points of interest as to names of natural wonders, streams, geysers, glaciers, ruins, lakes, etc.

(15) Preservation and conservation of all power sites, timber, and minerals.

(16) Modes of travel—whether should be by vehicle, automobile, or otherwise.

(17) Grazing and trespass of stock.

(18) Patrol of parks, guards, etc.

(19) Patented lands within the borders of the reservation and best methods of handling the same.

(20) Enforcement of rules and regulations with reference to concessioners and others, and as to modification, amendment, revocation of or adoption of new rules and regulations.

(21) Season when park or reservation should be open to the public.

(22) Proper care, feed, and protection of animals, game, and fish.

(23) Fencing.

(24) As to appropriate appropriations for future improvement work.

The setting aside and dedication of the national parks and monuments was a step, and but one step, in the right direction. As stated in the report of the Secretary for the fiscal year ending June 30, 1910, with reference to national parks and national monuments, it was "the only practical means of preserving their wild grandeur from human desecration, 'where specimens of the best of nature's treasures have been lovingly gathered and arranged in simple, systematic beauty within regular bounds.' "

I am of the opinion, therefore, that a close personal inspection and report on all of the matters herein mentioned by an officer of the department, independent and outside of any local influence, giving to the department the benefit of his views on conditions as he found them to exist, would add to the value of the service, and perhaps bring about, or at least help to bring about, that condition which should be desired, a uniformity of action and system, a more successful administration of affairs, and arouse such an interest in the parks of the United States that they will really and truly be dedicated, not only in name but in reality, for "the benefit and enjoyment of the people."

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The SECRETARY. If there are any questions on the two papers just read, I would be glad to hear them now. If not, perhaps the questions will come up in the reports of the superintendents and if any of the superintendents wish to ask questions they can do so at that time. I think we will depart from the regular order and ask Maj. Forsyth, of the Yosemite Park, if he will present to us what he has to say at this time.

NATIONAL PARK ADMINISTRATION, BY MAJOR WILLIAM W. FORSYTH, Acting Superintendent, Yosemite National Park.

In discussing the general subject of national park administration it is perhaps proper to say that my experience in national park duty has been limited to two parks, the Yellowstone and the Yosemite, and that I may, therefore, possibly make the mistake of assuming some rules of administration to be of general application whereas they would be applicable in these two parks only. Of course for efficiency of administration there must be organization and the organization must be that best adapted to the needs and conditions of the particular situation. In order therefore to provide suitable and adequate organization a study must be made of the needs and conditions that are to come under administration. This is axiomatic, and applies to all kinds of administration. Before applying it to the national parks it is necessary to consider the object for which these parks were set aside and it is believed that it may be safely assumed that the object was the benefit and enjoyment of the people whether or not the law setting them aside specifically so stated. They must, therefore, be protected, their attractions must be made accessible, the means of access and operation must be maintained, and the administrative work, including the expenditure of funds, must be recorded and accounted for to higher authority. It seems apparent, therefore, that nearly every administrative act will fall under one of four general heads, namely, protection, improvement, maintenance, and accountability.

In order to determine the kind and amount of protection necessary, we must first know the number and character of the enemies and the probable energy of their attacks, and it is perhaps safe to say, that nearly all the parks are menaced by similar enemies.

There are forest fires, trespassers, including poachers, cattle, and sheep, and in general all violators of the park rules and regulations, especially the vandal who cuts his name in the bark of a tree or paints it on a rock, or digs up and carries away some rare wild flower, plant, or shrub. Then comes disease, not only those that attack human kind, but diseases of the trees, those that destroy the forests, reenforced sometimes by insects. Then there are several undesirable wild animals, such as the coyote and the cougar or mountain lion, that destroy the deer and antelope and bighorn sheep. Of all these enemies to the parks the most dreaded and destructive is the forest fire, and it is believed that the greatest protec-

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tion from it is afforded by such a system of patrolling as will insure early discovery of the fire. A small forest fire is easily extinguished. Where a particular area should be protected from fire, as, for instance, the Sequoia or big tree groves in California, complete protection is given by removing all dead timber and other inflammable material from the area and cutting a guard zone around it. The big trees are not easily burned if there is no combustible material near them. In regard to trespassers, poachers, vandals, and other violators of the park rules and regulations adequate protection can be given only by the enactment of laws making their offenses misdemeanors and prescribing appropriate penalties; that is, the enactment of laws similar to that now provided for the Yellowstone Park. Against the diseases to which humanity is liable the best protection is thorough sanitation and the rigid enforcement of proper sanitary rules. Against the insects and diseases that destroy the forests the aid of the Department of Agriculture should be solicited.

Finally, the people who visit the parks should be protected from accident or injury, and provision made for succoring them in distress. Where the parks are guarded by the troops there are always field hospitals and in the Yosemite Park the Army hospital is often used as an emergency hospital for the public, and many people receive prompt treatment and relief there every summer.

We come next to improvement and maintenance, but as the resident engineer of the Yosemite Park will discuss these in detail I shall only say that it would seem that in those parks whose attractions have not already been made accessible surveys should be made and a general road and trail project prepared, and thereafter all road and trail construction be made in pursuance of this plan and progress toward it completion.

Next and last comes accountability, and while the system adopted should be as far as practicable uniform for all the parks, local conditions will make some minor variations necessary. I feel quite confident, however, of the advisability of having a fiscal agent, or disbursing officer, in every park where considerable expenditures are to be made, so that payments may be made promptly. Much dissatisfaction arises among workmen when they quit or are discharged and find that they have to wait a month or more for their pay.

What has been said so far is believed to be of general application, and I will now pass on to the conditions and needs of one particular park, the Yosemite, which has been under my charge for the last two and a half years.

Perhaps it will help you to understand if I tell you briefly how the present Yosemite National Park originated.

By act of June 30, 1864, the United States granted to the State of California the Yosemite Valley and the Mariposa Big Tree Grove "for public use, resort, and recreation;" that is, for a State park, which it continued to be until August, 1906. By act of October 1, 1890, the

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United States set apart as reserved forest lands the present Yosemite National Park, or nearly so, but the act gave the tract no name, although it was clearly the intent of the act that the lands should constitute a park, as is shown by section 2 of the act, reading as follows:

> That said reservation shall be under the exclusive control of the Secretary of the Interior, whose duty it shall be, as soon as practicable, to make and publish such rules and regulations as he may deem necessary or proper for the care and management of the same.
>
> Such regulations shall provide for the preservation from injury of all timber, mineral deposits, natural curiosities, or wonders within said reservation, and their retention in their natural condition.

and so forth, enough to show that it was reserved as a park without a name. But although the act gave it no name, the public did and the name was Yosemite. So general was the adoption of the name that we find it used by Congress in the act of February 15, 1901, relating to rights of way through certain parks. It was not, however, until February 7, 1905, that Congress in the act changing the boundary lines of the reservation stated specifically that the reservation should thereafter be known as the "Yosemite National Park."

California, by legislative act approved March 3, 1905, receded and regranted to the United States the Yosemite Valley and the Mariposa Big Tree Grove, and Congress, by joint resolution of June 11, 1906, accepted the recession and again changed the boundary lines, and the Government early in August of that year formally took possession of the Yosemite Valley and the Mariposa Big Tree Grove.

Now, then, as far as I have been able to learn the legal status of the Yosemite National Park has never been officially or legally defined, and the need of doing so is an existing one and of growing importance. The questions that suggest themselves are, What jurisdiction, if any, has California over the Yosemite National Park? If she has any jurisdiction, is it the same both in the valley and exterior to the valley? If she has jurisdiction over any of it, the limits should be accurately and clearly defined in order to avoid conflict with the Government. As a matter of fact California does exercise jurisdiction in various ways in Yosemite Valley as she levies and collects property taxes and school taxes from residents there.

Is it legal for the coroner of Mariposa County to hold an inquest in Yosemite Valley? Is it legal to open polls and receive votes in Yosemite Valley for a State election? Is it legal for a State justice of the peace to hold court in the Mariposa Big Tree Grove? These are some of the questions that suggest themselves.

One of the needs of this park, therefore, is that the extent of the jurisdiction of California over it, or over any part of it, be defined; and this jurisdiction question suggests another need of the park, and that is the elimination of private ownership of lands and roads. In the brief sketch

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given above of the origin of the park it may have been noted that the boundary lines have been materially changed since the original reservation was made. One of the principal reasons for the changes was to throw out of the park as much as possible of the patented lands, the private title to the remainder to be extinguished by the Government. So far, however, Congress has failed to act, and these lands have steadily increased in value, until now it would cost much more to buy them than it would have done six years ago when the first boundary changes were made. There are nearly 20,000 acres of these lands in the park, and the Yosemite Lumber Co. is now building a logging railroad from El Portal to the park boundary line in the vicinity of 6,000 acres of timber land that the company owns just inside the park. In the near future then we may expect the denudation of these 6,000 acres to begin. To my mind the acquisition by the Government of all the private land and road holdings is the overshadowing need of the Yosemite Park.

These two needs, that of defining the jurisdiction of the State of California over the park, or any part of it, and of extinguishing the private titles to lands and roads in the park, are special needs, and are believed to be peculiar to the Yosemite Park.

Another great need of the Yosemite Park, but not peculiar to it, is the need of a law for its protection similar to that now provided for the Yellowstone Park. Considering the subject of protection in connection with the Yosemite, it is believed that protection will always be incomplete until such a law is provided.

As it is now, expulsion from the park is the only penalty for the most flagrant and serious violation of the rules and regulations, as well as for the most trivial.

Protection against fire is afforded by patrolling from all the outposts in the park, supplemented by the telephone. There are ten outposts, all connected with each other and with the superintendent's office by telephone, thus enabling prompt notice of the fire to be sent into headquarters.

A detachment of 10 soldiers and 5 pack mules is held in readiness at all times for fire fighting, and we have no dread of any fire that may start within the park. It is only the fires that start outside and burn toward the park that cause anxiety, for they are likely to be beyond control when they cross the park boundary.

Those that start inside are sure to be discovered before they gain much headway.

The only thing needed to make protection for the Yosemite complete and satisfactory is the enactment of the law referred to above.

Taking up now the improvement of the park, let me give you the annual estimates and the corresponding appropriations for the last five fiscal years—that is, the period since the Yosemite Valley became a part of the National Park.

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Estimates and appropriations for Yosemite National Park.

Fiscal year.	Estimate.	Appropriation.	Revenue.	Total available.
1908	$89,355	$30,000	$11,000	$41,000
1909	236,530	30,000	11,000	41,000
1910	395,980	30,000	11,000	41,000
1911	470,655	62,000	11,000	73,000
1912	508,180	50,000	11,000	61,000

To these different appropriations should be added the annual revenues of the park, the average revenues for the last five years being about $11,000 a year.

It will be noticed that for the last three years the amount appropriated was about one-tenth of the amount estimated as needed. During these three years—that is, during my administration—we have built about 3½ miles of Telford macadam road, installed a road-sprinkling system for about 14 miles of road, built 3 cottages and 3 barns and wagon sheds, partially rebuilt the intake and water-supply system for the electric power plant, installed a new Pelton wheel in the power plant, installed a rock crusher and quarrying plant, and extended the electric power for 4 miles to operate the rock crusher and the pumps for filling water tanks for the road-sprinkling system. We have just completed a trail from Yosemite Valley to Lake Tenaya, a distance of 10 miles, making perhaps the prettiest lake in the park easily accessible.

Two bridges have been built over the Merced River, one of them an iron suspension post bridge and the other a wooden bridge for wagons. Work is now in progress on a water-distributing system in Yosemite Valley, to cost about $45,000 when completed. Several trails exterior to the valley have been materially shortened, and all trails have been kept in repair.

So much for what has been done.

What should be done are the extension of the road sprinkling system from Yosemite village to Happy Isles, and from the floor of the valley to Fort Monroe on the Wawona road, the completion of the improvement of the road from El Portal to the valley, a garbage incineratory erected, the preparation of a general plan of roads and trails and thereafter all road and trail construction to be in pursuance of this plan and progress toward its completion.

New road—Fort Monroe-Glacier Point—75,000 feet, to be a part of this plan.

There are five bridges for wagons over the Merced River in Yosemite Valley, one over Yosemite Creek, and one over Tenaya Creek. As the renewal of these become necessary reenforced concrete bridges should be built, the Sentinel Bridge being thus replaced in the near future.

A modern up-to-date hotel should be built in the valley. There is only one hotel there now, and it was built years ago, when the valley was

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accessible only in the summer time. Being intended for summer only, it was located on the cool or shady side of the valley and was not provided with heating facilities, nor plumbing fixtures for the supply of hot and cold water, nor amusement rooms for guests when bad weather kept them indoors. The valley is now open to the visitor summer and winter, and a hotel with every comfort and convenience is much needed and should be located on the sunny side of the valley. Mirror Lake is rapidly filling up with sand, which should be removed and further filling prevented. This is not a difficult problem.

One more point, and I am done:

Under the head of accountability, where I have stated in general that a resident disbursing officer should be provided for those parks in which extensive improvements are made, I wish to add that even where the improvements are not extensive some park official should have funds placed to his credit for the purpose of paying laborers only. This, in my opinion, would prevent much discontent among discharged laborers and also annoyance to the park management.

The SECRETARY: I think, perhaps, unless there are some questions or suggestions relative to the paper just read we will ask Col. Brett if he will tell us something about conditions in Yellowstone.

REMARKS BY LIEUTENANT COLONEL L. M. BRETT, Acting Superintendent, Yellowstone National Park.

I am rounding out my first year in the park here and I do not feel competent as yet to discuss a great many questions. I simply want to say that I had a great many problems to solve and I never took one of my problems to any man doing business in this park without receiving the very best he had to give. His information was always disinterested, honest, and valuable. Placed here with a new command, absolutely new to every situation myself, I can not tell you how much that meant to me and to the proper administration of the affairs of the park. Of course we know of the criticism passed on the subject of the conditions of the roads during the month of August. The engineer officer, who is even newer than myself, came here in June and found his allotments made for him. He did the very best he could with them and the responsibility rests entirely on the lack of funds.

I do not believe it is necessary for me to defend the Army and the work of the troops in these different parks, but as there has been an expression of the desirability of replacing the troops with civilian employees, I have concluded that it is best to give this assembly a little idea of the equipment and work of our men. The military organization and its discipline is just as well suited for this kind of work as it is for any other military work, because this is military work. We have grades extending from

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the commander of the troop to the corporal. We have scattered through the park detachments of about 200 men in all and have about 150 held in reserve at Mammoth Hot Springs. They cover every boundary line, every approach, and the loop. They are organized so as to give warning at once of any fire, disturbance, or trouble of any description. Last year a large section of the northwest was almost devastated by forest fires. The troops were called upon to fight the fires with the rangers. The letters to the different departments from those rangers and from those in authority speak in the highest terms of the work of the troops, showing our organization is fitted for that kind of work. That the game surrounds the soldiers' stations, that the deer will eat out of a soldier's hand, speaks for itself. The game has no better friend in this park than the soldier. There are 350 of us in the park to-day, scattered in 15 different soldier stations and at times, especially in the winter, occupying 11 other snowshoe cabins for the protection of this park. There are 70 mules that draw the heaviest wagons, always on the road, every day that the snow will permit, for the purpose of supplying these different stations and snowshoe cabins. In the pack-mule trains we have a chief packer, cargador, blacksmith, cook and 16 packers, which force is ample. The troops are so organized that they can be used in sections in any part of park, traveling in detachments.. The detachments are all the way in size from a corporal's command to that of the troop with its captain, depending on the necessity or the degree of danger. We have here two temporary hospitals, one at the fountain and the other at the lake.

When you take into consideration the cost of replacing all of this by civilian labor, it very soon runs into the hundreds of thousands of dollars. The only augument which can be adduced for replacing us by the other form is that the other form should have more permanency. I grant you that, but I do not grant its efficiency. I believe that the system is very efficient to-day and has been and that with the small change of detail—instead of ordering out all at once but half be so ordered and those who remain instruct the newcomers—I am convinced that our force would be as efficient as any that could be secured.

The SECRETARY. Is there any discussion of the matters presented by Col. Brett? If not, we will next hear from the superintendent of the Hot Springs Reservation, Hot Springs, Ark.

THE PAST, PRESENT, AND FUTURE OF HOT SPRINGS, ARK., BY H. H. MYERS, Superintendent of the Hot Springs Reservation.

The Hot Springs of Arkansas are located at Hot Springs, Garland County, Ark., 63 miles southwest of the capital of the State, Little Rock. Ever zealous and watchful of the interests of its people, the Government by act of Congress enacted April 20, 1832, that the Hot Springs in said territory, together with four sections of land including the said springs

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at as near the center thereof as may be, shall be reserved for the future disposal of the United States, and shall not be entered, located upon, or appropriated for any other purpose whatever.

The permanent reservation consists of 911 acres, and comprises the East, West, and North Mountains, which lie in and around certain portions of the city of Hot Springs. The daily flow from these 44 hot springs approximate 1,000,000 gallons, and comes out of the earth at an average temperature of 147° F. The Government has spent several millions of dollars on its scheme of improvement of the springs and the surrounding land, which consists of a system of mountain roads approximately 10 miles in length and beautifully laid out and improved walks, both of which wind around the mountains by easy grades to the summits, the altitude of which is a little over 1,000 feet, from which is disclosed at various points a beautiful scope of undulating country for a distance of 80 miles, together with the surrounding peaks of the Ozarks.

The early history of these hot springs belongs to the realms of legends and traditions tinged with romance and adventure. Their discovery dates back to when the Indians roved unmolested through the forests, pitching their wigwams and lighting their camp fires in the most advantageous places, where were found game and plenty of pure water. No doubt, these dusky aborigines were familiar with the virtues of these hot waters centuries before Columbus ever sailed the trackless deep and unknown seas when he first discovered the land of America. Soon after this historic event, strange and fascinating tales of the wonderful curative powers of these thermal waters began to flow to all portions of the new world, and indeed we may well believe that the story was credited even then that somewhere hid in the western wilds was a wonderful fountain of youth whose magic waters would banish the traces of time and cause the roses of youth to bloom again. In the early part of the 16th century this alluring and entrancing tradition must have been wafted to the ears of Ponce de Leon, who as a reward for his valiant services to Spain was then governor of the island of Porto Rico. This was a period in the world's history when men believed in the philosopher's stone and the elixir of life, and it is not strange that that battle-scarred old veteran Ponce de Leon should believe in the remarkable Indian tales or that he should head an expedition in quest of the magic waters which would restore the virility and sweetness of youth and pristine vigor. In March, 1512, with three ships he sailed from Porto Rico in search of the prize which was to restore the immortality of youth. On March 29 he landed on the mainland of this country near the point now called Fernandino. Taking possession of it in the name of Spain, he called it Florida, because the land was first seen on the Pascua de Flores, and because it was fair to look upon, being covered with pleasant groves, and carpeted with flowers. Following the landing many explora-

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tions were made, and all streams and springs were tested, but they searched in vain for the mythical fountain of youth. The Indians in possession of the country were fierce and warlike, and told always the same disappointing tale "Beyond you, far beyond you, is the stream you seek." After returning home, having failed to penetrate the wilderness far enough to have discovered Hot Springs, he returned again to Florida more zealous and ardent in his desire, because of a wound received, from which he believed the healing waters could wash the poison. Again he failed and returned to Cuba, where death released him from the old age he had so valiantly and vainly sought to rejuvenate in the hot springs.

The story of Ferdinand de Soto, who subsequently found his grave in the Mississippi River, and who, no doubt, also sought the benefits of these healing waters, is similar in its record of sorrow and disappointment to that of de Leon.

There is but little doubt that the healing powers of these hot springs was well known to the Indians in that period, and legend goes on to declare that the springs and the immediate surrounding country was the land of truce, for each and every tribe was privileged to bring its sick and wounded for care and treatment. This fact is borne out by the many evidences extant of excavations made in the mountains, and many arrowheads and hammers of prehistoric ages have been found which are made from the novaculite which abounds extensively in many portions of the reservation, and is a valuable whetstone.

In the year 1800 French trappers spent much time at Hot Springs and made it their headquarters, and soon after President Jefferson negotiated with Napoleon for the Louisiana Territory. In 1803 he sent an exploring party headed by Dunbar and Hunter for the purpose of making an examination of the waters and surrounding country and ascertaining if anyone was in possession under such rights as would enable them to establish claims in the future. Nothing was found except a few scattering shanties.

After taking the temperature of the water and noting the surrounding country and the wonderful geological formations, they made special mention of the curative properties of the water and the oilstones which are used all over the world to-day.

The source of the heat of these waters can only be conjectured. The finite mind can not delve into the mysteries of that arch alchemist "Nature," or view the caverns wherein she works this wonderful secret. The scientists may inform and theologians may declare, but the sources of the heat, or the constituency of the various salts, gases, and other materials which formulate the waters, remain a mystery. But that nature has compounded from her wonderful storehouse and resources a water whose potency for curing diseases of mankind exceeds that of all others,

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there is no doubt. The Government, to determine what the qualities of the healing properties of the Hot Springs were, in 1904 especially commissioned Prof. Bertram B. Boltwood, of Yale College, to make a scientific test of those waters for that wonderful mineral, radium, the result of the research by Prof. Boltwood being in part:

(1) The waters of the springs on the Hot Springs Reservation are all radioactive to a marked degree.

(2) The radioactivity of the waters is due to dissolved radium emanation (a gas), and not to the presence of salts of radium or other radioactive solids. Medical science is unanimous in the assertion that this water is the greatest of all the eliminatives. This being true, it can readily be understood why the greatest benefits are derived by the use of these hot waters being charged with radium gas which flows direct from the spring to the user without permitting the evanescent radium property to be lost.

A course of baths at Hot Springs consists of 21 baths. There are 24 bathhouses located there, ranging in price from $3 to $10 for the 21 baths, to which must be added the attendant's fees of $3 for the 21 baths, which is the same in all the bathhouses. There are 11 of these bathhouses on the permanent reservation and 13 on private property. The hot waters used by all the bathhouses both on and off the reservation is the same.

The average number of baths given annually is approximately 1,000,000. The healing power of these waters is the wonder of medical science, and nowhere can be found any water that has and is effecting such wonderful cures as these.

In 1880 the Government established at Hot Springs an Army and Navy hospital for treatment of the sick of both branches of our country's defenders, as well as the veterans of the Civil and Spanish-American Wars. The records of this hospital show that 90 per cent of its patients are either entirely cured or materially benefited.

The entire control and conduct and use of the waters of the Hot Springs is vested in the General Government and is handled by the Interior Department, which is represented at Hot Springs by a superintendent appointed by the Secretary of the Interior.

The price of the baths at all of the bathhouses is fixed and maintained by the Government, which controls the water supply and prescribes all rules and regulations for the management of the bathhouses and the administration thereof.

Congress in 1878 enacted "That the superintendent shall provide and maintain a sufficient number of free baths for the use of the indigent, and the expense thereof shall be defrayed out of the rentals hereinbefore provided for." This bathhouse is maintained at Government expense and is absolutely free of charge to any citizen who is indigent and unable to pay for baths. There are given an average of 200,000 free baths at this bathhouse annually.

The department does not undertake to give a complete list of the cures that have been effected by the use of these waters, or to say what diseases

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or ills they will cure, but a course taken by a person in normal health results in a rejuvenation and vast reinvigoration.

The use of the waters opens the pores and channels for the expulsion of matters injurious to health, arouses torpid and sluggish secretions, stimulates the circulation, the muscles, the skin, and the internal organs, and thus purifies the blood and removes aches and pains, restores the weary and exhausted, and revives the debilitated, and helps build up the entire system.

The city of Hot Springs is a modern, well-built city, and has some 600 hotels and boarding houses, ranging from the very best to those suitable to any man's station.

The department controls the practice of medicine in Hot Springs so far as it pertains to the use of the hot baths, and physicians who are permitted to prescribe the hot waters must be registered by the Federal Registration Board appointed by the department, and no physician who is not registered and authorized by the department to prescribe the hot waters can do so.

The rules further provide that any person who patronizes or treats with a physician who is not registered by the Government can not take the hot baths. Any person desiring these baths can by calling at the superintendent's office obtain a list of registered physicians and any other information looking to his comfort.

In the administration of the affairs at Hot Springs this department has but one object, to see that everyone who is entitled to them may avail themselves of these wonderful waters, surrounded by every protection possible.

The climate conditions of Hot Springs are very excellent. The mean rainfall for an average year being 5.20; the mean temperature for the average winter month is 58.07, and for the summer month 90.02.

The number of annual visitors to Hot Springs averages approximately 150,000.

All sorts of healthful outdoor amusements are provided and indulged in, such as golf, tennis, baseball, horseback riding, and mountain driving.

In the proper administration of adequate rules for the fullest protection of the many thousands of visitors here many obstacles had to be surmounted. The worst feature of a very serious condition was that of doctor drumming, which has in a great measure been obliterated. First, we installed United States inspectors on all incoming trains, whose duty it is to inform the public of the rules and what to do to comply therewith for their individual benefit. Next was instituted a daily bathhouse report, and a more strict enforcement of medical ethics through a very efficient Federal medical board; the result has been that this most of all objectionable feature of the most famous resort in all the world was reduced to the minimum, no longer are there drummers on all trains, and no longer can those human parasites make commercial traffic of the ill and

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afflicted—the Government has assumed a place of general guardian of the visitor here and sees to it that each receives a square deal. A question which has been for two years a source of much agitation is that of the State ceding to the Federal Govenment absolute and exclusive jurisdiction of the original four sections of land which composed the reservation as set aside by Congress in 1832. I believe, and this belief is shared by a majority of our citizens, that if the Government had such jurisdiction, and managed the city as on plans similar to those in the management of the District of Columbia, that it would be but a short time until this would not only be recognized as the worlds best and foremost health resort but at the same time the best governed city and the world's show place. I have labored unceasingly to create sufficient sentiment along these lines as to have the State legislature make such cession, and while success along these lines does not seem imminent, yet there is much to encourage the belief that some day the citizens will realize that Government control is all that is lacking to bring about the magnificent results referred to. I am of the opinion that jurisdiction has never passed from the United States, but this is a matter of legal interpretation of the acts of Congress and the bill of rights when Arkansas was admitted to the Union in 1836, and will, of course, have to be passed upon by the courts.

Another thing which has agitated us is that the city of Hot Springs, normally about 15,000, has to provide facilities for a city of 50,000, and the revenues are insufficient to do this, so the question is, could a small tax, a cure tax, be levied on the visitors to be used in support of the city and the construction of streets, boulevards, etc. If such could be done it would result in vastly improved facilities and add much to the pleasure and benefit of each citizen and visitor.

I incline to the belief that this will go down in history as an epoch-making conference, it will divide the time when this resort as well as the great national parks were operated locally with but scant knowledge of their conditions on the part of the department, from the time when the department actually knows the needs and is in personal contact with local conditions. From my experience I am strongly in favor of a national park bureau, with a bureau head whose duty would be to personally know the needs and local conditions; it is difficult for an official in Washington, without knowing the ground, to determine always just what is most desirable; for instance, during all the time since 1832 to this good hour, but two heads of the department have ever visited this resort. This is unfortunate, for the presence occasionally of such official inspires the citizens to a more cordial support of the governmental efforts, and brings about a more hearty cooperation in the administration of our affairs, the people like to feel some one at the head knows them and and knows their needs.

Some of the matters discussed here appear to me to depend altogether on local conditions, so that a general rule is impossible, for instance, the

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permission of automobiles in national parks. Now take our reservation; very few there are who would even advocate the use of machines here, while perhaps there are other parks where no harm could follow their use, so that the result brings us back to the matter of a park bureau where its head could after personal acquaintance determine which was best.

This conference will I feel sanguine result in one thing which is bound to be beneficial, that of our meeting the Secretary. Getting acquainted with him and knowing him is bound to make every subordinate here feel a personal loyalty to him and increase our zeal in our effort to add all the honor and luster to his administration within our power by each doing his level best.

Mr. Secretary, I want on behalf of the citizens of the greatest health resort in the world to ask you now to come and see us, let us demonstrate to you that we all feel grateful for your efforts in our behalf, that we appreciate your interest in us, and your efforts to ameliorate in every possible way conditions which will insure to every citizen and visitor the best possible results. The Government has no asset nearly so valuable as these hot waters—forests may be replenished, roads may be built and restored, water may be conserved, all things material may be increased, but health when lost can not be bought, the nearest approach is to come and bathe in these wonderful waters and obtain rejuvenation; to the sick they bring health, to the afflicted they bring relief, to the well they bring brightness of eye and alertness of step, rest from fatigue and happiness to all.

The SECRETARY. I notice the name of Maj. W. R. Logan, superintendent Glacier National Park. I would like to hear from Maj. Logan.

Mr. HERBERT F. MCCABE. Maj. Logan is here, but owing to a severe cold he has requested that I read his paper or incorporate the same into the record of the conference.

The SECRETARY. Very well, Mr. McCabe, we will be glad to have you read the paper.

A NATIONAL PARK IN THE FORMATIVE STAGE, BY W. R. LOGAN, Superintendent, Glacier National Park.

It occurred to me when I was assigned to prepare a paper on "A national park in a formative stage" that it would be interesting for you to know something about the earlier history of our latest born national park at a time when it was entirely uninhabited save by the wild animals of the mountains and roving bands of Indians of the Kalispell, Kootenai, Piegan, and Blackfeet tribes.

It was my good fortune in the springtime of my young manhood in the years 1881 and 1882 to visit the region which is now known as Glacier National Park with an exploring expedition headed by Prof. Rafael

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Pumpelly, of Newport, R. I. The first year, in the month of June, we made an attempt to enter the country from the east side of the mountains, but the snow was so deep upon the summit of Cut Bank Pass that it was impossible for us to continue; so we "back tracked" to the prairie country—went around to the north and tried to effect an entrance through Kootenai Pass. Here again we failed, owing to the tremendous amount of snow choking up the pass, and the attempt to enter was abandoned for that year, as Prof. Pumpelly had other exploring work awaiting his attention in the vicinity of what is now Great Falls.

The following year we made a second attempt; this time we decided to try an entrance from the west. In the month of August we started with a pack train from Helena, journeyed down past Missoula, came across the Big Blackfoot, on down to the Jocko Agency, thence crossing the reservation, following along the west side of Flathead Lake to the place where the town of Kalispell now stands, which at that time was bare prairie. From that point we moved up to the present site of Columbia Falls. At that time this fertile region, which is now so thickly populated, was inhabited by a few wandering bands of Indians, our party comprising the only whites in that section. From the site of Columbia Falls we plunged into the mountains through Bad Rock Canyon. After traversing over portions of the Flathead country for several days finally we came to the south shore of Lake McDonald, where we picked up an old Indian trail which led us over Cut Bank Pass. The trip was a strenuous one, as we had to chop almost our entire way through the mountains, the Indians having abandoned the trail some 25 or 30 years previous. Only one conversant with mountain travel can realize the difficulties to be encountered in making a trip of this nature, and more especially in following an old Indian trail, which is always laid out along lines of least resistance. Our first discovery of a glacier was at a place we called Mud Creek, the name of which in later days was changed to Nyack Creek. This glacier was afterwards named by me "Pumpelly Glacier," in honor of Prof. Pumpelly, the leader of the expedition. According to information I now have, Lieut. Ahern, of the United States Army, was the next man to enter, Ahern Pass being named after him. Then came the Great Northern Railway by way of the old Two Medicine Pass, opening up to the world the famous Lake McDonald, located at the southern end of the park, within 3 miles of their track at Belton, Mont. It was not long after that some enterprising people of Kalispell cut out a trail from Belton to Lake McDonald, and for years the people of Kalispell and the Flathead Valley visited the Lake McDonald region during the summer months. Finally the attention of the Members of Congress from Montana was called to the scenic beauties of this portion of the Rocky Mountains, and I believe Lake McDonald was visited by Senators Carter and Dixon, who were very much impressed with the scenic wonders to be found there, and steps were immediately taken to have Congress set the same aside as a playground for the American public.

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Glacier National Park, the youngest of our national parks, was created by the act of Congress approved May 11, 1910. It is located in northwestern Montana, and its 1,400 square miles embraces rugged mountain peaks, forest-clad valleys, glistening glaciers, and deep blue mountain lakes. The park is bounded on the north by the Dominion of Canada, on the east by the Blackfeet Indian Reservation, on the west by the Flathead River, and on the south by the Great Northern Railway. The park possesses attractions for the scientist and tourist which are not surpassed in any country of the world, tourists of world-wide experience pronouncing it the Switzerland of America. Within its confines are 60 large glaciers, these enduring ice sheets spilling their pure chill waters over hundreds of cataracts and splashing cascades into foaming mountain streams, where all varieties of trout abound, into clear, cold lakes that lie long and ribbonlike in the forested valleys. Cut in twain as the park is by the Continental Divide, the lofty mountain peaks within its borders are covered with perpetual snow.

To quote an excerpt from an address by Mr. R. B. Marshall, chief geographer, United States Geological Survey, delivered before the Canadian Camp, New York City, March 6, 1911:

> I say without fear of contradiction that Glacier National Park is one of the most beautiful mountain sections in the world. To the east lie great plains, drained by the Mississippi River system. To the west, in sharp contrast, rise great walls of mountains, forming the Continental Divide, extending apparently unbroken for miles. In the canyons are roaring streams, heading in the melting snow and ice, flowing into placid lakes and on into the arroyos of the plains beyond. The western portion is drained by Flathead River eventually into the Pacific.
>
> Rising more than 10,000 feet above sea level is Mount Cleveland, the highest of innumerable lofty peaks. Dotted over the entire region are many beautiful lakes, some only a hundred feet, others 10 miles or more in length. There are in all more than 60 live glaciers, some containing but a few acres, others several miles in extent. The whole region is inhabited by wild animals, but the unwritten sign of the boundary line warns the hunter that the park game is reserved for the pleasure and enjoyment of the people. The numerous streams and lakes abound in gamy trout of many varieties, and, while you may not hunt in the park, Uncle Sam places no bar upon the use of the rod and reel. In fact, here is everything to satisfy the most ardent student and lover of nature.
>
> One of the most attractive features of the Glacier National Park, in my opinion, is its location immediately adjacent to the Canadian boundary line, with its possibilities for the creation of an international park.

With this brief introduction of our park, I will give a short résumé of the work accomplished during my administration from August 8, 1910, at which time I was detailed as superintendent of road and trail construction, up to the present time. Twenty-eight days before my arrival at the park and assuming charge forest fires broke out in various portions of the reservation, and immediately upon entering duty at the park I devoted all my attention and directed my energies in fighting the fire fiend, which for some time, on account of the unusually dry weather, threatened to wipe out the entire park. In connection with the fire

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fighting, I was rendered invaluable assistance by the War Department, which detailed six companies of soldiers to assist in checking the fires. Too much praise can not be given the officers and soldiers for the excellent service they rendered during the month they were in the park. And right here at this point I might say that to my mind one of the most important problems with which a park superintendent has to deal is the fighting of forest fires, and I hope to hear this question discussed fully at the conference. I am glad to say that Mr. Graves has fully covered this question, and I know his remarks will be of great value to the superintendents present. The scenic beauty of our national park is enhanced to a great extent by virgin forests of western larch, cedar, white pine, Douglas fir, spruce, and hemlock, and if these forests are destroyed or even scarred it will take many generations to restore them to their present condition. I am glad to be able to say for our park that fortunately the terrific fires that swept within its borders last year were confined to portions not visited by tourists, and the scenic beauty of the park suffered little or no damage. This year we have not had a single fire of any consequence, as extra precautions have been taken and the season has been an unusually wet one. Upon the cessation of the fires in 1910 I turned my attention to trail work. Very little was done, however, along these lines, as the season was about over, and camp was broken September 26.

On the 28th day of April, 1911, I arrived at Belton and immediately commenced active operations, my first step being to secure deeds to the right of way between Belton and Lake McDonald from the owners of patented lands through which the proposed government road was to run. I called a conference of the several landowners, and after much persuasion and difficulty finally secured a right of way 60 feet wide and a little over 2 miles in length through the dense forest extending from the Middle Fork of the Flathead River to the south shore of Lake McDonald. The difficulty I had in securing this right of way, as well as other problems which have arisen by reason of private holdings within our park brings out another qnestion which should be taken up at this conference, viz: "What are we going to do with the private holdings in our national parks?" This question naturally leads us up to the subject of jurisdiction over these patented areas, which is a very important matter. After securing deeds to the right of way and forwarding them to Washington, I commenced work on the road and here is where my real troubles started. The proposed route was almost a quagmire from one end to the other, the trees on the right of way averaging from 12 inches in diameter to 5 feet. First came the cutting of the trees on the right of way, sawing them into merchantable lengths and "skidding" them off the right of way; then the piling and burning of the brush. After this was done, came the next stage of the work, viz, blowing out the stumps. Approximately $1,000 was expended for dynamite and powder for this part of the work, so you can get an idea of the number of stumps. After the stumps

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were blown and the roots pulled out came the building of the subgrade. In order to get the best subgrade obtainable, I found it necessary to take the road down from 18 inches to 5 feet, to say nothing of the numerous fills that had to be made. During the period that we were engaged upon this part of the road incessant rains set in, which made the grading very difficult. Next came the putting down of the cushion over the subgrade, which had been crowned to the proper height, leaving it in proper shape for the crushed rock and dust coat, a coating of 6 inches of crushed rock and gravel going on and then the necesary dust coat. The road proper was made 24 feet wide, leaving 8 feet of a brim on each side, which I propose later to level to the proper grade and plant in grass seed, thus making a border of 8 feet of green grass on each side of the road. At the present time I am glad to say that the road is almost completed.

At the same time that I was engaged on road work I had small crews scattered throughout the mountains cutting and cleaning out old trails and building new ones. A great deal of this work was done by my ranger force, whom I wished to harden up and toughen for real ranger work in the mountains. In addition to my rangers I also had other small crews out doing the same kind of work. While laying out and constructing trails this year I kept two points in mind: First, to have the trails run to the best scenic points of interest, and, second, with a view to a fire guard system, building the trails so that I can quickly throw a fire-fighting force from headquarters to any portion of the park which may be endangered by fire, always keeping in touch with my base of supplies at Lake McDonald.

The following table shows the number of miles of trails cleaned out and built this year:

Trails cleaned out and built, season of 1911.

	Miles.
Old trails cleaned out from foot of Lake McDonald to head of lake	11
New trail from foot of lake to head of lake	1
McGee's Meadow Trail, partly reconstructed	4½
New trail from Ranger Station at head of Lake McDonald to the Falls	2
Cleaned out trail from head of lake to Avalanche Basin	7½
Cleaned out trail from head of lake to Sperry Glacier	6
Cleaned out trail from head of lake to Kootenai Lake	34
Cleaned out Brown's Pass (Bowman Lake trail)	20
New trail Bowman Lake country	6
Cleaned out old trail from boundary line up Boundary Creek	8
Built new trail Belton Hills	15
Built Red Eagle trail	20
Cleaned out Red Eagle trail	10
Cleaned out Gunsight trail (this trail partly rebuilt)	20
New trail up Park Creek	7
Cleaned out Swift Current trail	10
Built approximately 12 miles of trail in Belly River country	12

making a total of 194 miles of trails which are now in fair condition.

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This being the initial year of the park, the trails were hurriedly built to accommodate the tourist travel, which far exceeded our expectations. It is my purpose next year to extend these trails to a width of 8 feet, making the trail proper 4 feet wide, cutting out as much of the heavy grades as possible in order to insure the greatest possible safety to tourists. In this connection I might state that I can use $50,000 on trail work next year to good advantage.

During the time I was engaged on road construction and trail work I had a crew of men out installing a telephone system, and I now have 48 miles of telephone line, which includes 7 miles of a private line, which eventually we will take over. Ultimately I hope to connect up all the more important points by telephone in order to keep in touch with all parts of the park. In some instances use was made of the trees without felling them to string the wire on, but in most cases regulation telephone poles were put in, as for example, the line between Belton and Lake McDonald, where temporary headquarters have been established. The line between Lake McDonald and Logging Creek was installed more for the sake of fire protection than for any other purpose. By means of this line we can keep in touch with the forest ranger stationed on the south side of the Flathead River, who has a better view of the park from his station than my own rangers, and who can thus instantly notify us of any fires breaking out in that portion of the park. On the other hand, my rangers on the north side of the Flathead from their lookouts have an excellent opportunity of detecting fires in certain parts of the national forest, and they in turn have instructions to promptly notify the forest ranger should they see any indications of fire in the national forest. The forest ranger in charge of the Flathead National Forest and I have agreed upon this plan, and I believe such cooperation will prove highly beneficial to the national forest and the park.

Touching upon the matter of rates exacted from concessioners doing business within the confines of the park, the rates fixed for this season are purely tentative and will be adjusted to meet the increase in business. This subject of rates brings out another problem, viz: Should not certain privileges be granted for a longer period than one year? For instance, such concessions as permanent camps, hotel privileges, boat and stage privileges—would it not be advisable to grant these privileges say for a period of five years, fixing the rates on a basis of every 1,000 people, the department maintaining the right to advance the rates to meet the increase in tourist traffic, say on a basis of 1,000? As conditions are now concessioners are inclined to hesitate about investing a great amount of capital without some assurance that their privilege will not be taken away. I simply touch upon this question in order to bring it to the attention of the conference, and will not at this time go into any discussion concerning it. To meet the increase in travel on Lake McDonald I advised Messrs. Denny & Kelly, who have the boat privilege on the lake, to build a larger boat, which they accordingly did, and we now have on

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Lake McDonald, in addition to the number of private boats, three passenger boats, having a carrying capacity all told of 175 persons.

During the summer I built one large dock and one smaller one, which are used by the licensed passenger boats as well as the private boats on the lake.

In conclusion I would state that in taking up the administering of Glacier National Park, which, as you know, is in a formative stage of development, I have kept in mind the following points, to which I shall adhere during the time I am superintendent:

To inaugurate and establish a definite and well-defined policy with respect to the handling of concessioners doing business within the confines of the park.

To develop the park as rapidly as possible consistent with facilities now obtainable, keeping in mind the future day, which I feel is not long distant, when the American traveling public will at last realize that the works of nature of their own country are unsurpassed anywhere in the world and our national parks will come into their own.

The laying out of comprehensive roads and trails to the best scenic portions of the park and the installation of a telephone system in order to insure better supervision and protection from fire, always keeping in mind that the preservation of nature's wonderful handiwork for future generations is the primary object of Congress for setting aside this area as a national playground.

The SECRETARY. We will now hear from Mr. Hall, Superintendent of the Mount Rainier National Park.

ROAD AND TRAIL CONSTRUCTION, WAGON AND AUTOMOBILE TRANSPORTATION, HOTELS AND TENT CAMPS IN THE MOUNT RAINIER NATIONAL PARK, BY EDWARD S. HALL, Superintendent of the Mount Rainier National Park.

ROAD AND TRAIL CONSTRUCTION.

The Government road in the park was opened for travel to the Camp of the Clouds, in Paradise Valley, a distance of 20½ miles from the park entrance, late in the summer of 1910, although not completed at that time. During the present season approximately $10,000 is being expended on the road above Narada Falls, this amount remaining from the original appropriation of $185,000 for its construction.

The road is well located, but in places is narrow and poorly drained. Below Longmire Springs a 2 per cent grade is obtained, and between Longmire Springs and Paradise Valley it exceeds 4 per cent only in a few short stretches.

The bridges are of heavy construction and well built except those over the Tahoma and Kautz Forks, spans of 40 and 30 feet, respectively, and these should be replaced with steel bridges.

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Three and one-half miles of road has been constructed by the Government from the western boundary of the Rainier National Forest to the western boundary of the national park to connect the park road with the county road. This stretch of roadway is in bad repair and has not been brought to the grade intended by the engineer's survey. It should be transferred from the War Department to the Interior Department, placed under the control of the park superintendent, and appropriations made for its upkeep and repair.

The present road from the western boundary of the Rainier National Forest to the Camp of the Clouds, in Paradise Valley, should be widened to 16 feet, and at dangerous points parapets should be constructed to keep stages and automobiles from going off grade. It is estimated that the cost per mile for widening the road to 16 feet would be $3,500, except the section of rock work above the Nisqually Glacier which extends for a distance of 2 miles. This section is through a side cut of rock and hard pan, with the present wall from 12 to 40 feet in height, and with a perpendicular drop on the outside of from 800 to 1,200 feet. About 1,000 feet of the solid rock can be widened by a side chamber for approximately $2.50 per foot, the remainder must be widened from 8 to 10 feet on the bank side and the bank reduced to a slope of one to one to prevent the annual slides which are caused by the swelling of the material on the bank by rain and frost. Under present conditions the ditches fill completely with the first rain. Dry rubble walls can not be maintained on this material on account of the swelling and sloughing off under the foundations.

Dirt for surfacing is very scarce, volcanic ash being used where obtainable. This ash makes a solid and dry covering when mixed with the proper amount of moisture and clay but wears rapidly and is hard to secure in any quantity, as only a thin strata underlies a heavy growth of timber and moss. At a point 11½ miles above Longmire Springs a deposit of clay mixed with sand and gravel has been opened and is being used for surfacing across meadows and rock slides. This is the only suitable soil for surfacing so far found in any quantity.

Unlimited quantities of tough rock for macadam are found along the road in the park. One large slide of columnar basalt, broken ready for the crusher, has 3,000 feet of road constructed through it, and many fine ledges of granite are cut by the road from Nisqually Glacier to the head of Paradise Valley. The value of material found in the park for binding purposes in macadam construction has not been proven, but the cementing properties of the soft rock and hard pan on Ricksecker Point is very noticeable.

It is estimated that by installing a rock-crushing plant in the park the road could be macadamized for $3,000 per mile, and I wish to recommend that $75,000 be expended for widening the road to 16 feet, construct-

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ing parapets at dangerous points, and building steel bridges over the Tahoma and Kautz Forks, and that an additional $70,000 be expended for the purchase of a rock-crushing plant and road outfit, and macadamizing the road its entire length, these estimates not including any improvement to the Government road outside of the park.

A survey has been made by the United States engineers for a road into Indian Henrys Hunting Ground. This proposed road would branch off from the present road 4 miles above Longmire Springs and would be approximately 6 miles long. It would open up another beautiful mountain valley, and it is recommended that an expenditure of $20,000 be made for the construction of this road.

A survey should be made for a complete system of roads in the park, and with this object in view I wish to recommend that an expenditure of $25,000 be made for this purpose. When this survey has been completed Congress should be asked to make an appropriation to cover the cost of constructing the entire road system, available each year in amounts that may be expended during the open season to the best advantage. If this plan is carried out construction work could be started on the north and south sides of the park at the same time, thereby opening the north side for tourist travel.

All Government trails in the park are well located and are in good repair. They are, however, entirely inadequate for its proper patrol and protection, and a system of trails should be laid out and constructed at the earliest possible date. Heavily timbered portions of the park are now all but inaccessible and in the event of fire great difficulty would be experienced in getting a fire fighting crew, with necessary tools and provisions, to these inaccessible points.

A trail should be constructed around the mountain at the lowest practicable elevation, and from this main trail short trails should be built that would reach all parts of the park. With the trails now constructed it is beileved that an expenditure of $10,000 would complete a very satisfactory system of trails, and it is recommeneded that this amount be expended during the season of 1912. This trail system is considered to be the most important and necessary improvement to be made in the park.

Trail construction in the park is difficult and expensive owing to the rough character of the ground, the heavy stand of timber, and the cost of transporting supplies.

WAGON AND AUTOMOBILE TRANSPORTATION.

The Tacoma Carriage & Baggage Transfer Co. operate the principal stage line in the park, using 28 head of horses, three 4-seated and four 3-seated stages from Longmire Springs to Paradise Valley, and between Ashford and Longmire Springs three 18-passenger automobile stages, one

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automobile for transporting express and baggage, and a freight wagon. The automobile stages have not been found to be entirely satisfactory owing to the rough roads over which they are operated.

This company conducts its business in a satisfactory manner and the equipment is as good as may be expected considering that its permit to operate in the park is granted only from year to year.

George B. Hall conducts a livery business at Longmire Springs and uses 37 saddle and pack horses and 13 driving horses. He operates three 3-seated stage wagons between Longmire Springs and Paradise Valley, gives satisfactory service, and has had all the business he could handle during the present season.

Six persons have been granted permits for the use of "rent automobiles" in the park. These machines are operated between Tacoma and Nisqually Glacier, and will average perhaps 15 trips each during the season. They are not run on schedule and make trips only when a load can be secured.

Private automobile travel has been very heavy during the present season, 1,006 machines having entered the park for the season to September 5. A fee of $5 is charged for a season permit for each machine, and the revenue from this source to September 5 has been $3,750. To this date 9,513 persons have passed in over the Government road.

The rules and regulations governing the admission of automobiles into the park are rigidly enforced, and the disposition of most owners is to adhere to them without question. No automobile accidents of a serious nature have occurred in the park.

HOTELS AND TENT CAMPS.

The hotels and tent camps have been entirely inadequate to accommodate tourists visiting the park during the present season.

The National Park Inn is a three-story building 125 feet long by 32 feet wide, with 36 rooms, and by using 86 tents in connection will accommodate 225 guests. This hotel was constructed during the spring of 1906 and was opened for business July 1 of that year. It is not properly constructed for a first-class hotel, and it is understood that the company contemplates erecting a more modern building before the opening of another season. A log clubhouse has recently been constructed near the main building. It is attractive in appearance and is used as a recreation hall by the hotel guests.

The tents used in connection with the hotel have board floors and walls, are equipped with doors, electric lighted, and are well furnished. The hotel table is supplied from the commissary of the Chicago, Milwaukee & Puget Sound Railway at Tacoma and is satisfactory. A complete refrigerating plant is operated in connection with the hotel.

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The Longmire Hotel, maintained on the Longmire patented tract, is a small frame building with 12 rooms. Tents are used in connection, and it is operated as a second-class hostelry and does a large business.

At Paradise Valley, a distance of 6½ miles by trail and 14 miles by road from Longmire Springs, a tent camp with 60 tents is maintained. This camp is run at its full capacity during the months of July and August.

At Indian Henrys Hunting Ground, a distance of 7 miles by trail from Longmire Springs, a tent camp with 15 tents is maintained, and does a good business.

These two tent camps are of a second-class order and are not often patronized by persons who expect first-class accommodations, and it is believed that the lack of first-class tent camps or hotels in these two mountain valleys reduces the aggregate number of persons visiting and remaining in the park many hundred each year.

The sanitary conditions at these camps are not satisfactory, and this defect can only be remedied by the construction of a sewer system or septic tanks.

The SECRETARY. Mr. Richard Wright will now tell us something about the Mesa Verde National Park.

THE MESA VERDE NATIONAL PARK; ITS PAST, PRESENT, AND FUTURE, BY RICHARD WRIGHT, Acting Superintendent, Mesa Verde National Park.

The Mesa Verde National Park was created at a comparatively recent date; that is, by the act of June 29, 1906. It is not a large reservation, containing but 66 square miles. It is situated in the extreme southwestern part of Colorado, adjoining the northern boundary of the Southern Ute Indian Reservation.

The park was established for the preservation of an extensive and remarkable group of cliff dwellings, the habitations of a tribe of prehistoric men of the stone age. The cliff dwellers themselves were small of stature, peaceable in character, dwelt in communities for mutual protection and were skillful and industrious to a high degree. The archæologists tell us that from the mummies which have been found in the cliff houses these human beings were dolicocephalic, or narrow headed, in this respect differing markedly from the local Indians, who are brachycephalic, or broad headed. On account of the diminutive stature of these men they did not excel in combat or warfare, and hence were obliged to fortify themselves in the high and almost inaccessible recesses of the cliffs. That they were peaceable and industrious is shown by the remains of the lasting and artistic pottery they made, the tracts

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they cultivated on the level mesas above the cliffs, and the care and skill with which their dwellings were constructed. That their age was a stone era is shown by the absence of any metals from their abodes, and the presence of exclusively stone implements, such as grinders, hammers, arrowheads, and the like. That they dwelt in communities is demonstrated by the construction and architecture of their buildings, their dwellings containing hundreds of individual living rooms and chambers, and larger rooms, called kivas, which were used for assembling places, either for the purpose of worship, councils, or ceremonies.

These ancient ruins are spectacular and impressive in appearance, being constructed in the recesses of the solid cliffs, walled about like ancient fortresses and crowned with towers and bastions like castles of the Middle Ages.

Little is known as to the exact era of the cliff dwellers' existence. Dr. Hewitt, a leading archæologist, has said:

> The time element in the history of these ancient groups is obscure. We know that the cliff cities were in ruins at the time of the coming of the Spaniards. Any statement of the date of their abandonment must be largely conjectural. If we were to venture such a conjecture, it would be to suggest from 8 to 10 centuries ago as the most recent date of occupation in the localities above described.

The greatest problem which has confronted the department in the past in connection with the development of the Mesa Verde National Park has been the transportation of tourists from Mancos, the nearest railroad point, to the cliff dwellings, a total distance of about 30 miles. The Mesa Verde proper (meaning green plateau) is an immense and intensely interesting geological formation, consisting of tinted rim rock, huge and precipitous slopes of sand and shale, with rolling hills of verdure on the top. The cliff dwellings are found in the huge canyons located in the extreme southern part of the park and in the sections of the Southern Ute Indian Reservation lying directly south of the center of the park and within the 5-mile strip over which we have jurisdiction.

The mesa rises almost abruptly from the plain to a height of about 2,000 feet. When once on top, travel is comparatively easy. The problem we have had to meet is the construction of a highway so graded that the top of the mesa can be reached by a passable wagon road.

The line of road was surveyed to wind around the foothills at Point Lookout, the northern extremity of the park, thence up the west side of the mesa through the shale to a saddle at the head of what is known as Moorefield Canyon. The road then turns into Moorefield Canyon, out again on the side of the mesa, and then into the head of Prater Canyon. At intervals along this route the roadbed is necessarily cut into the shale. This substance is a sort of decomposed or disintegrated rock which can easily be crushed in the fingers and wholly lacks substance or any degree of resistance to either wind or water erosion. Those portions of the road which run through this shale are continually caving away or being blocked with slides from above, caused by rains. The only remedy for this, in my opinion, is the widening of the roadbed at these points

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at least five feet, surfacing with crushed rock, cribbing with stone or timber, where necessary on the outside edge, and the building of solid retaining walls on the inner side. This strengthening of the road must be done if we are to have a safe and substantial road for tourists. We must have the money to do the work.

At the end of this route—that is, at the head of Prater Canyon, where the road leaves the slope and runs on top of the mesa—this difficulty ceases. The contractor who has been working on the road this summer has built 3½ miles of good road along the line of survey southward toward the ruins. We need further road construction for approximately 6 miles in order to connect up with that portion heretofore built northward from the ruins along Chapins' Mesa. When this work is finished the entire route will be open to wagons and carriages, and if we can obtain sufficient money to properly rebuild the shale road the grade will permit automobile traffic.

The principal ruins, as I have stated, are situated south of the Indian reservation line, outside of the park proper but within the five-miles strip, over which we have jurisdiction. Through the efforts of assistant Commissioner of Indian Affairs Abbott, Maj. McLaughlin, and Inspector Linnen, a treaty was entered into last spring with the Southern Utes whereunder the Government takes a tract lying directly south of the park and embracing the most important ruins in exchange for certain public lands suitable for grazing south of Ute Mountain and far west of the park. I am informed, however, by Mr. R. W. Berry, Geological Survey topographer, who has been engaged on a map of the park, that the lines run southward by these gentlemen to include the ruins omit the inclusion of Balcony House, one of the most important structures. This was due, no doubt, to the inaccurate composition of the Land Office map of the park. This omission should be remedied by such action as the department may deem advisable.

The future promises well for the Mesa Verde National Park provided we can secure a congressional appropriation sufficient for its proper development. The present route to the ruins is by a horseback trail. This trail is fearfully rough and precipitous, and it seems almost unnecessary to refer to the utter impossibility of promoting heavy tourist travel to the ruins under these circumstances.

I have asked in my estimate for a sum of approximately $28,000 for road construction. Compared with the amounts asked for by the custodians of some of the other national parks, this amount seems modest indeed.

The Denver & Rio Grande Railroad has tentatively promised that excursion rates to the park will be made as soon as the main wagon road is completed and the running of excursion trains thereby justified.

Upon the completion of the various improvements which we contemplate, such as the completion of the main wagon road, telephone lines, custodian's house, artesian wells, etc., we have every just reason to

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believe that tourist traffic will come to the Mesa Verde in numbers hitherto undreamed of. The park is rached by the Denver & Rio Grande Southern, a narrow gauge railroad leading into Mancos by two routes, the northern and the southern. The southern route, which, in my opinion, is the best one for eastern travel, comes down from Denver by way of Pueblo, Alamosa, and Durango. At present visitors must stop over night in Durango and leave for Mancos, a three hours' journey, late the following morning. I think we will have no trouble in persuading the railroad authorities to run the cliff-dwellings excursion trains right through Durango to reach Mancos before dark during the summer season.

The travel which will come over the northern route will bring tourists down from Grand Junction and points west by way of Telluride and Montrose.

To my mind the Mesa Verde Park has wonderful possibilities for development. If properly provided for and effectively administered it should rank among the most important of the national reservations, a position which its quaint and mvstic contents, its natural beauty, and its historical value fully justifies.

The SECRETARY. Gentlemen, I think from the character of this and the previous report there is really no useful purpose to be subserved in reading reports concerning which there is no occasion for discussion. I mean the detailed reports on particular parks will be quite as useful in the record as they will be to simply read them to this audience. If there are any of the papers, however, that are of a character which will lead to discussion by the entire body that would be different.

Assistant Secretary THOMPSON. Before this body finally adjourns, I think it proper to show our appreciation in some formal manner of the the entertainment we have had at the various magnificent hotels throughout the park and also of the courtesies extended to us by the Yellowstone Park Hotel Association, the Yellowstone Park Transportation Co. and the Yellowstone & Monida Stage Co. They have by their kindness and courtesy added materially to the comforts and success of this gathering. I offer therefore for your consideration the following resolution:

Be it resolved by the conference of National Park Superintendents now in session at the the Canyon Hotel in the Yellowstone National Park, That the hearty thanks and sincere appreciation on the part of this gathering are hereby extended to the Yellowstone Park Hotel Association, the Yellowstone Park Transportation Co., the Yellowstone & Monida Stage Co., and in particular to Messrs. H. W. Child and F. J. Haynes, for the uniformly kind and courteous treatment and consideration accorded by them to the officers of the Interior Department here assembled and to all other members of the conference.

Mr. E. M. SUNDERLAND. As I am the only one who made a remark which could be construed as a criticism of this magnificent house, it gives me great pleasure to second the motion.

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The SECRETARY. I thought it would be wise not to have any formal resolutions, but I think this resolution would be a proper one now. I assume the intention was to include all those who have contributed to our pleasure. Are there any remarks on this resolution? If not, all of those in favor of it will signify by rising. (Resolution unanimously carried.)

Mr. STEEL. Before this meeting adjourns I want as one to express my gratitude to the Secretary of the Interior for the action he has taken in bringing this conference to pass, which has advanced the cause of national parks ten years since yesterday morning, and I would like to ask that all delegates rise to show their appreciation to the Honorable the Secretary.

The SECRETARY. I thank you. I want to say, in concluding, that perhaps mention should be made of those papers that have not been read or otherwise referred to. I want to say that Mr. Arant, superintendent Crater Lake National Park, is here, as well as Maj. Hallock, of the Hot Springs Reservation. I wanted merely to call attention to those papers that have not been read. Now, I think there is nothing that can be said in conclusion of what I regard as an exceedingly successful conference. I want to express my appreciation of the attendance of those who have come here—those who are connected with the service, those who have business relations with it, and those whose interests are indirect. I think we can all congratulate ourselves on this the first conference on national parks, and with that I shall declare the conference adjourned.

PAPERS PREPARED FOR THE CONFERENCE.

THE MEDICAL SIDE OF THE HOT SPRINGS RESERVATION, BY MAJOR HARRY M. HALLOCK, Medical Director.

The hot springs of Arkansas are 44 in number. They are located in a narrow ravine on the western slope of Hot Springs Mountain, which is a part of the Ouachita Range and an offshoot from the Ozark System. They are practically in the city of Hot Springs, which is 50 miles southwest from Little Rock and has an elevation of 600 feet above the level of the sea.

The water is remarkable for its purity and for the small amount of mineral matter it contains. Its temperature, as determined for the different springs, varies between 97° and 147° F. It is radio-active, and the beneficial results obtained from its use are now largely attributed to this fact.

The baths produce a reaction accompanied by an elevation of body temperature, accelerated heart action, with diminished blood pressure in the arteries, and a stimulation of the nutritive changes in the tissue cells, especially those composing the organs of elimination and those concerned in the formation of the blood. Combined with the internal administration of the water, they may reasonably be expected to afford relief in

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gout or rheumatism after the acute or inflammatory stage; in neuralgia when dependent upon gout, rheumatism, malaria, or metallic poisoning; in the early stages of chronic Bright's disease, in catarrhal conditions of the gall bladder, in certain forms of disease of the pelvic organs, and in sterility in women, in chronic malaria, alcoholism, and drug addictions; in many chronic skin diseases; in some forms of anemia; in syphilis; in gonorrheal rheumatism, in toxemias and conditions of defective elimination; and in some forms of cardio-vascular disease with increased tension in the blood vessels. The baths are contra-indicated in tuberculosis of the throat and lungs and in all forms of cancer.

A second great resource of Hot Springs is its unusually fine climate, which makes out-of-door life not only possible, but enjoyable almost every day in the year. Overworked business and professional men and all who need rest and recuperation find in the reservation walks and drives, in visiting the many interesting points in the vicinity, on the golf course, and at the country club, forms of recreation that have a powerful influence in the restoration of health and strength. Much greater development of these features, however, such as the improvement of streets and roads, the erection of a casino for the maintenance of the better class of amusements and entertainments, as well as the maintenance of a street-cleaning department, and a larger police force, is essential if Hot Springs is to be fully developed as a spa.

The reputation of the locality as a health resort dates back to legendary times. It is known that the Indians brought their sick here in the belief that the Great Spirit was present in the water. It is said that even in those days there was strife for its control which finally terminated in the establishment of a neutral zone and a recognition of the common right of all tribes to participate in the benefits to be derived from its use. De Soto is believed to have bathed here in 1541. The earliest white settlement was made about the year 1800. From that time to the present day, faith in the restorative and curative properties of the water has steadily increased. By the year 1832 the belief had become so strong and so universal that Congress passed an act reserving four sections of land with the hot springs in the center, thus establishing the first national park. The purposes of this act were to secure to the people the use of the water free from commercial exploitation, and to provide room for the development of an adjacent settlement under the same government as the springs, for the safe harboring of those who might come for treatment. The wisdom and foresight in providing for a single government has been amply demonstrated by subsequent events.

In the year 1880 the Federal Government relinquished control over a large part of the original reservation, and upon this territory contiguous to the springs the settlement anticipated by the act of 1832 has been made, and is now represented by a city of 15,000 inhabitants. The divided jurisdiction resulting from this session is largely responsible for

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the existence and continuance of certain conditions and practices that have a marked influence in lessening the benefits to be derived from treatment here, and for the failure to provide those adjuvants to the baths which are important factors in the complete development of a health resort. The objectionable features referred to are the various forms of graft (commonly known as "drumming"), gambling, and an excessive number of saloons, with other usually concomitant evils.

Commercialism is the basis of drumming. It has been practiced for years. It has been tolerated by the community and sanctioned by influential citizens. It is essentially different from the solicitation of the commercial salesman. It is practiced on the unsuspecting invalid of limited means, who is unable to work, and who often comes believing that the advertised control of the Federal Government extends to all features of the resort and is absolute and complete. In its ultra refinement the system of "fruiting," as formerly practiced, aimed to convey to an accomplice definite knowledge of the amount of money in a patient's possession, that it might all be secured at once. This information was conveyed by mentioning to a confederate in the course of ordinary conversation, the name of some common fruit, each variety representing a given sum which the unsuspecting patient had told the drummer he had provided to defray the expenses of his sojourn. Patients deprived of their money within a few days of their arrival have been forced to leave the town before they were able to test the cure.

This entire practice is founded upon deceit and falsification. It has been relied upon to procure patronage to the exclusion of that form of competition based on the best service. It has been a fruitful source of grievance, and at least indirectly, of acts of lawlessness and of violence. It has caused large numbers of patients to spread in their home neighborhoods unfavorable reports of local conditions, and it has impaired the confidence of the medical profession throughout the country in the benefits to be derived from treatment at the springs. While it is not so frequently or so openly practiced as formerly, it still persists, and will tend to continue so long as the financial returns of the bath houses, the druggists, and the doctors are based upon the number of patients treated. While it is possible to devise means for its reasonably satisfactory control, its extinction can only be expected through a development of the ethical sense of all who profit by the practice, or by the removal of the incentive out of which it grows.

The only physicians who are allowed to prescribe the water of the springs are those licensed practitioners of the State of Arkansas who have been examined by the Federal board of medical examiners appointed by the Secretary of the Interior. While there are a number of physicians of the highest professional attainments and moral standing engaged in the practice of medicine in Hot Springs, there are others who

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disregard the ethics of the profession. Quacks, charlatans, and venders of secret remedies thrive on the credulity of the visitor.

The evil effects of gambling houses and of an excessive number of saloons are too well realized to require comment. It is sufficient to say that they are tolerated, if not encouraged, because the city needs the revenue that is derived from them. The expenses of the local government last year were $119,291.43. There was a deficit of $30,397.90. The principal sources of revenue were, from taxation, $33,380.52; from saloon licenses, $36,800; from police-court fines and gambling, $15,545.25. Eighty per cent of the taxes go to the State, county, and schools, leaving but 20 per cent for city purposes proper. There is no prospect for immediate betterment, and greatly needed municipal improvements can not be made. Endeavors to increase the city revenues are subject to diverging influences. A business tax is favored by local interests, that the money so collected may be spent within the city, while the State inclines to an increase in general taxation to augment the State revenues.

At watering places abroad, where the same government exercises jurisdiction over both the springs and the adjacent municipality, it is customary to tax the visitor for the support of public-utility services, for it has long been recognized that with the large nontaxable floating population of a "cure" it is impracticable to maintain satisfactory civic conditions, to enforce law and order, and to provide the other features of a health resort on the same basis of revenue that pertains to other cities. It would appear practicable to adopt this system here; or increased revenue could be secured by diverting a part of the proceeds from the baths were it not for the divided jurisdiction and the leasing of the water privileges to private interests.

A marked and general awakening has occurred in all civilized countries within the last decade or two, finding expression through local, State, national, and international organizations, as well as through the public press, to the importance of hygiene, sanitation, and preventive medicine. Knowledge of these subjects has been so widely spread that the average citizen has come to more fully realize the value of scientific methods in medicine and the fact that many diseases are preventable. He is more critical and exacting, and has increasing fear of contracting disease wherever the laws of sanitation are not enforced. For these reasons bathhouse service that was acceptable a few years ago is no longer so.

The general conditions surrounding the visitor coming to Hot Springs gave rise to so much dissatisfaction and to so many complaints that within the past few years four separate reports by specially qualified commissioners have been prepared by direction of the Secretary of the Interior with a view to determining what steps were practicable for bettering both the treatment and the environment. In each the conditions already referred to were treated at length, as was also the service of the bathhouses, and the recommendation made that the medical and sanitary

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work be placed directly under medical supervision. As a result of these recommendations and of a realization of the essentially medical character of the service the office of medical director was created September last, with the following duties:

(1) Full supervision of sanitation, hygiene, and hydrotherapy—in short, all that pertains to the bathing of patients in the leased bathhouses both on and off the reservation.

(2) Full charge of the Government free bathhouse and the employees therein.

(3) Maintenance of a clinic for the education of bathhouse operators and their attendants.

(4) Determination of the fitness of all attendants, physically and otherwise, for employment in bathhouses, both those operated by lessees and the Government bathhouse.

The work so far has been formative and constructive. Matters of sanitation and hygiene have been dealt with by inspection of the bathhouses and by class instruction of the attendants. The principles of sanitation have been applied in approving plans for the erection of new bathhouses and in determining what improvements shall be required in the old houses on the renewal of leases; in devising means for a sanitary laundry service, and for the cooling of hot water without contamination; in abolishing sources of infection, and in many minor details.

Many of the bathhouses are old, poorly planned, cheaply constructed, and insanitary. Some should be condemned, others remodeled and equipped with hydrotherapeutic apparatus and modern ventilating, heating, and plumbing systems. The windows and doors should be screened and the cellars and courts cemented.

The feature of bathhouse administration most open to criticism is the management. A foreman is provided for a gang of workmen, a head waiter for a hotel dining room, and a floorwalker for a dry-goods store; but the bathing of patients, which constitutes the service that forms the basis of the lease, has been practically intrusted to the attendants, while the manager, who is the only person in a supervisory capacity, is occupied at his desk with matters of administration of a totally different character. Nearly all complaints and unfavorable reports, both from physicians and from patients, relating to the bathhouse service in any way may be traced to this source.

The bath attendants, about 200 in number, although expected to carry out the bathing directions of physicians and to display reasonable intelligence in their ministrations to the sick, have heretofore never received any instructions in their duties from a competent source, nor have they been required to qualify in any way. They are all negroes. Upon examination a few were found to be illiterate and unable to read the bathing directions, while others were so nearly so that it is doubtful if they could render intelligent service. The majority, however, have a common-school education and are appreciative of the benefits to be

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derived from the department's policy of affording them an opportunity to fit themselves for their work. Class instruction has been given to 178 attendants, with the result that 119 have been accepted and granted certificates of qualification authorizing their employment for the period of one year in any of the bathhouses receiving water from the hot springs. Fifty-nine have been rejected for varying degrees of illiteracy, alcoholism, lack of attention to duty, and persistent uncleanliness in person and clothing. This class work marks the first step in the development of a corps of selected and trained attendants. It will require considerable time to produce satisfactory results, but by persistently following out a policy of instruction for those who are willing to learn, and the elimination of those who are unfit, the efficiency of the service will ultimately be greatly increased.

By the act of December 16, 1878, free baths for the indigent were authorized, and in 1890 Congress made an appropriation for the erection of the present free bathhouse. Since it has been in use nearly 4,000,000 baths have been administered. The action of Congress practically amounted to an invitation to the sick to come to the springs for treatment, and they have come and are still continuing to come from every part of the country. The building is utterly unfitted for its purpose. It is inadequate in size, and only accommodates the patients by the use of pools, in which many sick bathe at the same time, and by reason of the fact that no space is devoted to many necessary adjuncts, such as hydrotherapeutic apparatus, examining rooms, a dispensary, an emergency ward, and office accommodations. The building is insanitary and in need of extensive repairs. It can not possibly be made into what would, in any just degree, represent the desire of Congress or the ability of the Government. A new, modern house, equipped with the latest and most approved facilities, is imperatively needed. Such an establishment under Government control would have a marked influence in bringing about improved conditions in the service of all the bathhouses.

Contact with the medical profession personally, and through the County Medical Society on the one hand, and with the bathhouse interests and the Business Men's League on the other, combined with the work as secretary of the Federal Registration Board, and the treatment of many patients at the Government free bathhouse, has afforded an unusual opportunity to view from different points the many diverging interests and opinions, and to note the deleterious effects of commercialism in a humane profession.

Public faith in the therapeutic value of the water itself has never wavered and despite unfavorable conditions the popularity of the resort has increased from year to year. This is a sound argument for bettering the service. An unusually strong foundation unquestionably exists in the water, in the climate, and in the faith of the people, for the development of a great health resort the equal of any in the world. A judicious

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and far sighted policy successfully carried out is all that is required. With better service and conditions the resort would be visited by a constantly increasing number of foreigners, as places of like character abroad are now patronized by Americans. Symptomatic treatment of existing evils and objectionable conditions will result in improvement, but there are certain fundamental causes for their existence, the removal of which would be marked by a great and immediate advance. Development in certain lines already referred to can only be effected through legislation. It may be impracticable at the present time to adopt such radical changes as would be necessary to produce ideal conditions, but there is value in having an ideal, and its consummation is worthy of untiring effort.

The improvements that are not only necessary, but entirely practicable, can not be expected within a day, or within a year. They will necessarily require time, patience, and the constant and intelligent study of conditions as they must and will change. Thoroughly satisfactory results must await the continuing development of a public opinion on the part of all interested, that the best is not only none too good, but that it has the promise and the certainty of the most assured and permanent financial returns.

As an invitation has been extended to present the more difficult problems of administration for consideration at this conference, it is suggested that the following subjects might be discussed in connection with the affairs of Hot Springs, all of which are necessarily closely related to and vitally involved in the proper treatment of the sick.

(1) Federal jurisdiction over the city of Hot Springs.

(2) Government ownership and operation of the baths.

(3) The extinction or effective control of drumming.

(4) The procuring of funds for the development in the city of Hot Springs of the usual adjuncts to treatment at a spa.

(5) The elimination of gambling and objectionable resorts.

(6) The appointment of a health officer whose whole time may be given to the work of his office, and of a sanitary squad for the city of Hot Springs.

(7) The establishment of an emergency hospital service.

CONSTRUCTION WORK IN THE YOSEMITE NATIONAL PARK, BY D. A. SHERFEY, Resident Engineer.

As a preliminary to the subjects which have been assigned to me, I desire to speak of the general conditions governing construction work in the Yosemite National Park, some of which may be peculiar to Yosemite, but I imagine that many of them are common to more than two of the national parks.

Laborers are mostly drawn from the small mining towns in the vicinity of the park, there being no permanent community of laboring people

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within the park, because of the impossibility of renting or building homes on Government ground. Hence the force is of a transient nature, and consists largely of unmarried men or those who have left their families to seek work at a distance. Ordinarily there are enough of these men to meet the needs of the park, but in case of a good demand for labor outside or an extraordinary demand within the park it becomes necessary to engage men from Merced or other towns of the San Joaquin Valley, and to pay the expense of their transportation to Yosemite, which amounts to about $10 per man one way. It is the custom of the most of our laborers to come into the park at the opening up of the work, usually afoot, and to leave before the winter weather sets in. They are housed in tents, which may be rented of the local store. They board themselves, there being no public boarding house where a laboring man can obtain meals within his means. These conditions do not operate to obtain or hold either a high class of men or efficient service. Most of them make good common laborers or teamsters, and a few who have been miners are quite skilled in rough rock work and the use of explosives. Common labor is paid $2.50 per day; teamsters and rock and powder men receive $3 per day; foremen of gangs get $3.50 per day.

The force of skilled labor immediately available consists of two carpenters, and only one of these remains in the park throughout the year. It is necessary to send at least 90 miles for brick masons, stonemasons, tinners, machinists, boiler makers, painters, plumbers, etc. These men usually demand high wages and their expenses for work done in Yosemite. And to avoid this expense, most all kinds of work other than carpenter work is done with common labor and often at the expense of good workmanship.

Construction materials are bought by proposals, and are usually furnished by firms in San Francisco. San Francisco depends upon the East for manufactured articles, and Yosemite is some 220 miles from San Francisco. This distance from the market, together with the method of purchase, prove always an embarrassment, and sometimes a veritable obstacle to the prosecution of a piece of construction work. The statements of bidding firms as to the time of delivery can not always be depended upon, and often after the acceptance of a bid, and perhaps the delivery of a part of the order, it is learned that the rest can not be delivered until the next ship comes into port. It is not possible for one remaining in Yosemite to be well enough posted on the conditions of the San Francisco market to make designs and plans calling for those materials which can be immediately delivered.

The Yosemite Valley Railroad has its terminal at El Portal, about three-fourths of a mile from the park boundary. The first-class freight rate over this railroad and its connecting lines from San Francisco to El Portal is 96 cents per 100 pounds. The Government does its own

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hauling from El Portal to Yosemite, a distance of 14 miles, at a cost of about $6 per ton, which makes the cost of the transportation of a ton of first-class freight from San Francisco to Yosemite of about $25, with other classes in proportion. Because of this high freight rate it is desirable to buy in car load lots, thereby saving both in freight and price. A large stock of the common construction materials should be kept on hand. The practice of making separate purchases for each separate allotment should be avoided in as much as it is possible.

As it is not practical to meet each shipment at El Portal, unpack it, and inspect it before hauling to Yosemite, unsatisfactory materials are often delivered at Yosemite, and if rejected the Government is out the cost of unloading and hauling, and must put up with the inconvenience and delay of awaiting a new shipment from San Francisco.

The working season of about 8 months begins in April and ends in December. The best months are July, August, and September, but because of the fiscal year beginning on July 1 a large job done under a congressional appropriation must be started after the working season is one-half over, stopped during the winter, and started again in the spring with a new organization, and then rushed that it may be completed before the end of that fiscal year.

Yearly appropriations have not been large enough to attempt to complete within one year a job of even ordinary magnitude, so that but a small piece of road work has to be strung out over a number of years. These stops and starting again with new organizations have to be repeated year after year. Often because of limited appropriations an important improvement must be stopped and held in abeyance due to the emergency of some other project.

Most of the work done in Yosemite is by day labor, very little contract work having been attempted. As a general proposition I am in favor of the contract system of doing public works, and hope it may become more the practice in Yosemite. It is almost a necessity to enter into contracts for those works requiring skill in special lines. During this season a rock-crushing plant and a water wheel have been installed in a most satisfactory manner. Because of the conditions I have heretofore mentioned, I am strongly of the opinion that any project requiring the use of materials that must be shipped in can be more advantageously handled by a contractor who has an office close to the supplying market than by the park officials in Yosemite, who must handle their business through the mails with the lowest bidder, whose reputation and business habits are unknown.

Yosemite National Park is almost an undeveloped field so far as roads are concerned. Nine-tenths of the points of interest are accessible only by horseback over rough mountain trails and some are difficult of access even by these means. As the parks are set aside for the enjoyment and

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pleasure of the public it is the duty of the Government to make easy the means of access to all places that a tourist would be invited to go. The United States Government has done no original road work in the Yosemite National Park, its only work of this nature has been the improvement and maintenance of existing highways. All of the present roads were at first built by private enterprise, and two of the most important ones are at this time toll roads. It seems to me that in a public park a toll road is an anomaly. I hope that the time is not far away when all private-owned roads in Yosemite will be taken over by the Government.

I would recommend that a complete road survey of a road system through the entire park be made. These surveys should be thorough, consisting of profiles, cross sections, lines permanently staked out, and adjacent topography. Investigations of available road material should be made, bridges and culverts should be designed, and an estimate of cost made. After this system has been laid out and approved by the proper authorities, construction should be carried on systematically and continuously from year to year until all are completed. Appropriations should be ample and should not be confined to any one fiscal year.

Although the principles of good road construction are general and well known, yet each locality presents its peculiar problem, and this problem in Yosemite is not a simple one. There is rock everywhere, but little of it is suitable for road metal. We have found but one place in the Yosemite Valley where a hard rock can be obtained. A No. 4 Gates gyratory crusher has been installed at this point, and we are just getting into position where we hope to build a system of first-class roads on the floor of the valley. This rock is very hard and consists of an immense slide of bowlders, which are to be broken by blasting into sizes suitable for the admission to the crusher. The crusher is driven by electric power conveyed over a transmission line 7½ miles in length from the Yosemite Valley lighting plant. The method of construction at present adopted is that known as the Telford road, which has been selected, not because of any preference for the Telford construction, but for economical reasons. Rocks of a suitable size for the Telford base can be gathered at most places along the foot of the walls of the valley and conveyed to the road with an average haul of about one-half mile. These rocks while suitable for a bottom course are too soft to make a good wearing surface. The surfacing metal is to be obtained from the rock crusher with an average haul of about 4 miles. It is hoped that we can build these roads at an average cost of $15,000 per mile. The greater portion of this cost is due to high cost of maintaining teams in Yosemite and the length of haul. It would be economy to adopt some method of power hauling, but the present bridges across the Merced River are too light for this purpose.

The roads we are now building are 22 feet in width, and are finished along the edges with a curb of large bowlders. This furnishes a very

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pleasing road, suitable to the surroundings. As the floor of the valley is comparatively level and we are improving an old road there is very little grading to be done.

The roads leading into and out of the valley all have heavy grades, and in many places have almost perpendicular precipices both above and below the roadbed. These roads are generally so narrow that teams pass with difficulty. I believe that these roads should be made wider and safer. This means heavy and expensive construction, which may run as high as $30,000 to $40,000 per mile. The magnitude of an extensive road-building project in Yosemite National Park would justify the organization of a permanent road-building force and equipment. Effort should be made to keep together a trained body of men through the work.

The present road-building equipment is entirely inadequate, especially so in reference to transportation. It is the present custom to rent horses and wagons for this work. We are now hiring horses at $10 per head per month. Forage costs about 50 cents per head per day.

The national parks are places where nature has produced its grandest and most beautiful works, and I can not think of any excuse that justifies man to erect in such places buildings of ugly architecture and poor construction. This is the condition to-day in Yosemite. There is scarcely a building in the Yosemite Valley that even approaches the standards of good construction and the architecture of most of them is far from being artistic. Even those buildings that have been built by the United States Government are far below the standards of Government construction, due to the lack of sufficient funds. The only hotel in the Yosemite Valley was built some 30 years ago. It is a frame structure, a fire trap, without modern conveniences, and ill suited to the purpose. The buildings used by concessioners were constructed before the United States obtained control of the valley, and are of the cheapest and most flimsy construction.

Yosemite partakes of the nature of a small municipality. It has its water system, electric lighting system, and should have a sewer system. In order that it may be consistently and properly developed a comprehensive scheme should be prepared that would provide for reasonable growth in the needs of the valley. Plans of roads, walks, water pipes, sewers, pole lines, telephone lines, and building sites should be made and after approval by the department should be followed in all future work. A high standard of design and construction should be adopted. In reference to those buildings used by concessioners I am inclined to the opinion that it would be much better for the Government to construct and maintain the buildings and rent them to the concessioner.

The needs of the Government in Yosemite in the building line are extensive. There should be an administration building, a superintendent's residence, quarters for the permanent employees, laborers' quarters, storehouses, machine shop, workshops, blacksmith's shop, wagon sheds,

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and modern stables. All should be of good construction and a pleasing style of architecture.

We have in Yosemite an electric lighting system. Current is furnished by two 75-kilowatt two-phase generators operating at 2,300 volts and driven by two Pelton wheels. The generators are of an out-of-date type but in good condition, and are giving good service and have a sufficient capacity to meet the needs of the park for some years to come unless an unexpected demand for electric power should develop. Our present lighting load is at its maximum about one-third the capacity of the plant. We have just replaced one of the water wheels with a new one of more modern construction, and should replace the other one as soon as funds are available. The transmission lines are in fair condition with the exception of some of the branch lines that were poorly constructed. All are overhead lines, and it would be very desirable to place them underground both for esthetic reasons and for ease of maintenance during heavy snow storms. The intake and penstock of the plant have been lately improved and are now in good condition. This plant furnishes power for driving the rock crusher and for driving two pumps that deliver water to tanks for use in road sprinkling.

Current is furnished to concessioners at the following rates: From April 1 to October 31 for 79 lamps or less, 66⅔ cents per month per 16-candle-power lamp; for 80 lamps, $50 per month; 81 to 160 lamps, 50 cents each; 161 to 240 lamps, 40 cents each; all above 240 lamps, 30 cents each. For the other months of the year the rate is 33⅓ cents per lamp per month. These rates are said to be rather high and the concessioners use as few lights as possible. There has been but little yearly increase in the number of lights used. We have under consideration the installation of a meter system instead of the above flat-rate system. It is hoped that such a method will induce the concessioners to adopt more elaborate schemes of illumination, lower the rates, and increase the revenues of the plant. Fuel in Yosemite is becoming more scarce and expensive each year, and it may be possible to develop a use for electricity for heating and cooking purposes. We are fortunate in having two good electricians employed throughout the year. All ordinary work of installing and wiring is attended to by them. Large installations of new equipment is done under contract.

THE SEQUOIA AND GENERAL GRANT NATIONAL PARKS, BY WALTER FRY, Ranger.

CREATION AND SITUATION.

The Sequoia National Park was created by act of Congress approved September 25, 1890, and October 1, 1890, and the General Grant National Park was created by act of Congress approved October 1, 1890. The Sequoia Park is situated in the county of Tulare, State of California, and

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the General Grant Park is situated in the counties of Tulare and Fresno, of the same State.

OBJECT FOR WHICH CREATED.

The principal object for which these parks were created was for the preservation of the wonderful forests of "Big Trees," *Sequoia gigantea*, they contained. The trees of which also furnished an important factor in their naming, the Sequoia Park being named after its magnificent groves, and the General Grant Park was given the name because of the General Grant Tree contained therein, so widely known for its size and beauty.

TOPOGRAPHY AND AREA.

These parks as a whole are in a mountainous country, on the western slope of the Sierra Nevada, and extend between the elevations of from 1,200 to 11,211 feet above the level of the sea. The Sequoia Park contains an area of 169,605 acres and the General Grant Park an area of 2,560 arces, or a total acreage of 172,165 acres for the two reservations.

CONTROL AND ADMINISTRATION.

These parks are under the exclusive control of the Secretary of the Interior, and by his direction are at present administered by a detail of troops, and a force of civilian rangers; the former remaining on duty from three to four months each season, and the latter being employed throughout the year.

FOREST FIRES.

Prior to, and at the time of the creation of the parks the forest within them sustained a heavy annual loss from fires. Fires that originated were permitted to burn indefinitely, and thus the territory bid fair to become depleted of one of its most important natural resources and rendered a barren waste. Since the creation of the parks the forests within them have sustained but little loss from the above specified cause, as fires starting have been quickly extinguished, and the park lands have improved in condition and productiveness, and the flora growth is far superior in beauty and natural dignity as much of the former growths have been restored. Since the creation of the parks 67 forest fires have originated within them, prior to July 1 of the present year. Of these fires two were set from blasting; 14 from smoking, 8 carelessness of campers, 29 by lightning, and 14 causes unknown. A conservative estimate of cash valuation sustained in loss of timber by these fires is set at $2,743.

IMPROVEMENTS.

Owing to the inaccessibility of the parks at the time of their creation, due to lack of roads and trails, but few tourists could visit the parks; but since their creation much has been accomplished in the manner of their

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improvements, and tourists come in increased numbers. The following has been accomplished in their improvement and development:

Forty-five and one half miles of wagon roads, 226½ miles of trails, 112 miles of telephone line, 16 miles of fencing, 8 miles of firebreak, 6 rangers' dwellings, 4 rangers' barns, and 2 post-office buildings have been built; 94¼ miles of boundaries have been surveyed, defined and marked, 10 miles of old wagon road have been widened and brought to a uniform grade, 159 miles of virgin streams and 5 important lakes have been stocked with fish. Tourist camp grounds have been cleared, piped with water, provided with kitchen sinks and outhouses. Many springs and water sources have been developed along the public thoroughfares. Some work of reforestation and growing of forest nursery stock has been accomplished. A herd of elk, wild turkeys and Japanese pheasants have been successfully propagated.

NATURAL RESOURCES.

The park lands and their best utility having been segregated into four different classes, are as follows:

	Acres.
Merchantable timber belt	92,160
Woodland territory	62,768
Grass land	5,760
Waste or desert land	11,477
Total	172,165

The merchantable timber comprises that area situated between and including the elevations of 4,500 and 8,500 feet above sea level. The woodland belt comprises the area above the 8,500 feet elevation to upper timber line, and the foothill territory below 4,500 feet elevation. The grass land consists of high mountain meadows scattered at intervals throughout the parks. The waste land or desert land constitutes that portion above upper timber line in the higher elevations.

The parks form an important watershed that supplies the stream flows of many rivers from whence comes the water for irrigation and power purposes. Their entire water output being consumed for irrigation purposes during the dry summer months in the valley below.

The forests of the parks are in healthy condition and fair state of preservation and reproductiveness, and are noted for their magnificent grandeur. Embodied within them are 13 different groves of sequoia timber comprising approximately 9,410 acres, containing 1,166,000 trees, 12,100 of which have attained a size exceeding 10 feet in diameter, and many of the latter exceeding 24 feet in diameter. The General Sherman Tree, the largest, has a height of 286 feet and base circumference of 107 feet, and is computed to contain 980,000 board feet of lumber in addition to 27 cords of wood.

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The park lands contain no mineral properties of merchantable value other than that of stone, of which there is abundance of both marble and granite.

BIRDS.

The parks are an important bird refuge, in which 216 different species are known to exist. Millions of these creatures inhabit the parks, and since having found such a place they continue to come in ever increasing numbers and have a tendency to spread out from the locality.

GAME AND FISH.

There is a marked increase of both large and small game within the reservations.

Six different varieties of trout fish inhabit the waters of the parks, the rainbow being the most plentiful and the golden being the most noted.

PARK ADMINISTRATION.

ROAD CONSTRUCTION.

Owing to the topography of the country and composition of earth formations, there are many difficult conditions to be met with. In addition to the conditions of the soil, there is the economic condition to be considered. The important points that are continuously observed in this connection are as follows: (1) As to location, (2) As to grade, (3) As to avoid solid-rock formations, (4) As to drainage, (5) In procuring individual laborers who have a thorough knowledge of the work to be performed. All of the roads are built on steep mountain sides, through hard earth, shale, and solid-rock formation. The roads of the parks are built of good width and easy uniform grade, and in general are better than other mountain roads throughout the States, but are yet lacking in ballast, sufficient drainage system, and team-passing points. I would respectfully recommend that this work be accomplished just as soon as funds can be procured for this purpose.

The roads, being situated as they are in a mountainous country, are subject to much damage during the winter months by rain creating washouts and landslides, but are put in good condition during the early spring months after the storm period ceases while the ground is moist and in a favorable condition for work. This repair work is usually sufficient to maintain the roads in good condition throughout the summer months.

TELEPHONE CONSTRUCTION.

The system of telephone construction within the parks consists of what is known as the ground system, built of No. 12 candee insulated wire and equipped with 2,500-ohm bridging telephones. During this and prior

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years much trouble and inconvenience has been experienced in the transmission of messages due to the system now in use. For an efficient service an aerial system is necessary. The wire at the present time for the greater part of the mileage of the system is strung on trees, resulting in much damage to the line by the falling of same. It is recommended, even if the aerial system is not adopted, a sufficient allotment of funds be made to string the entire line on poles.

HANDLING OF PARK VISITORS.

Tourists enter the parks by both public and private conveyances; upon entering the park they are required to register their names and are given copies of the park regulations; after which they are permitted to roam about at their own free will throughout the parks. A tourist camp for the accommodation of visitors in the Sequoia Park is conducted by the River Inn Hotel Co., working under concession of the department. At present this company conducts a tent camp, but it is expected that it will soon be in a position to give building facilities.

At the General Grant Park Mrs. Mattie Cooksey, to whom concessions have been awarded, is maintaining a tent camp.

A general supervision is kept over tourists by system of military and ranger patrols, principally for the purpose of enforcing the regulations in regard to the starting of forest fires, sanitation, and shooting or molesting game.

METHODS EMPLOYED IN SECURING COOPERATION OF RESIDENTS ON LAND ABUTTING THE PARK IN PREVENTING DEPREDATIONS.

The general sentiment of residents on lands contiguous to the parks is favorable to the Government, and the present rules and regulations governing the parks and their administration. The friendly feeling existing between these people and the park rangers is the means of obtaining certain information of violation by outsiders of rules and regulations of the parks and identifying said persons, thereby securing the means of bringing such individuals to account for said misdemeanor or taking such action against them as each case may warrant.

GENERAL PARK ADMINISTRATION, BY MAJOR JAMES B. HUGHES, Acting Superintendent, Sequoia and General Grant National Parks.

This year is the first in which a conference of park superintendents has been called, the purpose of which is, as I understand it, to establish a bureau of national parks. This scheme I believe to be a move in the right direction. By such conferences an interchange of ideas may be had, a discussion of the various problems that each year present themselves for solution, and a uniform method of making decisions, granting certain privileges, concessions, and favors, applications for which are constantly being made, and at the same time doing justice to the appli-

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cants, and not giving others any occasion to make a charge of discrimination or showing of favoritism on the part of the superintendents. The rules and regulations for all the parks should be as uniform as possible, and practically the same as far as location, climate, natural resources, and the general needs and wishes of the public will admit. It seems to me that an annual conference would be desirable; but as this conference is the first one to be held, it may develop that a conference each year is not necessary, but undoubtedly a periodical conference is desirable, and the period may be determined at the present session.

ADMINISTRATION OF THE SEQUOIA AND GENERAL GRANT NATIONAL PARKS BY CIVILIANS.

I recommend that the administration of the Sequoia and General Grant Parks be placed in the hands of a civilian appointee (a retired Army officer, qualified by experience, knowledge, and interest would, in my opinion, make an admirable superintendent). I believe a similar appointment in the other parks to be equally desirable. A force of permanent park rangers should be appointed sufficient to properly patrol the parks, enforce police regulations, protect game and forests, and prevent violation of park regulations. I believe some permanent arrangement could be made by which a sufficient number of able-bodied men could be assembled on short notice to fight fires, which are of such frequent occurrence in the mountain forests. The large majority of these fires are due to lightning. The men proposed to fight fires should be paid from a fund set aside for this particular purpose.

This scheme I believe to be in the interest of both economy and efficiency. One good ranger is in my opinion more valuable in park work than a dozen soldiers. He is working in his chosen profession; he is interested in the park, its successful administration, and the enforcement of the park rules and regulations; it is his livelihood, and he is permanent, whereas most soldiers do their work in a perfunctory manner, and do it simply because they are ordered to do it, but not from any sense of interest they have in the park or its workings. Their work is temporary at the best, and there is a great probability of one season in the park being their first and last park duty.

These remarks are to a certain extent applicable to an Army officer detailed as acting superintendent. I believe the best interest of the parks are neglected by these practically annual changes of superintendents. One superintendent will become more or less interested in certain improvement work requiring several years in completion. He will get this work started, and at this time the season closes. Next year a new superintendent is appointed, and he is in no way interested in the work commenced by his predecessor, and probably this work will be abandoned for a new scheme deemed more important by the new superintendent, and consequently so much money uselessly expended. A permanent

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superintendent, such as I have suggeted, would avoid this waste of energy and funds, and the consequent retardation of the general development and improvement of the parks. In my opinion park duty for enlisted men in the Army is more or less detrimental to discipline and military training. From the necessities of the park work a large number of the men are on detached duty, not subject to the personal observation and frequent inspection of their officers, and they become lax in discipline during this prolonged absence from proper military control. Under present conditions a large number of the enlisted men are recruits, and a recruit commencing his service and getting his initial insructions under the above conditions it is doubly hard to make a good soldier of him and disabuse his mind of the impressions he acquired while on outpost duty early in his career with only a noncommissioned officer to direct and discipline him. There are a number of noncommissioned officers at the present time with a too limited experience.

I have not been able to obtain figures on the subject, but at a glance it seems to me that it would be a matter of great economy to have the parks administered by a civilian force. I do not mean that it would be more economical to the Interior Department, for the present arrangement, with a military police force, saves the Interior Department the amount it would require to employ the number of rangers necessary in the absence of the military. The expense to the War Department I believe to be much greater than would be the necessary expense incurred by the Interior Department in employing the proper number of civilians. As before stated, under this scheme, I believe more efficient park work would be accomplished and the military now engaged on park duty would be in a position to pursue the course of instruction, which I believe to be more in line with the training necessary to make competent and excellent soldiers of them.

It is recommended that the department supply a competent clerk for the acting superintendent, from the Washington office, who is perfectly familiar with all returns, reports, vouchers, and forms connected with the administration of the parks. This clerk to be present for duty in the park from May 15 to October 1 of each year, or for such period as his services will be desirable by the acting superintendent. It is practically impossible to secure a competent clerk on short notice for such a short period suitable for this work at a reasonable rate of compensation, and the result is, that the acting superintendent has to perform the clerical work or have it done by an enlisted man without any compensation whatever therefor.

PURCHASE OF DEEDED POSSESSIONS.

This subject I know has been under discussion and investigation by the Government for a number of years, and I can say nothing new on the subject, still I might repeat some few of the facts and the advantages gained should such a policy be adopted.

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The nation would be that much the gainer. The individual owners would receive a fair compensation for their property, which, held under the present conditions, can be nothing more than a source of annoyance and a constant demand on the Government for certain privileges connected with such holdings, in order that they may develop the same, or manipulate it, so as to derive the greatest pecuniary benefit therefrom, and as I understand the present ruling, the Government is not so disposed. The purchase of said lands would eliminate the possibility of any trouble or friction between present land owners and Government forces, and would materially aid in the general and natural development of the parks.

SALES OF COMMODITIES BY INDIVIDUALS HOLDING CONCESSIONS.

I recommend that the department regulate the price of commodities sold by individuals who acquire concessions, allowing a certain percentage on all commodities. I am also in favor of granting a similar concession to two or more individual parties desiring the same. This will have a tendency to induce concessioners to observe more strictly the conditions imposed upon them and will give the public a better return for their money.

DEVELOPMENT OF WATER POWER.

I believe it to be a good policy for the department to encourage the development of the water power in the parks by responsible corporations. This, of course, when such development would not be detrimental or injurious to the parks. The public would indirectly be benefited thereby and the parks to the extent of having new roadways constructed and maintained, and would receive a certain revenue from said corporations that should be devoted to the general improvement of the parks.

INCREASED APPROPRIATIONS.

The annual appropriations should be materially increased in order that the development work could progress more rapidly, thereby giving a material aid in the preservation of the forests.

BEAR NUISANCE.

Authority should be given to kill bears in the parks by certain authorized persons; so far as I have observed or have been able to learn the bear is absolutely useless as an ornament or for any good purpose; on the other hand, he has proven himself to be a general nuisance, pilfers the storehouses and refrigerators and frightens tourists (women and children), and on occasions is very bold.

ESTABLISHMENT OF FISH HATCHERY AND STOCKING OF STREAMS.

Although the number of tourists in the Sequoia and General Grant National Parks is not very great, the majority of the streams are pretty

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well fished out each year, and this notwithstanding that a number of the streams are voluntarily stocked each year by the fish and game commission of the State of California. I recommend that a fish hatchery be established and maintained in the Sequoia Park and the streams and lakes in the parks be well stocked each year. This measure, if adopted, would certainly make the parks more popular, and draw a greater number of visitors each season, the desire, as I understand it, of the department.

PROPAGATION OF GAME.

Foreign and domestic game should be propagated in the parks, and the necessary funds appropriated to purchase desirable species, also an appropriation for the extermination of certain predatory animals that prey upon the game.

CONSTRUCTION AND IMPROVEMENT WORK TO BE DONE BY CONTRACT.

I recommend that all improvement and construction work in the parks be done by contract, instead of the present method of employment of day labor. I believe equally good if not better work can be done, and certainly it can be done cheaper if honest competition in the securing of contracts can be secured.

SANITATION.

As long as the military are in charge of the parks the surgeon of the command should be appointed sanitary inspector of the various tourist camps and make frequent inspections of them.

A list of simple sanitary rules should be drawn up by the surgeon and these posted or distributed among the tourists, and all the officers on duty and all park rangers should promptly report any violation of them.

FIRE BREAK FOR GIANT FOREST.

As the Giant Forest contains what is probably the largest and most numerous group of *Sequoia gigantea* (including the Sherman tree), a firebreak should be extended around it for its protection.

DEVELOPMENT OF SEQUOIA NATIONAL PARK.

As the development of the Sequoia Park is in its infancy, I recommend that effort be made to interest sufficient capital to advertise the park and open hotels and camps for the accommodation of tourists and that a liberal policy to concessioners be carried out.

THE SULLYS HILL NATIONAL PARK, NORTH DAKOTA, BY C. M. ZIEBACH, Acting Superintendent.

In taking up the subject of the past, present, and future of the Sullys Hill National Park I must confine myself almost entirely to the past.

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Under the act of Congress of April 27, 1904, the President was authorized to set aside a tract of land embracing Sullys Hill, not to exceed 960 acres, as a public park. This was done by a proclamation of the President under date of June 2, 1904. In tracing back the history of Sullys Hill, I find that as far back as 1790 the land in the near vicinity of the hill was the gathering point of the traders of the Hudson Bay Fur Co., who sent representatives to this point to trade with the Indians that consisted almost entirely of Chippewa or Cree half breeds, and a settlement of rude cabins were built and used during the winter months within the shadow of the hill, which was then known as the Crow Hill. This point was used as a trading point for many years until the Sioux Indians began to send hunting parties into the territory claimed and used as the hunting ground by the Cree half breeds. The invading of their hunting country by the Sioux was the cause of frequent and bloody battles, which finally terminated in the Sioux driving the Chippewas and Crees north of the Devils Lake.

In 1863, a year after the Minnesota outbreak of the Sioux Indians, Gen. Sibley left St. Paul, coming from the east, and Gen. Sully following up the Missouri River, with the understanding to meet on the south shore of the Devils Lake, with the hope of rounding up and bringing to justice the Indians taking part in the 1862 outbreak. The command under Gen. Sully arrived at the point now known as Sullys Hill and left messages for Gen. Sibley by planting a post on the hill and placing the messages in the hollow post. He then retraced his march back down the Missouri River. Gen. Sibley, arriving a few days later, camped on the Cheyenne River, a few miles south of the present site of Fort Totten, sent his scouts to locate the command of Gen. Sully, found the messages left in the post.

In talking over the early history of the country in the vicinity of Sullys Hill with Chief Littlefish, who is now in his 92d year and the only remaining chief of the Sisseton and Wahpeton tribe of Indians located on the Devils Lake Reservation, he informs me that he located within a few miles of the hill in 1867, at which time the Indians called the hill the "Crow Hill," and that the construction of Fort Totten was then underway, the logs for the quarters being cut on the land now confined within the park limits. I am unable to state when or how the name of the hill was changed to "Sullys Hill," but it is likely that the name was changed by the soldiers who were aware of the previous visit of Gen. Sully in 1863. Many bloody stories have been circulated of a big battle lasting a number of days which was fought by Gen. Sully and a large party of Sioux Indians, but a thorough investigation brings to light the facts that the story was merely a frontier yarn which has been added to from time to time until now the story is nearly as famous as the battle of the Little Big Horn.

This is practically all of the past of the park as near as I can learn. As to the present, the park lies on the south shore of the Devils Lake, its western boundary being 1 mile east of the Fort Totten Indian School, which is conducted in the buildings of the old Fort Totten military post.

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The "Sullys Hill" is located on the eastern boundary of the park, and the remainder of the territory covered by the park is covered with rough hills, and in the southwestern part is a small lake covering 30 or 40 acres known as "Sweet Water." Almost the entire portion of the park is covered with small timber and brush consisting of oak, elm, poplar, ash, birch, boxelder, willow, and hazel brush. There is also an abundance of small fruit, such as raspberries, gooseberries, strawberries, plums, high-bush cranberries, June berries, etc. A number of very fine springs empty into the Sweet Water Lake. A number of prehistoric mounds can be found on the hilly portion of the park which have been explored and trinkets of ivory, stone, and copper have been found. The Indians of the Devils Lake Reservation ceded the 960 acres for park purposes in a treaty negotiated by Maj. James McLaughlin in April, 1904. This fact has been the cause of many councils and trips to Washington on the part of the Indians who had become convinced that the land was valuable for coal and that Sullys Hill contained valuable minerals, and, as the land was ceded without compensation, it was a choice matter to discuss, and many eloquent speeches have been made on the subject. In order to adjust the matter an appropriation was made by Congress in 1910 of $3,120, or at the rate of $3.25 per acre for the 960 acres, and this amount was expended in a payment of about $3 per capita to the Indians in February, 1911.

In taking up the subject of the future of the park I wish to say that the State of North Dakota furnishes only a very few wooded tracts, and the expenditure of a few thousand dollars in walling up of springs, road making, and clearing out underbrush for camping places would give the people an ideal spot in which to resort to for a few days' recreation. As a majority of the people living in the State follow agriculture as an occupation, the short work season demands the greatest effort to be put forth in spring. When seeding is done and during the months of July and part of August they have time to take an outing while waiting for the harvest to come, and if the park could be maintained and improved it would soon become a popular resort and a great benefit to the State at large.

If no appropration for the improvement of the park is made in the near future, I would recommend that the park be turned over and made into a forest reserve, as nearly every tree known to grow in this northern climate is found within the park limits.

CRATER LAKE NATIONAL PARK, BY W. F. ARANT, Superintendent.

The territory embraced within the Crater Lake National Park is largely of volcanic formation, and although Crater Lake is the chief attraction of the reserve, there are many other very interesting natural features, such as beautiful and almost ice-cold springs and creeks, deep canyons, magnificent and lofty peaks, vertical cliffs almost 2,000 feet high, fine water-

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falls, beautiful and interesting pinnacles (some of which are 125 to 175 feet high), great caves, and many other beautiful and unique volcanic formations.

No picture ever does this beautiful lake justice. I have often heard this remarked by persons who for the first time were viewing the beauties, magnificence, and grandeur of Crater Lake. I have seen many fine photographs and beautiful paintings, but I have never seen a picture of Crater Lake; and this is true of almost every one who sees it; no photograph or picture of any kind ever fully portrays its marvelous beauty and magnificence; there is a certain grandeur and sublimity about it that can not be brought out in a picture.

Crater Lake was first discovered by white people on June 12, 1853, by a Mr. John Hillman and his party of gold hunters; the Indians of southern Oregon had told them of a mountain of gold high up in the Cascades, and it was while hunting for this that the party accidentially came upon this beautiful lake.

The lake is situated on the summit of the Cascade Mountains in Oregon, in the crater of an extinct volcano, which, as the geologists tell us, many centuries ago destroyed the giant peak of the Cascade Range of mountains. It is 62 miles from Klamath Falls, 83 miles from Medford, and 97 miles from Ashland.

This lake has no outlet nor inlet; the supply of water is kept up by the precipitation, which is more than 72 inches annually; there is an average annual rise of about 3 inches; the snow at the lake and in other portions of the park falls each winter to a depth of from 15 to over 20 feet.

The lake is 6 miles long and 4 miles wide, and the water is 200 feet deep; is of a beautiful ultramarine color and is so beautifully clear and transparent that the bottom may be easily seen at a depth of more than 100 feet.

The walls of the crater are almost vertical and stand from 1,000 to 2,000 feet above the water of the lake, and some are more than 8,000 feet above sea level; the elevation of the surface of the lake above sea level is 6,177 feet. The rim of the lake is described by Prof. Diller as the base of a truncated conical mountain hollowed to a shell.

While this "Gem of the Cascades" was known to the officers and enlisted men at Fort Klamath, Oreg., as early as 1865, it did not come into much prominence as a resort until the early eighties.

There is little doubt but that the Indians had known of the existence of this lake for many ages, but owing to its peculiar awe-inspiring effect they were very superstitious concerning it, and would not go near it nor would they tell anyone about it. It was their belief that there was a great sea monster living in it; some sort of a great sea devil that would sometimes rise to the surface of the water, its horns extending several feet high, and would spout the water in the air and in its awful fury would lash the waters of the lake into a foam.

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They believed it was the abode of the evil spirits—the Llaos, and at the base of Llao Rock, a prominence on the wall of the crater standing 1,909 feet above the water, 1,400 feet of which is a vertical wall of rock, was the home of the Llaos, the evil spirits.

It was their belief that if any young member of their tribe ever looked upon this lake that his usefulness to his tribe as a warrier was forever destroyed; but in recent years through the advantages of education and enlightenment they have laid aside all such superstitions and legends and often make visits and camping trips to the lake and go out upon it on boating trips and excursions.

The Crater Lake National Park was established by act of Congress, approved May 22, 1902, and comprises 249 square miles or 159,360 acres. It is about 18¾ miles long, north and south, by 13¾ wide, east and west.

Being new, and until recently remotely situated, so far as railroad transportation is concerned, there has never yet been sufficient appropriations made by Congress for its proper protection and improvement, so that the development which is warranted by its merits as a resort has not been accomplished.

The Crater Lake National Park is an ideal summer resort; the altitude is from 4,500 to nearly 9,000 feet above sea level, mostly above 6,000 feet. In the summers, when it is hot and sickly in the valleys, this ideal camping resort is above the heat and smoke and the impurities of the atmosphere, and is clear, cool, and pleasant, and the atmosphere is healthful and invigorating, and the water is the perfection of purity.

The water of some of these springs as it gushes from the base of this Crater Lake mountain has a temperature of 35° the year around.

The park is in a timbered section, and portions of it are very heavily timbered. It is also situated in what is known as the semiarid section of the State.

Taking these two conditions together, that of being timbered and in the dry belt, increases at all times during the dry season the danger of forest fires.

The handling of the forest fire question in the national forests and other timbered sections of Oregon has been done on scientific principle, although I believe some improvements could still be made upon it, but as at present handled the damages resulting from such fires have been reduced to the minimum.

The main trouble in this respect in the Crater Lake National Park is the small appropriations made for the protection and improvement of the reserve, and the impossibility of placing a sufficient number of men on duty as park rangers and fire guards. These men should also be empowered and authorized to act as game wardens in the park. At the present time there is but one park ranger in the whole of our reserve, a territory of 249 square miles, having 65 miles of boundary line. It

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seems to me that it would be very apparent that such a small force is impossible to maintain a proper protection over the park; but with sufficient funds provided, and the employment of a sufficient number of park rangers and guards, any question concerning the administration of the affairs of the reserve would be solved. It would not be difficult to maintain perfect control over the situation in every portion of the park with sufficient help.

As I have before stated, there is now and never has been but one park ranger in the Crater Lake National Park; but from the urgent necessities of the case I would advocate and recommend the employment of 6 park rangers in our reserve. There should be one permanent ranger whose duties should be at and in the vicinity of the headquarters in the park, and 5 temporary park rangers stationed upon the lines in different portions of the reserve. In this manner there could be a constant patrol kept up on all the roads and trails. This is the only means by which the forests may be protected from forest fires and the game in the reserve protected from poachers. In this connection I am pleased to say that there is very little if any poaching done in our park, presumably, partly at least, because game is quite plentiful upon the mountains outside of the reserve; but as game becomes more scarce on the outside and more plentiful in the park, as it soon will under proper protection, there will be a greater inclination on the part of some to steal in across the lines and hunt inside, if there is not a sufficient guard kept up in all parts of the reserve.

In our park there should be a better system inaugurated for the protection of our game animals and birds.

The principal game animals are the black-tail deer, the black and brown bear, the silver-gray squirrel, and several other varieties of timber squirrels. The birds are the grouse and timber pheasant. There are few water fowl about the lake, presumably by reason of its great elevation above the sea level and its isolation from any other body of water.

In winter the snow falls so deep—15 to 20 feet—and lies upon the ground so long a time—from November to July—that all the animals and birds are compelled to migrate to a lower and warmer climate. They go down on the western slopes of the Cascade Mountains, a great many of them never to return.

The lines of the park should be extended to the north 12 miles and to the west 20 miles so as to include Diamond Lake on the north and a portion of the lower mountain elevations and foothills on the western slopes of the Cascade Mountains as a wintering ground. At the very least one good range station should be established and maintained the year round in the added territory on the western slopes to maintain a constant and vigilant protection of the game during the winter as well as the summer. Such a move properly carried out would result in making the Crater Lake National Park the ideal game preserve of the Pacific coast.

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There is also great need of more roads and better roads in our reserve. The roads and trails have been kept in the best possible condition with the very small appropriations made for repairs and improvements, but since the inauguration of the move for the location and survey of a complete system of roads in the park, under the supervision of the Secretary of War, I have not deemed it advisable to expend large sums of money upon the old roads that apparently will soon be abandoned. The soil over which all of the roads in the reserve run and are to be constructed is of a very light and porous lava formation. Travel soon makes a fine and deep dust, which is the least pleasant condition of traveling in or through the park; and while I would not favor expending large sums of money upon any of these old roads, I believe it would be money judiciously expended if Congress would take a sufficient appropriation for the proper construction of a small section of road and the experimenting upon the same with sprinkling and with treating it with an oil finish to the end that we might be better prepared for the construction and finishing of our better system of roads when they shall come.

At the present time there are two permanent camps or hotels furnishing accommodations to the visitors and tourists in the reserve; one of these is at Camp Arant, 5 miles down from the rim of the crater, and one is immediately upon the brink of the crater. These hotels are operated by the Crater Lake Co. and are both doing a fairly good business and giving the people a good and satisfactory service.

This same company has a good equipment of launches and row boats on Crater Lake and a great many avail themselves of the pleasures of a trip across or around the lake under the gigantic wall of this great caldera in which the lake is situated.

The Crater Lake Co. also has a good automobile transportation line running into and through the reserve and to the lake.

In addition to the commercial transportation cars, there have been 223 private automobiles licensed to run in the park July 10 to September 1. The license fee for a single round trip through the reserve is $1 and a season license is $5. Some automobile owners and drivers object to paying this fee unless it be used for the benefit of the roads which, under existing laws can not be done. The amount thus collected would be sufficient to pay the salary of one good man during the whole season in the park, but under existing conditions the reserve gets no benefit whatsoever of this money.

This matter should be taken up at the next session of our Congress and a law enacted authorizing the Secretary of the Interior to allot the funds arising from the collection of these fees for the benefit of the roads in the parks.

The tourist season in this park is little more than three months—July, August, and September, and sometimes part of October—but during the season of 1909 more than 5,000 people visited the reserve, and during

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the season of 1910 there would have been as many or more, only the erroneous impressions regarding the danger from forest fires kept a good many out. There was not much travel in the park after August 24 last year. This year the number of visitors is as good or better than during the preceding seasons.

Now, referring again to the matter of appropriations for the Crater Lake National Park, I would say that with a sufficient amount appropriated for the purpose there would be no difficulty in maintaining a good administration over the affairs of the reserve. The appropriations that are made are for the protection and improvement of the park, but the funds provided are not sufficient for either the protection or the improvement. There has been no more than $3,000 appropriated any year excepting one, and that amount must cover every expense of the reserve, including all salaries as well as all other expenses.

The amount available for the roads, trails, and bridges in the park this year is $850. Exclusive of any consideration for the construction of new roads, there should be an appropriation of at least $20,000 for the proper protection of the reserve.

That, of course, would include the protection of the game; of the timber from forest fires, and other damages; the establishing of a sufficient number of ranger camps upon the lines of the park, and the maintaining a constant patrol throughout the reserve; the protection of the natural objects and curiosities in the park, and a general administration over all of the affairs of the reserve.

PLATT NATIONAL PARK, BY W. J. FRENCH, Superintendent.

By the acts of Congress of July 1, 1902 (32 Stat., 641), and April 21, 1904 (33 Stat., 220), 629.33 and 218.89 acres, respectively, at the town of Sulphur, Okla. (then Indian Territory), were segregated as the "Sulphur Springs Reservation," which designation, by joint resolution approved June 29, 1906, was changed to "Platt National Park."

The park, with a total area of 848.22 acres, extends in irregular form a distance of approximately 3 miles from northeast to southwest along Travertine and Rock Creeks.

Within the park are 33 known mineral and 3 nonmineral springs. The principal groups are the Bromide, Medicine, Bromide Sulphur, and Black Sulphur Springs, in the southwest part of the park, Beach and Pavilion Springs in the northwest corner, and the Wilson Springs in the south part.

The sulphur springs predominate, but bromide, medicine, soda, and iron springs are in evidence and very popular and effective as curatives. Many, many gallons of the bromide and medicine waters are shipped to patients on physicians' prescriptions monthly.

The Antelope and Buffalo Springs, nonmineral in character, are situated in the extreme northeastern end of the park, with an elevation of

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1,080 feet above sea level and an approximate normal flow of 5,000,000 gallons daily into Travertine Creek.

The Antelope and Buffalo Springs have been affected by the drouth of the past two and one-half years to a considerable extent.

Cold Spring, situated midway between Pavilion and the east end of the park, is nonmineral in character and affords water for many of the families of the city living immediately north of same.

The following is a statement of the mineral springs which have been developed:

Flow of springs.

	Gallons.
Bromide Springs (3)	300
Bromide Sulphur	250
Medicine Spring	528
Taff or Black Sulphur	500
Hillside	129,600
Pavilion Springs (7)	200,600
Beach Springs (3)	125,000
Wilson	1,000
Jerico	200

The amount of water per capita used on the premises and taken away for individual use averages three-fourths gallon per day. This statement applies to all mineral springs, except Wilson and Jerico, from which the amount taken is inconsiderable

Visitors partaking of the waters of Bromide and Medicine Springs during the fiscal year ending June 30, 1911, numbered 124,078. Many of these made visits from day to day while remaining at the springs, and many of them were residents of the city who visited the springs and were enumerated on each occasion.

The approximate number of actual visitors to the springs during the fiscal years 1910 and 1911 were 30,000 persons.

There were 877 campers in the camp ground within the park during this year for a longer period than 3 days.

Temperature.

	Hottest.	Coldest.	Mean.		Hottest.	Coldest.	Mean.
1910.				1911.			
July	98	74	83	January	70	40	49
August	96	71	77	February	78	18	44⅓
September	90	64	79	May	82	56	73
November	74	36	50	June	96	76	86
December	58	29	43				

It is evident that Platt National Park would make a delightful winter resort. With those that are acquainted with its advantages as a delightful and pleasant place to tarry during the extreme warm and sultry summer months there is no question of their choice, it being from 10° to 12° cooler than the surrounding country.

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The trails and driveways leading to the most attractive points have been improved as much as possible with the limited means at hand. The trails leading from the city to the different springs and pavilions, and Cliffside Trail leading from Pavilion Springs and following Rock Creek and winding along the mountain, give many picturesque scenes, overlooking the city and surrounding country.

The trail leading to Antelope and Buffalo Springs, at the east end of the park, follows the meanderings of the Travertine Creek and is shaded almost the entire length by a heavy growth of healthy timber.

Anyone endowed with a love for the beauties of nature, looking into the faces of these picturesque falls and listening to the music of the songs they sing, will truly be impressed that this is a spot ordained by the Creator for health giving and life restoring of mankind, worthy the protection of our good Government.

The permanent bridges are the Washington, Lincoln, and Bromide. The Washington Bridge is a structure of first-class material and workmanship, combining strength, durability, and beauty. It is apparently in as perfect a condition as the day it was completed except that it should be painted in the near future to protect the material from rust.

Lincoln Bridge, a foot bridge over Travertine Creek where the Roberts Trail leading from second street west to the Pavilion Springs crosses the creek, is a stone structure very beautifully designed and graceful in every feature.

Bromide suspension footbridge, which spans Rock Creek at Bromide and Medicine Springs, is a beautiful and unique wooden structure of the arch type suspended by wire cables. This bridge is in very fair preservation except the floor and possibly a portion of the underdecking, which will be clear for inspection when there is a new floor laid, which should be done during the next year.

The pavilion just being completed over Hillside Spring is built of heavy timber, with good red cypress shingle roof. It is supported on rock posts laid in cement, is 20 feet square, substantial, and well proportioned. With one more coat of paint it will be complete.

Medicine Spring has been developed and improved during the last year. It is located about 200 feet west of Bromide Spring and Pavilion and protected and confined by a cement cistern built around it after blasting away the rock. This spring discharges 528 gallons of water daily.

As Platt National Park is small, compared with many of the other national parks, the problems of protection are not so large and varied. This factor, however, makes it all the more important that the roads and drives be maintained and improved as rapidly as possible, and that the natural beauties of the park be developed as rapidly as possible in a natural way.

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The presence of an unusual number of medical springs, to which people come in increasing numbers, calls for close watchfulness against any possible source of bacterial contamination of the waters. The importance of this will grow as the park is more extensively used, and may ultimately call for very close supervision of the water.

Platt National Park ultimately should be covered with a most beautiful velvety turf in the untimbered portions. It is located in a region where Bermuda grass, if given an opportunity, quickly heals over the scars on the face of the earth and transforms rough and wasted slopes into grass-grown hillsides. Judicious planting of the roots of this grass wherever washes begin developing will not only add to the beauty of the place, but will make unnecessary expensive labor later to overcome the damage caused by unrestrained erosion. This grass possesses another advantage that it thrives with use. No unwelcome signs reading "keep off the grass" are necessary where it grows.

The principal necessities of the Platt National Park are the following:

(1) The protection of the waters of the springs and streams from pollution. The protection of the health of the residents and visitors requires the installation of a sanitary sewer system. There is seemingly no outlet for the sewerage of the town of Sulphur other than through the park. A trunk-line system should be installed at the earliest possible date, with laterals at the most convenient and natural points of drainage. This trunk line should be built by the Government under direction of the Secretary of the Interior, with permission granted the city of Sulphur to build the laterals under direction of the Secretary, or the city of Sulphur should be compelled to install the entire system at the city's expense, under the direction of the Secretary of the Interior.

(2) Steps should be taken to increase the number and power of the lights in the park. There should be one light installed at Hillside Spring; one between Hillside Spring and the Pavilion Group; and one in the superintendent's office.

(3) A comprehensive plan of improvement of the driveways and trails should be adopted.

(4) A pavilion should be built at Beach Spring, and a footbridge constructed over Rock Creek at this point, making the spring accessible from West Central Park.

(5) A new Government building should be erected, with vaults to protect the records of the office. I suggest that this building be located at a point just within the park and facing or in front of Second Street west.

(6) The work of fighting off weeds and thistles should be kept up, especially in the park adjacent to the city and springs. The weeds and underbrush in the woodland should be cleaned out in order to preserve the desirable timber. It has been suggested that a flock of goats would

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effectually accomplish this part of the labor, and at a profit rather than an expense.

(7) Forest trees should be planted in East and West Central Parks.

(8) The residences in the park should be repaired and painted.

(9) There should be built a barn in which to keep forage and feed; the so-called barns within the park are totally inadequate. There is no room for feed in the shed at the superintendent's residence, and but little at any other of the residences, save at the old Robinson residence, where the teamster Milligan resides.

(10) Where the roads cross the creeks there should be constructed small concrete culverts with sufficient openings to carry four or five times the normal flow of the stream. If these culverts were built the grades of the approaches would be lightened, and it would not be necessary to drive over the very rough bottoms of the creek.

(11) I recommend the installation of a bathhouse on and in the reservation, either by and under the management of the department or through concession. I think a bathhouse would add as much or more to the interest of the park and the convenience and welfare of the visitors than any one thing that could be installed. The people can get baths here in the city, but this does not satisfy them. They want baths from the water of these springs, and desire to see the spring water running direct into the tubs.

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SCHOOL OF
LANDSCAPE ARCHITECTURE

PROCEEDINGS

OF THE

NATIONAL PARK CONFERENCE

HELD AT THE

YOSEMITE NATIONAL PARK
OCTOBER 14, 15, AND
16, 1912

WASHINGTON
GOVERNMENT PRINTING OFFICE
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PROCEEDINGS OF THE NATIONAL PARK CONFERENCE HELD AT YOSEMITE NATIONAL PARK OCTOBER 14, 15, AND 16, 1912.

INTRODUCTION.

On October 14, 15, and 16 there was held in the Yosemite National Park the second conference of departmental officials and other persons interested in the development and administration of the national parks. There were present at this conference the superintendents of the various parks, the principal Washington officers of the Department of the Interior who handle national park matters, and representatives of the concessioners, of the transportation companies tributary to the parks, and of independent organizations that have been interested in the problems of park administration. All persons holding concessions in the national parks were invited to be present and all of the railroads tributary to the parks were invited to send representatives. Every important interest connected with the parks both on the side of the Government and on the side of the concessioners and railroads was adequately represented. The purpose of the conference was to consider all the questions that arise in the administration of these reservations, in order that the department might be able to make such changes in the regulations and to foster such development as might be for the best interest of the public. It should be distinctly understood that the views herein expressed are those of the individuals presenting them, and that the department gives no official sanction to the facts stated or to the recommendations made.

PERSONS ATTENDING THE CONFERENCE.

Capt. J. B. Adams, assistant forester, Washington, D. C.
W. F. Arant, superintendent Crater Lake National Park, Klamath Falls, Oreg.
H. C. Best, Yosemite, Cal.
W. M. Boland, superintendent Wind Cave National Park, Hot Springs, S. Dak.
Frank Bond, chief clerk, General Land Office, Washington, D. C.
J. T. Boyesen, Yosemite, Cal.
Lieut. Col. L. M. Brett, acting superintendent Yellowstone National Park, Yellowstone Park, Wyo.
G. M. Brookwell, Los Angeles Real Estate Board, Los Angeles, Cal.
L. E. Burkes, secretary Automobile Club, San Francisco, Cal.
D. E. Burley, general passenger agent, Oregon Short Line Railroad, Salt Lake City, Utah.
J. J. Byrne, assistant passenger traffic manager, Santa Fe Railway.
R. H. Chapman, acting superintendent Glacier National Park, Belton, Mont.

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A. D. Charlton, assistant general passenger agent, Northern Pacific Railway, Portland, Oreg.
Maj. Sherwood A. Cheney, Engineer Corps, United States Army.
H. W. Child, Yellowstone Park Transportation Co., Yellowstone Park, Wyo.
J. W. Coffman, Yosemite, Cal.
W. E. Colby, secretary Sierra Club, San Francisco, Cal.
R. S. Cole, Riverside Chamber of Commerce, Riverside, Cal.
J. C. Conwell, secretary Automobile Dealers' Association, of Los Angeles, Cal., representing Ocean to Ocean Highway Association.
D. A. Curry, Yosemite, Cal.
J. B. Curtin, Sonora, Cal.
W. T. S. Curtis, Washington, representing certain Hot Springs lessees.
Mrs. John Degnan, Yosemite, Cal.
F. C. Dezendorf, Chief Field Division, General Land Office, custodian Muir Woods, San Francisco, Cal.
E. W. Dixon, inspector, Department of the Interior, Washington, D. C.
F. C. Drum, Yosemite, Cal.
Coert DuBois, district forester, California.
Ralph Earle, Pathé Freres, New York.
C. H. Edwards, Secretary, Coulterville Road, Cal.
Dr. L. R. Ellis, member federal registration Board, Hot Springs, Ark.
Charles S. Fee, passenger traffic manager, Southern Pacific Railroad, San Francisco, Cal.
Walter L. Fisher, Secretary of the Interior, Washington, D. C.
George Fiske, Yosemite, Cal.
Ex-Senator Frank Flint, representing Southern California Automobile Association, Los Angeles, Cal.
D. K. Foley, Yosemite, Cal.
Col. W. W. Forsyth, acting superintendent Yosemite National Park, Cal.
W. J. French, superintendent Platt National Park, Sulphur, Okla.
Walter Fry, head ranger Sequoia National Park, Three Rivers, Cal.
Miss S. C. Geary, secretary Automobile Club of Southern California, Los Angeles, Cal.
W. H. Gorham, representing Mountaineers, Seattle, Wash.
P. H. Greer, president Automobile Dealers' Association of Southern California, Los Angeles, Cal.
E. S. Hall, superintendent Mount Rainier National Park, Ashford, Wash.
Maj. H. M. Hallock, medical director, Hot Springs Reservation, Hot Springs, Ark.
George B. Hanson, Southern Pacific Railroad, San Francisco, Cal.
F. F. Harvey, manager dining car service, Atchison, Topeka & Santa Fe Railway, American Bank Building, Kansas City, Mo.
C. A. Hawkins, White Automobile Co., San Francisco, Cal.
F. J. Haynes, concessioner, Yellowstone Park, Wyo.
H. H. Hays, Wylie Permanent Camping Co., Yellowstone, Wyo.
J. F. Hickey, Tacoma, Wash.
J. R. Hickey, Monida & Yellowstone Stage Co., Yellowstone Park, Wyo.
James Hughes, Chicago, Milwaukee & Puget Sound Railroad, Tacoma, Wash.
D. W. Hutchins, Riverside Chamber of Commerce, Riverside, Cal.
Chris. Jorgensen, Yosemite, Cal.
W. E. Kelly, Interior Department, Washington, D. C.
O. W. Lehmer, general manager Yosemite Valley Railroad, Merced, Cal.
M. O. Leighton, Chief Hydrographer, Geological Survey, Washington, D. C.

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C. H. Lovell, attorney for Wawona Road.
F. W. McCauley, Yosemite, Cal.
C. H. McStay, Los Angeles Chamber of Commerce.
R. B. Marshall, Chief Geographer, Geological Survey, Washington, D. C.
George W. Marston, San Diego, Cal., representing American Civic Association.
T. H. Martin, secretary Seattle-Tacoma-Ranier National Park Committee, Tacoma, Wash.
H. A. Meyer, private secretary to the Secretary of the Interior, Washington, D. C.
A. W. Miles, president Wylie Permanent Camping Co., Yellowstone Park, Wyo.
Frank A. Miller, Los Angeles, Cal.
E. H. Mormon, Wylie Permanent Camping Co., Yellowstone Park, Wyo.
John Muir, American Alpine Association, Martinez, Cal.
H. H. Myers, superintendent Hot Springs Reservation, Hot Springs, Ark.
Fernando Nelson, San Francisco Motorist.
P. M. Norboe, State engineer, Sacramento, Cal.
E. T. Off, Pasadena Chamber of Commerce.
O. K. Parker, engineer for Automobile Club of Southern California, Los Angeles, Cal.
E. T. Parsons, representing Mazamas Mountaineers, Seattle, Wash.
A. C. Pillsbury, 783 Mission Street, San Francisco, Cal.
P. H. Price, Santa Barbara Chamber of Commerce, Santa Barbara, Cal.
Hon. John E. Raker, House of Representatives.
Miss Vera C. Riley, United States Land Office, San Francisco, Cal.
A. C. Ringland, district forester in charge, Grand Canyon.
R. K. Roberts, secretary Motor Car Dealers' Association, San Francisco, Cal.
N. L. Salter, Yosemite, Cal.
Wm. F. Schmidt, general western agent, Missouri Pacific; St. Louis, Iron Mountain & Southern Railway; and Denver & Rio Grande Railroad, San Francisco, Cal.
W. M. Sell, Yosemite, Cal.
David A. Sherfey, engineer, Yosemite National Park.
S. E. Shoemaker, superintendent Mesa Verde National Park, Mancos, Colo.
Gabriel Sovulewski, supervisor Yosemite National Park.
W. G. Steel, Portland, Oreg.
J. B. Ternes, Tacoma Baggage & Transfer Co., Tacoma, Wash.
F. W. Thompson, general western agent Rock Island Lines, San Francisco, Cal.
C. S. Ucker, chief clerk Interior Department, Washington, D. C.
W. L. Valentine, representing Southern California Automobile Association, 710 O. T. Johnson Building, Los Angeles, Cal.
R. F. Waddell, United States land office, San Francisco, Cal.
Percy J. Walker, president State Automobile Association, San Francisco, Cal.
C. A. Washburn, Wawona, Cal.
J. S. Washburn, Wawona, Cal.
R. B. Watrous, secretary American Civic Association, Washington, D. C.
Col. Harris Weinstock, representing San Francisco Chamber of Commerce, San Francisco, Cal.
Capt. W. M. Whitman, acting superintendent Sequoia and General Grant National Parks, Three Rivers, Cal.
Dr. Willistear, Pasadena Chamber of Commerce, Pasadena, Cal.
R. M. Yost, Pasadena Chamber of Commerce, Pasadena, Cal.
C. M. Ziebach, acting superintendent Sullys Hill National Park, Fort Totten, N. Dak.

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MORNING SESSION, OCTOBER 14.

Secretary FISHER. Gentlemen, we may as well come to order. This, as you know, is the Second Annual National Park Conference, the first having been held last year at the Yellowstone, and I am very glad to see so many of you present here this year.

We are meeting one day in advance of the formal announcement, I believe, as it was not sure that I could get here from Honolulu before to-morrow, so that a day's leeway has been given. We know there are a very considerable number of people coming up during the day.

The conference is called to discuss the various questions relating to the administration of the national parks and issues that have to do with their proper management and development. There are a great many questions to be talked about. Last year we had a number of formal papers. We felt at that time that, being the first conference, it would be desirable to indicate somewhat the character of the questions we wished to talk about by having formal papers prepared by a number of people on different topics of interest. It was felt that in that way we would get before the conference suggestions that would lead to expressions of opinion or experience or advice from various members of the conference with regard to the problems that were confronting any particular park or any official of the parks.

The situation regarding park administration has not changed in a radical manner during the last year. It was, I think, the unanimous opinion of those who attended the conference last year that the national parks of this country would never be properly administered until we had established something in the nature of a national park bureau or other method of centralized administration. It was fully appreciated then by those who were present, not only those connected with the Government service but those outside of that service who had to do with park matters, that the system or lack of system that was then in effect was perfectly hopeless.

As you know, the national parks have never had any method of centralizing their administration. They have grown up, like Topsy, and nobody has taken any care of them as a whole. Each individual park has secured from Congress that amount of appropriation and that degree of attention that local influence was able to obtain in that body. The administration and the Secretary's office in Washington have called the needs of the parks to the attention of Congress from time to time, but so far as I have been able to ascertain at that time or since, the parks as a whole have never had their matters pressed upon the attention of Congress until last year. Each of these parks has problems that are also problems in other parks—questions of road construction, bridge construction, care and maintenance of the roads and bridges and trails, the concessions with regard to hotels, transportation, photography, and other matters of that

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kind. They all raise questions which are very similar in the different parks, and yet there is no way of coordinating these matters and bringing to bear for the benefit of all other parks the experiences of any particular park, or the successes or failures of particular park superintendents or other officials.

There has been no machinery whatever in the Secretary's office for this purpose; and so by process of elimination, by force of circumstances, the administration of the national parks has been intrusted primarily, so far as routine details are concerned, to the office of the chief clerk. That office is very heavily burdened with other matters of detail in the city of Washington. It has the handling of the ordinary clerical details of the office of the Secretary of the Interior and the handling of the clerical matters that come up to that office from all the different bureaus and subdivisions of the department.

In the very nature of the case, it has been impossible for the chief clerk's office to give the attention to these matters which their importance demands. The offices of the chief clerk and of the Secretary itself have never been equipped to handle these matters, if it had been possible to give them the necessary time and attention. Many of the problems are engineering in their character; many of them relate to the broader aspects of park development. The landscape questions, the questions relating to the forests and streams in the forest—sanitation and the construction of buildings of various kinds, both for park administration and for the accommodation of the traveling public—all require special qualifications on the part of those called upon to administer them, with respect to which Congress has afforded no facilities whatever to the Secretary of the Interior.

Now, as I have said, the discussion of these matters last year resulted in a practically unanimous opinion—unanimous as far as I am aware; no dissension of any kind appeared to exist with relation to the matter—a unanimous opinion that we should organize or secure from Congress the means to organize some form of centralized administration. The agitation for congressional action was taken up and supported by various organizations and individuals. It received support from the press of all kinds throughout the country—from the newspaper press and from all the weekly and monthly publications which were interested at all in public matters. It received the support of various influential individuals and organizations. The American Civic Association, whose secretary is here meeting with us again, as its president was last year, made it rather the particular subject of its annual meeting last year. A considerable discussion occurred and resolutions were passed. Its president, Mr. McFarland, and its secretary, Mr. Watrous, together with others connected with it, gave such active support and influence as they could to the passage of a bill by Congress. A bill was prepared, introduced in the two Houses of Congress, and apparently given favor-

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able consideration by the committees to which it was referred, but conditions at the last session of Congress were such that it was impossible to procure any actual legislation on the subject.

The discussion with regard to inadequate appropriations produced a little result in some instances. We got a little start toward an increased appropriation for the Yosemite, but the policy of the Democratic party, particularly in the direction of reduced appropriation on the theory of cutting down expenses of the Government, of course, naturally stood in the way, as a general principle. It was very difficult to get any consideration, and I may say that increased park appropriations did not receive the vigorous support of some of the gentlemen of another party—my own party—that I would like to have seen. I am not discussing the question as a political matter at all, but merely reciting the facts. The result was that we failed to get either the increased appropriations or the remedial legislation that we very much need. I think, however, we have made a substantial beginning in the growth of public sentiment, in calling the matter to the attention of Congress in an effective way, and I am not without hope that at the coming session of Congress we may be able to get some action taken. There was some difference of opinion with regard to the particular form of the action that should be taken—as to whether there should be a bureau created or whether we should at first, at least, simply take steps that would enable us to get more effective work in the Secretary's office without the creation of a bureau—I mean, whether Congress might not prefer the second alternative, and confine its action to the passage of the necessary appropriations to enable us to employ park experts and engineers to assist in the administration of these affairs in the Secretary's office, together with some additional assistance on the clerical side for that express purpose. I think a very considerable sentiment existed in favor of the latter plan. I know that many Members of Congress in speaking to me expressed the opinion that the National Park Bureau should be created, but that possible it might be necessary at first to proceed in the way that I have just indicated.

Now, we have very many questions to discuss here to-day; some of them are subjects for open sessions and some of them for executive sessions. There are questions of very great importance affecting all the phases of park administration. One of the important questions now before us is the question of the admission of automobiles to national parks and the terms upon which they should be admitted if they are to be admitted, either to this park or to any other park. That, as I have said, is a very important question. It is by no means the only question. It is by no means the most important question we have to discuss, but there are a considerable number of individuals here who are enthusiastic users of the automobile, and I suppose they regard it as a matter of first importance—possibly they think it was the purpose for which this conference was called. If so, it is just as well to disabuse them of the idea right at the

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outset. We are going to take up the automobile question on its merits and in due course. The ordinary methods of agitation have been employed, and my secretary, I think, has finished opening a number of telegrams, substantial copies of each other, which the automobile associations have thought might have some influence on this gathering or on the Secretary. Of course an official letter by the executive officers of these organizations would have had just the same effect and saved considerable expense. However, if the gentlemen who are interested wish to show their interest by paying for telegrams, I have no possible objection to that course. I doubt if I shall have time to read them all; but I shall have my secretary classify them, and any that contain anything besides a desire that the parks shall be open to automobiles I will look at. Perhaps to-day the best thing to do is to hear informally, publicly, from the various park superintendents with regard to those matters that they would like to call before the conference as a whole, particularly as to conditions since our last meeting, and a general discussion of any of the questions that may be presented can be had later—either this afternoon or at some other time, to be determined at the end of this meeting. We will later have an executive meeting of the park superintendents, at which they may wish to discuss some of the questions that they think should be presented in that way.

To-morrow morning, if we do not find reason to change the plans and have then progressed far enough with the other program, we will hear from the transportation people, the railroad representatives and others, and from the gentlemen who are interested in the automobile. In that connection, I would suggest to the latter gentlemen, if possible, and I see no reason why it is not possible, that they agree upon, say, two or three persons who will present the special matters in which they are interested, and thus avoid unnecessary repetition of arguments or suggestions.

Again expressing my appreciation that so many of you have found it interesting and convenient to come here, especially those who are not in the official service of the Government, I will declare this meeting open, and start by asking Col. Brett, as the representative of the park that perhaps stands out most in the public eye in point of interest and attendance, to begin the meeting by telling about the conditions in the Yellowstone Park as they are now and the changes that have occurred since our last meeting.

Col. BRETT. Mr. Secretary, Superintendents, and others: The need for a bureau of national parks was particularly emphasized in the Yellowstone this season and in the latter part of the season of 1911. On the 1st day of August, 1911, all the money that had been appropriated for roads, bridges, sprinkling of same, and general improvements was exhausted. There was not a rainy day in August of 1911. The consequence was that the surfacing of the roads practically blew

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away. The engineer officer in charge thought that $10,000 would replace that surface. When he started in this season, after the appropriation became available, he found that $10,000 had gone a very short way, which demonstrates the fact that we ought to have a bureau of national parks in which there is a fund to meet such emergencies as were met in the case of the Yellowstone and to prevent any such excessive waste. Now, there was not a cent of money available in our park until some time in July. Then there was a portion—only one-twelfth of the former year's appropriation. Well, the engineer officer said he couldn't do anything with that, because he couldn't equip his crews to get into the park, and no material good was accomplished until the regular appropriation was available. Now, to meet the conditions and to insure the park being open to tourist travel, I placed 200 enlisted men of the command out in that park, and we repaired the roads, the bridges, and filled up all the washouts, and there were some washouts as big as this building, right down through the high, steep grades. We went to work and we either threw in enough rocks or bridged it over. On the road between the north entrance, which is Gardner, and Mammoth there is a moving hill. It is a clay hill on an inclined plane. We measured it. It moved over 8 inches in two days, and we had on an average of 40 men working on that thing off and on for several months. That piece of work did not cost the United States one cent, and we came pretty near filling up the Gardiner River and throwing away that hill.

Now, these are propositions that must be faced and they ought to be faced before the roads are allowed to deteriorate further. We hope, with the appropriation granted this year, just to be able to get the roads back where they were, and the appropriations for the entrances and the main road are considerably over $100,000, which just simply demonstrates what an extravagant method of park administration we are up against now, because there is no way of checking the waste. Those were the only main points, Mr. Secretary.

The SECRETARY. What was the attendance last year at the park, Colonel?

Col. BRETT. 22,739.

The SECRETARY. And how did that compare with the previous year?

Col. BRETT. That was 72 less than the previous year.

The SECRETARY. Substantially the same?

Col. BRETT. Yes, sir.

The SECRETARY. We made some changes in the Yellowstone with regard to the general regulations and there were some arrangements made by way of adjustment of conflicting interest with relation to the entrance from Cody. Do you know in the practical operation, during the season, about how it worked?

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Col. BRETT. Yes, sir; I think that new transportation company carried something like 209 passengers. I haven't the exact figures, but I talked with Mr. Holm. He felt very much encouraged. He didn't think that was a bad beginning for a new enterprise. The Wylie Co. also established a permanent camp—another station—and by the experience of last year it has decided to put, if approved by the department, a camp down near the eastern entrance, below the Sylvan Pass, and I think it would be a first-rate thing. There is no doubt but that there is going to be a healthy increase in travel from that entrance.

The SECRETARY. What happened in regard to the lake transportation? Were the steamers there put in satisfactory shape, and did they operate during the season?

Col. BRETT. Yes, sir; on schedule.

The SECRETARY. Was there an increase or decrease in the travel?

Col. BRETT. Increase, sir.

The SECRETARY. I don't know that there is any other question in connection with the Yellowstone which occurs to me at the present time. If there is anyone here who has any matter in connection with that park in which they are especially interested, we would be very glad to hear from them now. Otherwise, I will ask Col. Forsyth if he will tell us what the conditions are in this beautiful park in which we are holding this conference.

Col. FORSYTH. The season just ended in the Yosemite has not been a season with as much travel as heretofore. For the last two or three years, up to this summer, the travel has been about 13,000 in round numbers, but this summer it has fallen off over 2,000. Now that falling off in travel I think can be attributed to a number of causes. The old residents of the valley here tell me that the summer of a presidential campaign always reduces the travel in the Yosemite Valley, and we have had such a summer.

The road from El Portal up here has been kept sprinkled all summer, and the pleasure of reaching the valley has not been marred in any way. There has been no annoyance from dust on that road at all.

There are a number of things in connection with the Yosemite that it seems to me should with propriety be discussed at this conference. There is a proposition now in Congress to change part of the boundary line. I think we might to advantage discuss the desirability of that. Of course, the automobile question in connection with this park is one of the matters for discussion, and the general question of a bureau of national parks seems to be, from my several years of service here, an urgent necessity. The arguments are all in favor of it. I can think of no reason against it. As a business proposition it is very clear that the parks have increased so in number and variety that a bureau of national parks has now become simply a matter of business. We should have such a bureau.

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The appropriation that was recently made by Congress was made so late that we have been enabled to do very little so far. There are a number of very urgent needs in the way of bridges right here that we hope all of you will see before you leave. Besides, they should not be replaced by the same kind of bridge, a wooden structure that lasts only two or three years. The bridge right there at the Sentinel Hotel is, as you may see at a glance, in a precarious condition. The resident engineer here has prepared plans for a reenforced concrete bridge about four times the width of that bridge which will be superior in appearance and in magnitude. That point is a very favorite place with visitors. There is a beautiful vista up the river. It is proposed that this bridge shall have seats along the side walls, where the visitor can spend hours, if necessary. There are a number of wooden bridges near the foot of Bridalveil Falls which are in a rickety condition. They should be replaced, and will have to be replaced before next summer, either by the same type of bridge we have there now or a reenforced concrete bridge, which will last for a hundred years. One of those wooden bridges lasts only three or four years, and while concrete bridges are expensive they are so durable that they are really an economy, and they will consume the other half of that $80,000 out of this current appropriation.

Now, to go over a number of the improvements that we have made during the current summer. It is now possible to go up to the North Dome and along the north rim of the valley and come down by the top of Yosemite Falls. That is a new trail.

The SECRETARY. It is a horse trail, is it, Colonel?

Col. FORSYTH. It is a horse trail. It divides evenly with the famous Pohono trail, which runs along the south rim, the honor of being among the scenic 10 miles of the world. A new trail has been built from Tenaya Lake, passing between Clouds Rest and Sunrise Mountain, so that you can ride up to Lake Tenaya, 13 miles from here, one of the prettiest sheets of water in the park, and you can ride from there on up to Clouds Rest, which is the highest point around here, 10,000 feet above the valley. A new trail is now being built from Merced Lake up to Washburn Lake, and an old fisherman told me that the fish in this Washburn Lake were so voracious that he had to climb a tree to fix his bait. It is in a locality which has been inaccessible, so that the fish have been undisturbed—haven't had anything to reduce their number.

We have repaired most of the important bridges in the northern part of the park. The horseman, or the one on foot, can go now in great comfort from the Tuolumne Meadows across to Smedberg Lake and Benson Lake, down Rancheria Mountain and the canyon of the Tuolumne to Hetch Hetchy in a great deal more comfort than they could a year ago. The trail leading from this point into the Hetch Hetchy and from Hetch Hetchy over to Lake Eleanor, which the Secretary rode over last summer, and which was then in a most awful

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condition, has now been made a most delightful ride—not the road over which the Secretary went through the harrowing experiences he did a year ago. But there are other trails up there that we have not been able to repair. We didn't get the money in time and didn't have enough, but we hope out of this $80,000 to put all those trails up in that remote part of the park in a better condition than they have ever been before.

Now, to go back to this boundary question, which is on the west side. Connected with that discussion is the question of patented land inside the park. To my mind, private land inside of any park is an anomaly. There should be no private ownership of anything in a national park. And it is a fact that the best timber and meadow land in this park, except this valley, is owned by private parties, and to my mind the great and urgent need now in the Yosemite Park is by some way eliminating that class of ownership in the park. As time goes on the vexatious conditions that arise in an administrative way from the ownership of these private lands increase, and those who are deeply interested in this park, and I don't think anybody who knows much about it can fail to be, are earnestly desirous, if possible, to eliminate that embarrassing and unsatisfactory condition of affairs. The roads that run into this park are all privately owned roads, every one of them, except the little road, the short road from here to El Portal. They are all toll roads, and in case their charters or franchises should be annulled those roads would lapse not to the United States, but to the State of California, because they became toll roads before this park was set aside.

Now, that is a feature that is very intimately associated with this automobile discussion that is pending, and I mention it now simply because we are talking about roads. The road from Pohono Bridge up to the village here, that most of you saw yesterday, is about completed. The little strip from Camp Ahwahnee over here to the village we expect to have underway before the cold weather of December comes. Now, whether the automobiles are admitted or not, for some years the great mass of travel in here is going to be by rail to El Portal and by vehicle of some kind from El Portal up here. Consequently, the road from Pohono Bridge down to El Portal should be made a highway and boulevard. There are dangerous places, you will have noticed, along the edge of that road, and in one or two of those places vehicles have gone over with frightful results. So that there is an urgent need of converting that road into a highway and boulevard from Pohono Bridge down to El Portal, with suitable guard walls at dangerous places. The engineer has prepared very thorough and complete estimates of that work. He has also prepared estimates for the continuation of this road that we are building from Camp Ahwahnee up here on up to Happy Isles.

The water supply system of the valley here is being developed and is turning out in a most gratifying way. The source of water supply for

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the Yosemite is perhaps ideal. An enormous stream of water runs right out from under Glacier Point, over 3,000 feet of granite vertically above, and no telling how many miles back, covering the source of supply of this little valley we are living in, so that the source is impregnable so far as contamination of any kind is concerned. Then the water itself is so soft that the use of soap is hardly necessary, and it is always cold. It is ideal in quality and the engineer in making his explorations has found that heretofore the quantity of that water that we were using was a mere dribble of the total flow. So that we have and are now taking measures to pen up all that water to make it available for domestic use here in the valley. If we succeeed in that, and there is every reason to believe that we will, it will perhaps never be necessary to use water out of the river at all. If we do that, then the visitor camping along the river can bathe in the river all he wants to. Campers frequently think that it is a hardship that they can not go in swimming in the river. We hope that after awhile they will be able to bathe in water that is about 62½ degrees in temperature. The water is ideal for bathing purposes.

So much for roads and water. We have up there an electric light and power plant. The cost of that is very light, but so useful have we found it that when this rock crusher that we are running to crush rock is used, it simply is a picnic to run it. In fact, it runs itself. The pumps that supply those tanks are run by this electric power, and whenever the tank is full the current is shut off by means of a float, so that all we have to do is to start the pump and the water and electric power does the rest. It is like putting a nickel in the slot. Now, that can be improved and the sale of power be made a good source of revenue in the course of time we hope. I don't think there is any doubt of that. It is a good business proposition. I have had lots of men every summer come in and say that any time the Government wanted to stop doing business with the electric power plants they would be willing to take it off the Government's hands, and at handsome profit to the Government, too. When we build a fine new hotel, there will be lots of power at hand for that purpose and a great many other purposes.

The roads, then, and the water supply and the electric power and light are in a very satisfactory condition as far as prospects go. Now come the trails. We find by an examination of these old trails upon the rim of the Valley that very great improvements can be made in them. They can be relocated in places so as to very much modify and soften the steepness of the grade. Consequently, when we have that done the travel over those trails on foot will be very much increased. Hundreds of people come in here that have never been on a horse or a mule. They tell me that by modifying the steepness of those trails and making them a little wider they would prefer to walk. Now, it is fair to assume that that preference will continue. We hope, therefore, that the short and long

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trails up to Glacier Point and the trail up to the Yosemite will in a year or two be not so difficult an undertaking as it is now for the foot visitor.

I believe that is all that occurs to me now about the Yosemite.

The SECRETARY. Did you give the figures of the attendance this year as compared with last?

Col. FORSYTH. Not exactly. The figures as made up for this year are for 11 months only. The travel for last year was, in round numbers, 13,000. This year, for 11 months, it was a little short of 11,000. There has been a falling off in round numbers of 2,500 this summer over last; that is, for the last 11 months over the 12 preceding months.

The SECRETARY. The hotel problem that you have here is one that was discussed to some extent at the last conference, and subsequently on my visit here. Have you received during the past year any proposals with regard to hotel construction here?

Col. FORSYTH. There has been received only one tentative proposition from Mr. Sell, now the lessee of the Sentinel Hotel, but it was merely a preliminary application to know what he might expect. That application, or inquiry rather, can hardly be called an application. No further steps were taken by him, so that what conclusion he reached was not made known.

The SECRETARY. What was the character of the answer?

Col. FORSYTH. That the Government would grant a lease for 10 years. It would give the builder of a suitable hotel the privilege of taking certain materials from the park for building purposes—sand, stone, some timber; that the Government would furnish electric power and light at rates to be agreed upon, I believe, in general terms.

The SECRETARY. What was said with regard to the renewal at the end of the 10 years?

Col. FORSYTH. That the Government would consider favorably such an application for renewal of the lease at the expiration of the first 10 years. Nothing, however, has come of that proposition.

The SECRETARY. No further reply?

Col. FORSYTH. No, sir.

The SECRETARY. I think perhaps I might take this occasion to say that there has been some report or rumor to the effect that during previous administrations, the proposal to construct a new hotel in this park had been discouraged or at all events that the terms, perhaps, had been discouraging, on account of the fact that they were limited to a yearly lease.

If any one has any misapprehension on that score as to the attitude of the present administration—I can not speak accurately as to the rumors of the past, of which I have no knowledge, but if any one has any misapprehension as to the attitude of the present administration, I may just as well set it at rest now. So long as I am Secretary of the Interior, propo-

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sitions of this sort will be received with pleasure and discussed absolutely on a business basis, recognizing on the one hand that the investor must be given a sufficient assurance—a sufficient return to make it worth his while to make the investment and on the other hand, that anything in the nature of unnecessary or extortionate charge on the traveling public will not be tolerated, but will have to be governed by effective regulations. Reconciling those two propositions, there is no reason—and there has been none during the last year and a half—why a proposition for a hotel in this park should not have been made and pressed. If it is due to a revival of the old rumor, I take this occasion finally and definitely to set it at rest.

The necessity of having much larger and much more modern accommodations than those that exist here is apparent to all of you. The present accommodations are very comfortable in many respects, but it is perfectly clear that they can not take care of a very considerable traffic that would like better accommodations and that they can not take care of the travel that ought to come, and, in my judgment will come to this park during the fair at San Francisco, if the accommodations are here, and that will not come unless the accommodations are here. I don't know whether we had better discuss that matter now or later—perhaps later. I take this occasion to mention it, so that anyone here who is interested in the subject may understand that before the conference ends, if they want to discuss the question publicly, as to the character of the terms, what they ought to be, whether any of those that have been suggested by Col. Forsyth ought to be modified by the department, either in the interest of the public or in the interest of the concessioners, this is the occasion to discuss it, and an opportunity will be afforded later.

The SECRETARY. Perhaps we had better go on right now to a consideration of out next largest park, the Glacier Park. If Mr. Chapman will tell us about the conditions up there in that new park, which is so popular with those who have been to it, and which is but in the making, we will be interested in hearing him.

Mr. CHAPMAN. Mr. Secretary and members of the conference, the Glacier is the newest of the parks—the baby. It is not the baby in size, because it is larger than this and somewhat smaller than the Yellowstone, approximately between fourteen and fifteen hundred square miles in area. It is a country that I was familiar with for a number of years in the work of the Geological Survey, and it lies in Northern Montana, north of the Great Northern Railway, the only railroad reaching the entrances of the park to-day. I was sent to take charge of it the middle of last May. It is a very mountainous region, with elevations ranging from just below 3,100 to nearly 10,500 feet, and a great mountain range through the middle of it, dividing it into eastern and western portions. There is no means of communication across that mountain range for about seven months in the year except snowshoes—that is, north of the

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Great Northern Railroad—so that for part of the time it is practically inaccessible. It was made a park in 1910.

During the year 1911 a certain record was made of the visitors to the Glacier National Park. Those records, partly estimated, show that about 4,000 people visited the Glacier National Park. The estimates were high, in my opinion. This year between the 1st of May and the 1st of October we have had approximately 6,300 people. That is a record and not an estimate, which shows, to my mind, quite a healthy growth. The visitors that come to the Glacier National Park are confronted with conditions, particularly that of transportation, which are very primitive. I spoke of the inaccessibility of the mountain range for several months in the year. There are several trails across that mountain range which have existed for a number of years. They are trails which have been developed by the game, the Indian, the hunter, and explorer, and finally the tourists have come to use them. There are practically no wagon roads in the park, considering it as a whole area. There is a wagon road for about 55 miles from the Great Northern Railroad through the western side of the park to Canada. The first 5 miles of that road it is better to walk over than to go over in a wheeled vehicle of any kind.

It was constructed in the first place to take in machinery for developing early oil prospects. There is a wagon road on the east practically parallel with the boundary and a few miles outside the park, and a few rough roads that have been used to transport wood from the canyons east of the range. With the appropriation of last year (1911) a road was constructed from the western entrance of the park, Belton, a little less than 3 miles, to Lake McDonald. That has been macadamized and is now in first-class condition. During the present season and since May the Great Northern Railroad has constructed on the east side, from Midvale, 27 miles of road, which they call a motor road. That road is entirely in the Indian reservation. From the Indian reservation line to the town of St. Mary, a distance of 5 miles within the park, a road has been constructed by the Great Northern under contract with the Government. Those roads were practically done by the middle of July, although only begun in May. The traffic has been light because we have had a villainous season of rain, and part of the time the roads were practically impassable. Between those roads and across the range, as I said, there are numerous trails which have been inherited from the Indians. There is one route which is very picturesque and quite famous. That is through the Gunsight Pass. During 1911 this route was improved somewhat, and this year I began as soon as the appropriation was available to make a first-class trail, and that would have been accomplished but for the early snows. The first snows came the end of August. They have continued intermittently ever since, and about three weeks ago the trail crew came out and said they wouldn't stay there any longer for any consideration, which stopped operations for the year.

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We have a large variety of game in the park, most of which is increasing in numbers—the moose particularly, and the sheep and goats. We do not try to segregate the sheep from the goats; they do that naturally. Last winter was a severe winter and we lost a number of deer on account of the heavy snows. In the spring we began opening up many of the trails as best we could, chopping out the timber that had fallen in, to get them open for tourists, and since then we have been trying to improve them. Quite a number of persons years ago asked me whether it would be worth while to go to the Yellowstone National Park if they had already seen the Grand Canyon of the Colorado River in Arizona. I told them it was worth while. There are a great many things to be seen in the Yellowstone that do not exist in the canyon, and so far as the Canyon of the Colorado and the Yellowstone are concerned, they are not alike at all. They are on different scales. Some people have asked me if it was worth while to see the Glacier Park or the Yosemite if they have seen the Yellowstone. I always advise them yes. One woman last year asked a guide, "What have you got to see in the Glacier Park besides mountains and a few animals? Down in the Yellowstone they have all sorts of interesting things," and she referred to the old story of standing on a rock catching fish in one pool and cooking them in another. The guide said "Yes; I have heard of that place, but I can take you to a place in Glacier National Park where you can catch your fish in one stream and just turn around and freeze him in a glacier."

The accommodations in parts of the park are primitive and in other parts do not exist. On the eastern side of the mountains the Great Northern has a number of chalet camps, some of which were taxed to their greatest capacity this year. On the west side, the older entrance to the park, there are several very comfortable hotels, most of them of the cabin colony type with large individual buildings, where a large number of people have been taken care of.

In the development of this park the one thing that is essential is the opening up by roads and adequate trails of the area for travel. In my opinion, a large mileage of roads as considered with the area of the tract will not be advisable—two, or possibly three, roads across the lesser passes of the main ranges to allow people who are not able to ride horseback to pass through some of the finest scenery.

Between these roads large areas should be crossed by trails for the use of saddle and pack horses, and even then there will be considerable areas that are accessible only to those on foot.

There will always be a variety of pleasures and amusements in the natural out of doors. I think that is all I can say, Mr. Secretary, giving you an outline of the conditions.

The SECRETARY. Last year there was some legislation, Mr. Chapman, with regard to the site of a town and hotel at Midvale, in the Blackfeet Indian Reservation. What steps, if any, have been taken by the rail-

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road company toward the actual development of accommodations at Midvale?

Mr. CHAPMAN. The act of Congress giving it the right to purchase that ground was passed, and the railroad company selected the major portion of the town site of Midvale, which had been established previously in the Indian reservation. It immediately took steps for the improvement of their property. It is building a hotel there of very extensive proportions. It will be a very beautiful and attractive building, both the interior and exterior. On the outside, on both faces, there are columns, about 40 feet high, of the great fir trees from the State of Washington. The interior is a little on the plan of the old Palace Hotel, with galleries around a large gathering room, which will be three stories in height. At each end they have a large fireplace, and toward the middle of this great room they have a concrete hearth on which they will have a camp fire burning, with proper arrangements for removal of smoke. They have an adequate dining room, but they have a limited number of bedrooms, there being only 70 rooms, I am told. That building has not been completed yet. During the present season tourists were accommodated at the camp, in which the sleeping accommodations were the canvas collapsible, portable houses. They had an adequate number of those, but the situation is very windy, and they were not very comfortable, although the bedding and everything of that nature provided was of the very best. They have one frame building which is used for a gathering hall and for the dining and cooking of the establishment.

The SECRETARY. Is there anything else that any one wants to ask or call attention to in connection with the Glacier Park?

Mr. CHAPMAN. I would be very glad to answer any questions if I can.

The SECRETARY. The next park in size, I believe, is the Mount Rainier. We have been following that line, to some extent, together with the historical question, and if the representative of Mount Rainier, Mr. Hall, is here, will you tell us something about the conditions in that park.

Mr. HALL. Mr. Secretary, we have not been doing any work in the park this year on account of lack of funds, and I don't know if I have anything of particular interest to say, if you will excuse me. This year we had an attendance of about 9,100; last year we had 10,306.

The SECRETARY. What was the condition of your roads in the park this year?

Mr. HALL. Very bad this year, on account of heavy rains.

The SECRETARY. What appropriation did you get?

Mr. HALL. $40,000.

The SECRETARY. Was that in this year's appropriation?

Mr. HALL. No; that was not available until about the 1st of September, I think.

The SECRETARY. Then it was in the appropriation bill for 1912–13?

Mr. HALL. Yes, sir.

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The SECRETARY. What did you have for the year 1911–12?

Mr. HALL. $5,000. That was mostly for maintenance.

The SECRETARY. Now, what is the condition there with regard to the hotel question?

Mr. HALL. The hotels are very good.

The SECRETARY. Are they giving, generally speaking, adequate accommodation for the travel that comes there?

Mr. HALL. Oh, yes; there are about 60 tents, in addition to the hotel.

The SECRETARY. Are the accommodations such, and the use of the tents such, that you think that has any bearing upon your attendance? In other words, would you have more attendance if you had better accommodations?

Mr. HALL. Yes, sir; I presume we would—there would be more automobile travel.

The SECRETRAY. There has been some question with regard to a short road just outside the park boundary that I would like to have you tell us about.

Mr. HALL. Well, that is in the forest reserve and there doesn't seem to be any funds for keeping it up.

The SECRETARY. What kind of a road is it?

Mr. HALL. It is a very poor road. It is not brought up to the grade that the engineers placed, I believe. There is no drainage. It is right through a young forest and has no opportunity to dry out.

The SECRETARY. Who owns the road—where is the title?

Mr. HALL. The title, I believe, is transferred to the War Department engineers.

The SECRETARY. Is it in a national forest?

Mr. HALL. No; it all goes through patented land, but the owners have all given deeds to it, all but one person, I believe.

The SECRETARY. Well, has there been any discussion or attempt to have the local authorities take jurisdiction over that road?

Mr. HALL. No; I don't know that there has. I recommended it once or twice, but I don't think there has been any action at all.

The SECRETARY. Where does that road lead?

Mr. HALL. It leads to the park.

The SECRETARY. And from what?

Mr. HALL. From the outside cities.

The SECRETARY. Well, is it one of the principal roads?

Mr. HALL. Oh, it is the only road there is—only road leading to the park.

The SECRETARY. It is the principal means of entrance to that park?

Mr. HALL. The only entrance—only road.

The SECRETARY. Now, as I understand you, the title is in private hands—land on either side is patented land?

Mr. HALL. All patented land—Northern Pacific and settlers.

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The SECRETARY. Has there been any attempt made to get those people to join in taking care of the road?

Mr. HALL. They have all given deeds to the right of way except one man holding 160 acres.

The SECRETARY. You say the road has been transferred to the jurisdiction of the War Department?

Mr. HALL. I understand the deeds were made transferring the right of way to the War Department. The road was constructed by the War Department.

The SECRETARY. All the adjoining territory, I understand, there, is a national forest, and that this patented land is inside the national forest?

Mr. HALL. Yes, sir.

The SECRETARY. The Government does not own any of the frontage on either side of that road?

Mr. HALL. No.

The SECRETARY. Now, we have several systems that Congress uses in regard to national park appropriations in regard to roads. For instance, I understand in this park that you, Col. Forsyth, have charge entirely of road construction here under the appropriation for road construction.

Col. FORSYTH. Entirely.

The SECRETARY. I understand, Col. Brett, that in the Yellowstone Park that is not true at all, but that the expenditures for road construction are entirely under the War Department Engineer Corps?

Col. BRETT. Yes, sir.

The SECRETARY. What is the situation at Rainier? How is the money spent there?

Mr. HALL. By the Engineers of the War Department. They built the road and the Interior Department is keeping it up.

The SECRETARY. You mean the portion of the road inside the park?

Mr. HALL. Yes, sir; inside.

The SECRETARY. But Congress does not give any appropriation for the road outside?

Mr. HALL. No, sir.

The SECRETARY. I believe the city of Seattle and others of the cities there are very much concerned in regard to Mount Rainier Park—have urged that we should do all we can to improve the park and make it accessible and attractive, in which we entirely concur. I would like to hear from any representative of any of those places, if there are any here, with regard to what suggestions they have in regard to that short stretch of road. I am told it is one of the obstacles to effective development and use of that park.

Mr. MARTIN. Mr. Secretary, the ci ties of Seattle and Tacoma have joined hands, strange to say, in recognition of the great value of Rainier National Park, and in joining hands we promulgated a policy that the two cities joined in. A copy of that was lodged with your department last year.

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Coming particularly, however, to this road, this 3-mile stretch of road, it is one of the vexing questions, one for which there seems yet awhile no practical solution, because the roadway seems to be without status. There was quite a debate in Congress, or, rather, before committees, during the last session, and very strenuous opposition developed in this committee hearing to any sort of appropriation for the road outside of the park, because it passes over patented lands, and while it is true, as Mr. Hall has reported, that the owners of that land have deeded right of way to the War Department, Congress has never accepted that right of way, so that really the road is without status. We were apprised only recently of an appropriation coming out of the revenues of the forest reserve, available now, as we understand, to be spent through the Agricultural Department for the construction of roads entirely within forest reserves. The amount of money available now in that fund is approximately $12,000. As we understand the matter, our forester asked the district forester at Portland for instructions regarding the spending of that money. The district forester at Portland referred the matter to Chief Forester, Mr. Graves, at Washington, and Mr. Graves, at Washington, referred it to the governor of the State of Washington to know what recommendations he had in the matter.

Through the policy of joined hands between Seattle and Tacoma, Seattle and Tacoma agreed that if that money be available that it could be spent, so far as Tacoma and Seattle had will in the matter, for that 3-mile stretch of road. So we have jointly appealed to the governor to make recommendations along that line, and the governor replies that he has referred the matter to his State road commission. So, Mr. Secretary, that is the way that road and its possiblities and our hopes are bounding about. Pierce County, the county within which Rainier National Park exists, has spent something more than a quarter of a million dollars in a roadway leading from Seattle and Tacoma to the forest boundary, and this is the crack in the bottle—this little 3-mile stretch, of road. So far we have not yet been able to solve the problem. I hope that some solution may grow out of this conference and your further consideration of the matter.

The SECRETARY. What practical suggestion have you to make?

Mr. MARTIN. We have almost reached that willingness, as desperate as it seems, to ask Congress to recede from its technical position in the matter of the deeded right of way, which has never been accepted. If Congress officially decides that no money can be used for this road out of the $40,000 now available, our disposition is to ask the Government to recede from its technical position as to the right of way and allow it to revert to the State, so that in the end the State, jointly with Pierce County, possibly with our good friends from Seattle, may work out some way of repairing that 3-mile stretch of road and making the park available.

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The SECRETARY. That is, if that 3 miles would make an ordinary highway?

Mr. MARTIN. It would be improved. I have conferred with our commissioners and they are disposed to that idea. In other words, if Congress recedes the right of way I think we could work that problem out. I want to make it very plain, though, that I do not speak with any definite authority, because there has been none given me and could not be yet awhile, in fact; but we will arrange that so that we can make that definite deal if it seems best.

The SECRETARY. Why is it necessary to have Congress take any action on it at all? How long has it been since the deeds were given?

Mr. MARTIN. I think some four years.

The SECRETARY. Congress has not acted upon it, has it? I mean, why don't the deeds fall by lack of acceptance?

Mr. MARTIN. Well, that is a technical question that we would like to have a ruling on. If they have by disuse reverted, that would give us status.

The SECRETARY. It appears to be a matter, as you see it, upon which nothing can be done unless we get action by Congress at the next session?

Mr. MARTIN. We have a sort of lingering hope on this $12,000, but that is not very strong.

The SECRETARY. Do you know anything about that situation?

Mr. MARTIN. No, sir; I think the Secretary of Agriculture will depend upon the recommendation of the governor as to where that money is to be expended.

The SECRETARY. I do not think that is a true disposition of any part of that 10 per cent. That is not a State highway. It is a proper part of the national park development, and it should be handled by direct appropriation from Congress to build that road.

Mr. MARTIN. If it should revert, Mr. Secretary, it would become a State highway. I apprehend it would be available, would it not?

The SECRETARY. I do not know.

Mr. MARTIN. I understood from Mr. Adams that money was to be available for the State highways.

The SECRETARY. If the Forest Service were in the Department of the Interior I would answer your question, but I do not like to anticipate the ruling of my colleague, Mr. Wilson. That act provides that the money shall be expended in furtherance of the State highway system and from discussion at the time the amendment was offered, and the statements made by Congressmen interested in it, it was perfectly plain they contemplated giving assistance to States for continuing the extension of the State highways system through national forests, in view of the fact that certain sections were deprived of revenue from taxation on private property, on account of the reserved land; and while this, of course, might be said to be an extension of a State highway in that it is

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extended from a portion of the State highway, its sole purpose is to develop the park and contribute to the use of that park. Therefore, for that reason, I think it a perfectly proper thing for Congress to recognize it as an expenditure incident to the administration of the park, and I would suggest to the gentlemen from Seattle and Tacoma that they direct their energies toward getting their Congressmen to see that point.

Mr. MARTIN. That is one of the things our Congressmen have been trying to do, and if that money is not available—I am frank to say that our hope of it is rather selfish—I don't know but what drastic measures would be best for all of us—if there be yet a claim by the War Department, to ask them to settle that.

The SECRETARY. Is it a very expensive highway to construct, Mr. Martin?

Mr. MARTIN. No; there will be very little rock work, comparatively speaking. Indeed, I think a matter of $15,000 to $20,000 would make it a perfect road.

The SECRETARY. Is the rest of the road good enough for satisfactory use by automobiles?

Mr. MARTIN. Yes, sir; they work with the greatest of satisfaction. I want to say, though, in emphasizing the wretched condition of that road—the three miles—the entire traffic for the season just closed has had to turn away from that road—it has been absolutely barricaded, and they have had to turn away and go through an old road in the forest as rough as that was, because it was absolutely impassable.

The SECRETARY. Now, one of the questions you people are interested in is the automobile question—the question of transportation to and into that park, and we will see what you have to say on that proposition later. But is there, in your judgment—I wish you would consider it—in your judgment, is there any way of imposing a satisfactory financial burden on automobiles that would take care of the construction or maintenance of that road?

Mr. MARTIN. The tax on the automobile traffic now is possibly as heavy as it would stand.

The SECRETARY. What is that tax?

Mr. MARTIN. It is $5 for the season.

The SECRETARY. I find out in the West that they collect more than that for an ordinary hired chauffeur who exceeds the speed limit a few miles. [Laughter.]

Mr. MARTIN. Our minimum on that, Mr. Secretary, is $25, but there is a very good revenue on it. Our fee of $5 covers the season. I don't know that it would be possible under some levy of that kind to produce a quick fund that would be necessary. In time it would accumulate. If I may say so, I don't know if I understood you correctly in the matter of general opinion upon the automobile traffic, Mr. Secretary, in Mount

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Rainier National Park. That, I understand, will come up later. If you care to hear from me further, I would be very glad to express what I believe to be Seattle's and Tacoma's views.

The SECRETARY. I think we had better reserve that for general discussion. I may say I think the most helpful way of discussing the automobile questions would be first to consider the general principle applicable to national parks and then to see how that would apply to individual parks, taking this park, perhaps, for the one immediately concerned; but I think perhaps we had better defer that until we take that question up.

The SECRETARY. Now, perhaps, we had better hear from Crater Lake, Mr. Arant.

Mr. ARANT. Mr. Secretary, I was not expecting to be called upon to respond for Crater Lake, but was advised by the chief clerk's office to prepare a little paper.

The SECRETARY. Have you the paper with you?

Mr. ARANT. My paper is at the hotel, but I can present it any time and I believe that the interests of the conference will be conserved by my not occupying the time orally to take up the different questions concerning that park and discuss them and I believe it would save time and be to the best interests of the park for me not to do so.

The SECRETARY. Very well; we will postpone for further discussion the Crater Lake Park for the present time.

The SECRETARY. Now, Mr. French, we will hear from you on conditions at the Platt Park.

Mr. FRENCH. Mr. Secretary, I, like Mr. Arant, have prepared a paper, which I will present.

The SECRETARY. I think you had better read it.

Mr. FRENCH. I am in about the same condition I was last year. I caught a terrific cold here.

The SECRETARY. Would you like Mr. Kelly to read it for you?

Mr. FRENCH. Yes, please.

The SECRETARY. It occurs to me that perhaps Mr. Myers, of Hot Springs, can give proper emphasis to that paper. We are going to invite you to read Mr. French's paper for him.

Mr. MYERS (for Mr. French). Located farthest south of all the national parks of the United States is the Platt National Park with its picturesque Travertine Creek, made up of a succession of murmuring waterfalls.

Just to sit on the banks of this pretty stream and listen to the music of the songs it sings will soothe into the land of dreams the sufferer from insomnia, and make the tired business man forget his cares. But this is only one of the assets of this little park. Its varied assortment of mineral and fresh water springs make up a "water cure" for the tired, worn-out body that can not be excelled in any park in the whole country.

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In the city of Sulphur, near by, the sulphur water is administered in the form of baths, thus greatly facilitating the cures. One of the crying needs in the park is the establishment of a number of bathhouses in which the waters from the natural sulphur springs should be used. That supplied the bathhouses now existing in the city is obtained from artesian wells. Any bathhouses which might be erected inside the park should be owned and controlled by the Government, but if it is determined that it is against the policy of the United States to erect bathhouses in any of the parks, some form of agreement should be entered into with individuals who would be willing to operate these bathhouses under the supervision of the Secretary of the Interior.

The fresh-water springs constitute the source of the Travertine Creek and are 98 per cent pure. One of them bursts out of a group of solid rocks in a hillside, while the others boil up in a bed of sand. These are called the Antelope and Buffalo Springs, because of a legend handed down by the Indians to the effect that antelope and buffalo formerly came down in droves from the surrounding hillsides to drink from these springs.

Up to the present date the appropriations for this park have been insufficient to make any marked improvements within it, the principal expenditures having been made in the construction of bridges that were indispensable and in the building of roads and trails that were absolutely essential for the accommodation of visitors. Some necessary repairs have been made to springs, park residences, pavilions, etc., but, as a whole, the park is still in a rough and undeveloped state.

In my opinion the first requisite toward the improvement of the park is the employment of an engineer to make a survey and establish grades. He should lay off roads and trails and furnish blue prints and specifications of the work to be done preparatory to landscape gardening and permanent improvements, so that all expenditures made would be of a permanent nature.

The park is sadly in need of an administration building that would comport with the dignity of a national park of our country. The one now in use was originally constructed by two old Germans as a summer camping house. It is cheaply constructed of rock and lime and sand cement and is loosely put together, which makes it available as a harbor for rodents, thus rendering it unfit for an office both because of its being unhealthy to occupants and dangerous to records. The building is very inconveniently located for an office, and a new and convenient location should be selected and a suitable and sightly administration building be erected.

In the latter part of 1908 Mr. R. L. Rogers, of the Forest Service, made an examination of the park with a view to ascertaining the practicability of reforesting certain portions and early the following year made a complete report covering his findings, but to date very little has been accom-

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plished along this line. The former superintendent, Mr. A. R. Greene, planted a number of young trees along the roadsides in the park in the spring of 1909, but the extreme drought that visited the section of the country in which the park is located during that year killed all but one of the trees that were planted before they could get a start. During the past summer about 70 young trees were planted, all of which are still living, with exception of about 8 or 10.

This matter has recently been taken up with the district forester at Albuquerque, N. Mex., with a view to supplying the park with trees of suitable variety for this locality, and an allotment has been obtained for the purpose of setting them out in parts of the park where they are likely to thrive.

In connection with the system of reforesting the park and the eventual laying off of garden spots for ornamental purposes I have worked out a plan for irrigation which would be of great benefit during years when droughts occur. The system is to bring the water down from Lake Placid by gravitation to East and West Central Parks and other portions of the park. Such a system would save expense in obtaining and replanting young trees and shrubs, which would otherwise die after having been set out before they could adapt themselves to the new soil and obtain sufficient growth to enable them to live through hot, dry weather.

Owing to a lack of system in enforcing the city ordinance regarding loose live stock in the city of Sulphur, horses, cattle, and other domestic live stock often run at large and stray into the park, where they do considerable damage. During the entire life of the park it has required considerable time of the rangers to keep stock driven out of it. Even this availed but little, as nothing could be done to prevent them from coming back. The former superintendent had a fence built around the park hoping to relieve the situation and leave the rangers free for other duties, but the stock continue to come into the park, breaking down the fence in order to get into the better pasture, which requires continued repairs to fencing and considerable difficulty in getting the stock out of the fenced inclosures. The owners of the stock seem not at all concerned over the situation, and I have thought it would be a good plan to establish a pound inside the park, in which all animals found therein might be impounded, requiring the owners to pay a 50-cent fee, as well as all expenses incident to the taking up and detention of such animals, including the cost of feeding and caring for the same. Such a plan would probably abate the nuisance, allowing the rangers time for other duties, and lessening the probability of destruction to young trees and shrubs. This should provide for the sale of unclaimed stock.

In conclusion, I might add that the Platt National Park is one of two or three parks available as a resort during the entire year, and one of about two within reach of the middle classes of the South and Southwest, and as such it should be promptly developed and made attractive for

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their pleasure and comfort. The park is especially endowed by the Creator for the inspiration and uplift of all who are privileged to behold its beauties, and no man possessing the proper appreciation of the beauties of nature can visit it and go away without feeling mentally, morally, and physically improved, even should the curative value of the waters be not considered, but contemplating the marvelous cures that have been effected by the use of the waters that abound in this park leads me to hope that the benefits that are to be derived from them may not for much longer be hindered or impaired for lack of proper advertisement, which can be effected in only one way, namely, its appropriate development and improvement, thus rendering it attractive and agreeable to the visitors who annually seek rest and recreation within its boundaries.

The SECRETARY. We will hear from Mr. Shoemaker, of the Mesa Verde Park, now.

Mr. SHOEMAKER. I did not come prepared to make a speech or anything of the kind, gentlemen, but I can give you an idea of a few of the features of our park and what has been done since I have been there. I took charge a year ago the 1st of this month. I have had very little money, but what I have had I tried to put to good use. I repaired the road for about 14½ miles on the Mesa. I have repaired some of the cliff dwellings and built some few trails. I let contracts just before leaving home for the completion of the road. In this park there are some 400 ruins, some large, some small. The largest is about 280 feet long, with 214 rooms in it—a large cave in Wild Rock Canyon, hard to approach for the reason that we have nothing but trails so far. It will be remembered that this is a very new park and very little has ever been expended upon it.

The SECRETARY. How was the attendance last year, Mr. Shoemaker?

Mr. SHOEMAKER. Very good. We had some 480 visitors this last year.

The SECRETARY. How does that compare with the year before?

Mr. SHOEMAKER. It exceeds the year before by 180.

The SECRETARY. How far is it from the nearest railroad station to get to Mesa Verde?

Mr. SHOEMAKER. By the main road it is 29 miles; 12 of that you have to go on horseback.

The SECRETARY. The principal attraction of the park is what—the ruins?

Mr. SHOEMAKER. The ruins and the canyon, and the wonderful view from the top of the mountain. When you rise onto this point of 8,500 feet you see all of the Montezuma Valley. It is laid out before you there just like a checkerboard. Just to the south you see the Ute Indian Reservation; the line of mountains running north and south, clear through, for 150 miles.

The SECRETARY. What is the character of the ruins?

Mr. SHOEMAKER. They are of stone, altogether.

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The SECRETARY. What were they? Separate dwellings or community buildings?

Mr. SHOEMAKER. As a rule, they lived in small communities.

The SECRETARY. How extensive are they?

Mr. SHOEMAKER. Well, it is supposed that the roads on top of the Mesa extend about a mile—the principal ruins are in the caves. Those that have been renovated and cleaned up are the most interesting, of course, because they show exactly how these people lived.

The SECRETARY. What population is it estimated at one time lived there?

Mr. SHOEMAKER. Variously estimated at from 10,000 to 15,000 souls on the Mesa.

The SECRETARY. How about the cliff dwellings?

Mr. SHOEMAKER. In those cliff dwellings, it is supposed from 200 to 400 people in each cliff dwelling.

The SECRETARY. How many such dwellings are there?

Mr. SHOEMAKER. Three principal dwellings that are now in repair.

The SECRETARY. Did you ever have any exploring parties out there this summer?

Mr. SHOEMAKER. I have done a great deal myself, with my two rangers—found a great many new ruins.

The SECRETARY. Didn't have any parties there from any of the universities or colleges?

Mr. SHOEMAKER. No, sir; not this year.

The SECRETARY. There were some applications.

Mr. SHOEMAKER. Some people went in there from The Hague in Holland, and they expect to come back again. They were very much interested.

The SECRETARY. What is your total appropriation for the last year?

Mr. SHOEMAKER. This year?

The SECRETARY. Last year and this year—how did it compare?

Mr. SHOEMAKER. This year $15,000. Last year we had a remnant of $1,600 to spend on the road.

The SECRETARY. Is there anybody that wants to ask any questions or have anything to say with regard to the Mesa Verde? If not, we will take up the next we have on the list—the Sequoia and General Grant Parks, Capt. Whitman.

Capt. WHITMAN. Mr. Secretary and gentlemen, in speaking of the Sequoia and the General Grant, I won't attempt to describe the topographical or natural features of it, as they are already described in a circular, further than to say that the tremendous forests of giant sequoia trees, the range of mountains, the deep canyons, the trout streams, and the coverts of wild game, make that little piece of America fully as picturesque as many European resorts, to which thousands of our tourists go each year and in which they spend their money.

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It seems to me that the people of San Francisco and Los Angeles and other California cities, both native and visitors, should be enabled to penetrate these parks by a nice run by railroad, and from there have their path made so easy that they may reach these attractions by wagon or motor in comfort and find good accommodations at their journey's end. At the present time these conditions are far from being so. The traveler to these forests, after leaving the railroad, is confronted now with 45 miles of road, most of it in miserable condition, especially the county road, which he has to traverse at a snail's pace through stifling dust.

The administration of the park, as it is now, is not economical. The history of the Sequoia Park shows that it has practically a new man in there each year. The funds that are asked for by one superintendent for the development of some object are partly spent and the next year his successor abandons the scheme. The necessity of some commission or bureau to follow the line of development that can be made to tell is apparent, and has been desired by everyone who has touched upon the subject.

The first necessity is road improvement. Road improvement is always a good investment. I consider it feasible to build a good automobile road in the Sequoia Park separate from the wagon road. Such a feature is not difficult from an engineering standpoint and would tend to open the park to the public. The parks are set aside for the benefit of the people. They are the heritage of the American people, and it is my belief they should be made better acquainted with them. As a matter of road improvement, the Interior Department has faithfully kept up the Giant Forest Road from the park gate to its terminus, but it is difficult for the superintendent, especially a new man, to work in harmony with the county supervisors to connect that road with the railroad. This could be, of course, more effectively done by a commission that represented the United States than by an individual who is a stranger there each year. Then the next important item, in my opinion, is the acquisition by the United States of the patented lands which lie in the park. The holding of these lands makes it impossible for roads to be developed through the park. The question of rights of way and expense arises at once, and regulations for the government of the Sequoia Park should apply to every square foot within its boundaries. As it is now, the rights of parties are trespassed upon, as they believe, and if the Government of the United States does not acquire these it will not be long before individuals will be cutting down the big trees, which they apparently have a perfect right to do, and ruining the streams, and thus defacing the park and making it less attractive.

The SECRETARY. What is the total area of the park?

Capt. WHITMAN. I will ask Mr. Fry that question.

Mr. FRY. Some 200,000 acres.

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The SECRETARY. And what part of that is in the private holdings, or does that include the private holdings?

Mr. FRY. Including some 3,900 acres of private land. Prices were obtained upon these some years ago by one of my predecessors at the rate of an average cost of $20 per acre. The man who held the principal holding stated it would go up $5 an acre each year, and he says it is now worth $65. So, as a measure of economy, it is patent that the Government should take this without any further delay.

The SECRETARY. Are these private lands all heavily timbered?

Mr. FRY. They are beautifully timbered, and in most all the cases they control the prettiest canyons and headwaters of the streams—a few level places in the park through which our roads would penetrate if pushed to completion.

The SECRETARY. What are your hotel conditions?

Mr. FRY. They consist simply of tent accommodations. The construction of a road which would permit automobiles to come in would not only bring in visitors, but, as a natural corollary, the erection of hotels would follow and that would tend to swell the revenues of the park, which should be properly managed by a park commission. The American people, in my opinion, have outgrown the stagecoach habit, and the automobile is a factor that will have to be recognized, and in that park particularly I should strongly advise that its admission be encouraged.

The SECRETARY. Not intending to anticipate the automobile discussion, I would like to know if any estimate has been made there about the location or cost of a separate road such as you have recommended.

Capt. WHITMAN. An estimate has been made with Mr. Fry's assistance and submitted to you in my annual report.

The SECRETARY. And what, in round figures, was the estimate?

Capt. WHITMAN. $40,000.

The SECRETARY. How long a road?

Capt. WHITMAN. To connect the roads that already exist.

The SECRETARY. Would that make a separate line of roads for automobiles?

Capt. WHITMAN. Yes, sir; the entire length.

The SECRETARY. And leaves an available road equally attractive for horse traffic?

Capt. WHITMAN. Yes, sir.

The SECRETARY. Is there anything else, Captain?

Capt. WHITMAN. The only other important thing I can think of is to emphasize the need of more efficient game protection. There is no penalty now attaching to the killing of the deer except the ejection of the offender and the confiscation of his outfit; but the chances for detection are so small that it simply adds zest to the sport. Once his deer is killed and got across the line he is perfectly safe. I strongly

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recommend that Congress be called upon to place that park on the same status as the Yellowstone, where the offense can be punished by fine and imprisonment.

The SECRETARY. No such law exists at present?

Capt. WHITMAN. Nothing at the present except what the superintendent makes.

The SECRETARY. Simply regulations?

Capt. WHITMAN. Yes, sir; totally inadequate. As to the question of a bureau or commission under each department of the Government that could officially act I don't feel prepared to answer, except that my business relations with the Interior Department make me in favor of that commission being under the Secretary of the Interior.

The SECRETARY. Has anybody anything to suggest or questions to ask?

Capt. WHITMAN. As I am acting superintendent of the park only during the summer months and Mr. Fry is there during the balance of the year, I should like to have him supplement my remarks.

The SECRETARY. Mr. Fry, if there is anything you would like to call to our attention about the remainder of the year, we would like to hear it.

Mr. FRY. Mr. Secretary and gentlemen of the conference, my ideas fully concur with those of Capt. Whitman in all that has been said, so I will not discuss any of those subjects to which he has already called attention, but I wish to say that we have had a very pleasant season in both the Sequoia and General Grant National Parks; we have had no fires of a serious nature. The military troop that was stationed there performed its duties well; I do not believe Capt. Whitman received during his administration, and I have not received since, one complaint with reference to the administrative matters of the parks. The number of tourists entering the park this season exceeded that of any other previous year. That was notwithstanding the fact that at the beginning of the season our camp concession for the Sequoia Park expired during the month of April. It was impossible to procure other parties to take up a concession until well into June, and word went out throughout the San Joaquin Valley that there would be no accommodation there. During June two persons obtained concessions, one for transportation and the other for hotel accommodations, and there were no complaints made that the transportation facilities were bad. There were objections raised on the ground of the infrequency of the trips, but we have had this year, in both parks, up to October 1, near 6,000 people, the Sequoia Park receiving about 600 more tourists than the General Grant.

The important subjects that I would like to bring to the attention of you and members of this conference pertaining to the Sequoia and General Grant National Parks—I would like to hear them discussed and like to hear them disposed of—one is the creation of a national park bureau, in order that the park work may become more systematized. We all know what it is at the present, so it is useless to dwell on the sub-

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ject at the present time. Another is the elimination by Government purchase of the deeded pieces within the reservation. We have some 4,000 acres of deeded possessions within the reservation that should be purchased by the Government in the interest of the preservation of the magnificent forest. It would also go toward the improvement of the park and the benefit of the tourists to enforce sanitary regulations, and another important thing would be the enactment of a law providing a penalty of both fine and imprisonment for the violation of park regulations. It would keep down depredations and it would be in the interests of game and bird life. Another thing that I would like to bring to your attention is the advisability of admitting automobiles on the Giant Forest Road in the Sequoia National Park. Many requests are coming, calling for that permission and the extension of long terms to persons taking up concessions, in order to encourage large investments, making more efficient service. Now, Mr. Secretary and gentlemen, I believe those are the important subjects I have to offer. Thank you.

The SECRETARY. Mr. Ziebach, we would like to hear from you about Sullys Hill—what the conditions are since last year and what particular matters, if any, you think should be called to our attention.

Mr. ZIEBACH. Mr. Secretary, the Sullys Hill National Park, I think, is the baby of all the parks.

The SECRETARY. You mean in size?

Mr. ZIEBACH. It is only a small park of 1,000 acres, and it was created a park by act of Congress of 1904, and no appropriation has ever been made, and as acting superintendent and connected with my other work there I have made hundreds of recommendations for improvements but do not seem to have gotten anything.

The SECRETARY. How appropriate do you think it is to keep Sullys Hill as a national park?

Mr. ZIEBACH. I would recommend that the park be abandoned.

The SECRETARY. Do you think the park ought to be entirely abandoned as a park, or do you think the city or local authorities might maintain it?

Mr. ZIEBACH. I suggest that park be turned over to the Forest Service as a part of the national forest.

The SECRETARY. Is there a national forest contiguous to it?

Mr. ZIEBACH. No, sir.

The SECRETARY. It would have to be a forest of itself?

Mr. ZIEBACH. Yes, sir.

The SECRETARY. Is it really a forest in area?

Mr. ZIEBACH. Yes, sir; it is. There were no campers there at all since I have been acting superintendent there.

The SECRETARY. One of the things we suppose the park bureau might appropriately take up would be an examination of these various parks with a view of turning over to the local authorities or otherwise disposing of such parks as are not strictly national in character and where Congress

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on that account has refused to give them appropriations. You feel that is one of such parks, do you?

Mr. ZIEBACH. Yes, sir.

The SECRETARY. By way of illustration, can you tell us how many visitors you had last year?

Mr. ZIEBACH. I couldn't say, Mr. Secretary. There were a great many local visitors around in there, but it is out of the way of any tourists and there are really no attractions in there for tourists.

The SECRETARY. Have you an office force or any other means of keeping up a record of visitors?

Mr. ZIEBACH. I am acting superintendent there in connection with my Indian work.

The SECRETARY. You are superintendent of the Indian reservation?

Mr. ZIEBACH. Yes, sir.

The SECRETARY. And it is merely handled by you incidentally because there is no one else available to do it?

Mr. ZIEBACH. Yes, sir; I think I wrote to your office some time ago that we didn't even have a national flag there.

The SECRETARY. That ought to be remedied in some way—through the contingent fund if in no other way. We ought to have a flag. Have you a building to float it from, or would you have to tie it to a tree?

Mr. ZIEBACH. I think we would have to tie it to a tree.

The SECRETARY. Mr. Boland, will you tell us what the conditions are at Wind Cave this year?

Mr. BOLAND. The attendance at Wind Cave for the last year has increased—has been more than the attendance for the last two or three years.

The SECRETARY. Put that in figures for us.

Mr. BOLAND. The attendance for the last year was nearly 4,000. It is only increasing two or three hundred each year, but is increasing all the time.

The SECRETARY. How much of that travel would you say was from a distance, say, from farther away than 500 miles?

Mr. BOLAND. All of it, you might say; all of it is. All of it comes from a distance of over 500 miles—comes from neighboring cities.

The SECRETARY. What localities contribute most of the traffic?

Mr. BOLAND. Nebraska and Iowa are the two States from which the attendance is gained.

The SECRETARY. How do people come there mostly?

Mr. BOLAND. In automobiles from Hot Springs, which is about 12 miles from the park.

The SECRETARY. Do they come mostly through Hot Springs?

Mr. BOLAND. Yes, sir; they all come that way—they have to—all people who are staying at Hot Springs or passing through there and come to the park.

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The SECRETARY. Now, it has been suggested that that park is so much of an incident to Hot Springs that it might be one of the parks which are local in character rather than national. What do you think of that?

Mr. BOLAND. As it is now, of course, my park will be taken by the Department of Agriculture and made a national game preserve.

The SECRETARY. The whole park?

Mr. BOLAND. I don't know. They have made an appropriation to take it and make a national game preserve. Two men from Washington, D. C., looked over the park about a week before I started. They said there would be about 8,000 acres of my park put under fence and probably 160 acres of the land for the cave and new superintendent's headquarters at the cave.

The SECRETARY. The only natural feature is the cave?

Mr. BOLAND. Yes, sir; that people could get to.

The SECRETARY. So the travel comes there and you maintain your buildings at the entrance to the cave and the people come in and see the cave and go out and go away?

Mr. BOLAND. Yes, sir.

The SECRETARY. Mr. Boland, have you any road problems there at all in the park itself?

Mr. BOLAND. Yes, sir; I have about 6 miles of road in the park.

The SECRETARY. Has Congress made any appropriations for those roads?

Mr. BOLAND. Not this year.

The SECRETARY. What did they make last year, if anything?

Mr. BOLAND. $800 last year, for the roads.

The SECRETARY. That was merely for its incidental care?

Mr. BOLAND. Yes, sir.

The SECRETARY. Is that about the way it runs—$800 or less?

Mr. BOLAND. Yes, sir; about $800 a year.

The SECRETARY. What is the total appropriation that Congress makes for the Wind Cave?

Mr. BOLAND. $4,500 a year.

The SECRETARY. Is there anybody here who has any questions or suggestions about Wind Cave?

Mr. Arant, have you brought your paper here?

Mr. ARANT. Mr. Secretary, I was advised not to bring it in until afternoon.

The SECRETARY. You didn't get it, then? That, then, covers the list of the national parks, with the exception of that park which we always segregate from the rest. We always like to hear from Mr. Myers, of the Hot Springs of Arkansas—a park which presents many problems of great importance. It is not only a park, but a health resort of very great magnitude. Some of those problems doubtless Mr. Myers would prefer to take up at the executive session. At all events we would like to hear

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from him now as to the essential conditions and features at the Hot Springs, and as to what changes and events have occurred since our last session.

Mr. MYERS. Mr. Secretary and gentlemen of the conference, as a preface to my remarks I want to say that I have listened with a great deal of pleasure to a great deal of painful and many valuable suggestions pertaining to different parts of this great country of ours—one which was exceedingly pleasing this morning was made by the representative of the great new Glacier National Park. His designation or classification zoologically of the different animals abounding there gave me a great deal of pleasure, particularly when he went from the moose to the goat. I wondered if that was a merger that would be prominently recognized in this country at a very early date.

The Arkansas Hot Springs, as has been said by the Secretary, are a very remarkable and peculiar phenomena. There is nothing in the world like them—possibly there never will be. The Hot Springs National Reserve is the oldest in the Government, I believe, having been set aside by Congress in 1832, at which time many of you were mere youths. It is the only resort, I am told, that is self-sustaining—we are independent of Congress and its idiosyncracies. We have annually about one hundred and thirty to one hundred and forty or one hundred and forty-five thousand visitors. Our resort has increased annually for the last four years. I can account for a decrease in visits for these wonders here because of the great prosperity of the American people. Having been enlarging for the last 12 or 15 years, they have led rather a rapid life, and as the fires of the American genius are sort of quenched by too rapid a pace, they abandon the beauties of nature and come to the Parian Spring and are revived at Hot Springs. I imagine, gentlemen, that in the creation of the world the all-wise, omnipotent Creator knew that even when he created man in his own image that he was necessarily, in the course of generations, going to accumulate some perversities; that he would stay out late at night and be irregular in his habits and maybe accumulate disease; and as an antidote to all these things, in the early hours of creation, just as the dawn of day came forth, he created an antidote to this condition in the Hot Springs. He recognized the fact, evidently, that man would sometimes in the bending of the knee, in connection with prayers, accumulate rheumatism; in the bending of the elbow, accumulate neuritis; and for these accumulated diseases he fixed a place which is, in my opinion, the most valuable asset in the world.

There are 911 acres in our reservation. There are 50 springs that bubble forth as clear as if from the mountain side at a heat of 140° to 145°. This water is very palatable to drink, and there were administered last year over a million baths. A great many western people come to Hot Springs and accumulate the habit of bathing more than once a week. It is impossible in the short time that I will have your

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indulgence to enumerate the wonderful cures that are effected there daily. This very year I have observed such wonderful cures that were I to tell you, even with my well-known reputation for veracity, what they really were, I doubt that you would believe me; and, speaking of that, my friend Mr. Fee, over there, said to me that he hoped this time if I obtained an opportunity to speak, that I would not indulge in any false statements, reminds me when I was a boy in the little red schoolhouse back in Iowa. The directors one month came around and asked the class in English history who signed the Magna Charta. Unfortunately no one knew. The teacher repeated the question several times, and the last time he threw rather exceptional emphasis upon it, and he said, "Tell me who signed the Magna Charta." A little red-headed urchin sitting back of me said, "Please, sir, I didn't." When we went outside, the directors took to task the teacher on account of our unpreparedness, and little Jimmie Gallagher declaring he didn't do it. Now, the teacher said, "Don't put too much dependence in little Jimmie Gallagher. He is the biggest liar in the school. He may have signed it."

I have no doubt, Mr. Secretary, that Arkansas was the Garden of Eden. Traveling through there you come to a great big mountain of granite out of which gushes a little cold spring. This is the most stupendously glorious thing we have. It seems to me that there is not anything in the whole field of governmental affairs that contributes so much to the welfare of humanity as do these Hot Springs. When you think of the people that come there from all over the world, we are not national, we are international. Its bromidial water brings sleep, gives vigor to the vigorless and cures those whom the cares of business have brought to a physical breakdown.

We have maintained roads and we do not have any trouble with our mountain roads because we have a gravel that has been provided by nature for us. We have a beautiful city there with a population of 20,000 regular inhabitants and we have a floating population of 20,000 to 30,000. Our great problem is the maintenance or conservation of our natural resources. It is more or less confined to protecting the visitor from the unscrupulous designing citizen who comes in there sometimes for the purpose of practicing medicine, and we have sometimes had a great deal of trouble in the past, but fortunately we are very much better now than then.

We are glad to be represented here to-day—very glad to have you come down to Hot Springs, Mr. Secretary, if there is a next time for us. I don't know if there will be or not. I have been told in some sections there was not going to be any. I thought as I came up this valley, just as I beheld the wonderful, stupendous evidences of the handiwork of the great Creator, I just thought to myself how awe-inspiring it was and how infinitesimally small it had a tendency to make us realize we were, and how appreciative, how wonderfully appreciative we should be to be

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citizens of a country that possessed such gigantic and magnificent scenery and things as we have in the Yellowstone, the Glacier, this beautiful, majestic, grand Yosemite, and all these other natural wonders. I think the idea of seeing America first is one of the finest propositions that has ever been indulged in. As an American citizen, I think the foremost want, Mr. Secretary, for the proper administration of these parks, a rational administration, is an intimate acquaintance upon the part of the heads of the department with the immediate conditions in each particular park. From my observation last year and this year, and having visited other parks during other years, I am firmly convinced that no particular rule or fixed policy will avail at all the different parks.

In other words, that the Mesa Verde must have special legislation or a special rule. What would apply to this park would have no application to Hot Springs, and vice versa. In other words, the Secretary or the Interior Department has heretofore, it seems to me, been sort of scattered. There should be a concentration of effort and a concentration of the management of these parks, all of which would bring about a condition of much improvement. The best way to illustrate that would be perhaps to relate an ancedote. I was out in a western State a few years ago, campaigning for a great political party. I made 40 speeches in this particular State, and it went 40,000 the other way. On one of my visits I was traveling across the country with a Senator who was blind. He made a speech at one particular place and we were driving to another, and on the way I noticed a tremendous big field and a big herd or flock of hogs—I don't know which you would call it. When I noticed them first they were dashing across the field and then in a moment or two they were dashing across the other way, running back and forth, helter-skelter, and I called the attention of my companion to it and I explained what it was.

Presently I saw an old man who owned the farm, and I asked him what was the matter with his hogs. He said, "I lost my voice last winter, and the only way I could get my hogs to the barn to be fed was to take a little stick and knock it on the barn, and since that these consarned woodpeckers have got so bad my hogs are just about crazy." There was a lack of concentration. If the woodpeckers could all have been concentrated on one tree the hogs wouldn't have gone wild. If this concentration of park supervisorship were developed into a reality, an inspector of parks should come around—I wouldn't choose that job because from visitations I have made to these parks in the past, Mr. Secretary. I am ready to throw up my white flag and say not for me. It takes too long to get through some of them. There are many things which I am sure would be very useful. Speaking of reputation—our State has, I may say, suffered because of its reputation—the Arkansas Traveler—the greatest misnomer—Arkansas is the greatest State in the

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Union—more natural resources than any other State in the Union, even the State of California.

Now, our reputation has been against us, but with our great faith, and with the good that has been accomplished, Mr. Secretary, and with the administrative support that we have been receiving during your administration, during the present administration of President Taft, there is no one now but that admits that the Arkansas Hot Springs have improved wonderfully, and are improving every day. We have nothing special to talk about. There are some things we wish to talk to you privately about. You may be able to diagnose our troubles and give us a remedy. We think we know what is the matter. Our notion of governmental management is the same as a commercial or corporation management, Mr. Secretary. Select your subordinates, and hold them responsible, and accept their recommendations as final—no appeal therefrom.

The SECRETARY. Gentlemen, that problem which I thought my friend Myers was going to touch upon, and which he carefully avoided, namely, that one of separating the sheep from the goats, will I presume be reserved for the later session. If anyone has anything to suggest or any questions to ask in regard to the Hot Springs that are fit for publication, we will hear them now, while otherwise we will adjourn until the press representatives are not present.

Now, we have left the national monuments, which are different from the national parks, although not so different from some of them, because one of the chief differences between the national parks and national monuments is supposed to be that Congress never makes any appropriations for national monuments except a purely nominal one for all of them. I believe the national monuments are in the same class with Sullys Hill, then; but nevertheless there are some interesting problems connected with them, and we would like to hear from Mr. Bond what changes, if any, have occurred in national monument affairs since last year. We have, of course, one national monument which is knocking at the door, and I am glad to see Mr. Harvey here, because Mr. Bond may have to say something about the Grand Canyon of the Colorado.

Mr. BOND. Mr. Secretary, nothing has occurred during the last year with regard to national monuments. Our history has been the same as for the past several years, since 1906. We have had some complaints as to visitors in a few of the monuments, and a strong request has gone forward for some effort to stop this sort of work. The El Morro Monument down in New Mexico, which is covered with inscriptions, some dating back nearly 300 years, is being defaced by the people who want to inscribe their personal names and dates. There are thousands now on that monument. Unless they are removed, as I recommended at the Yellowstone last year, very soon valuable inscriptions will be lost. During the last year the department made its annual recommendation

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for $5,000 for the administration of national monuments. The House committee, in accordance with precedent, ignored the matter; the Senate committee made recommendations, and the Senate itself approved it, but the appropriation was lost in conference. That has been practically the practice now, ever since the national monument law was passed.

There was, however, in one case a bill introduced by the Hon. Carl Hayden to appropriate $25,000 for the protection of the Tumacacori Monument. That is an old Spanish mission church in Arizona and is of great interest. It is in bad condition at the present, and the name writers have covered its walls, as in the case of the El Morro Monument; and I want to say, in connection with this, that while the General Land Office approved the purpose in general of the bill of Mr. Hayden, I think that legislation of that character should not be undertaken. I think the appropriation should cover all monuments; that is, a lump sum should be appropriated to this department or to the Secretary of the Interior. In the case of this bill, I think it would not be improper to say that the amount appropriated was very excessive. It was at least twice as much as needed for the purpose. The bill also provided for a salary for custodian which was far in excess of necessity. If we are going to undertake to make separate appropriations for the various national monuments, we are going to get a great deal more money than we can use, and I think there is only one way, and that is to make a general appropriation and allow its disbursement to be made by the Secretary, in his discretion. We are still living in hopes that the concentration recommended last year will be carried out ultimately. I think, from all that I could get upon that subject, that there is a strong following in Congress favorable to it, of which the Secretary himself is best advised. I believe that is all I have to say, Mr. Secretary.

The SECRETARY. Any other remarks with regard to national monuments? Mr. Harvey, have you anything to tell us about the Grand Canyon? Has there been any change since last year? I have heard of no particular movement in Congress.

Mr. HARVEY. Nothing I know of. They are still building that road along the rim.

The SECRETARY. Mr. Leighton, are you prepared to read the paper you referred to now, or would you postpone that till this afternoon? We are going to have an executive session.

Mr. LEIGHTON. I think it would be better this afternoon. I have a formal paper which perhaps will only take three minutes, and the rest will be largely discussion on other subjects.

The SECRETARY. Then, I think we will adjourn until this afternoon at half past 2. The plan I think best for this afternoon is to have the executive session of park superintendents, and perhaps not undertake to do anything more at that time. The others who are here will have the opportunity during the afternoon to see something of the Yosemite

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Park. We will have a public session to-morrow morning at half past 9, and at that time we will take up first the transportation question and after that the automobile discussion. Before, however, we adjourn this morning, I think we should hear from Mr. John Muir, who, I see, has come in since the meeting convened.

Mr. MUIR. Mr. Secretary, I don't want to start making a speech. They will all be hungry before I stop. Isn't this lunch time?

The SECRETARY. We are going to have a speech from you unless you decline. If you would rather postpone it until some other occasion——

Mr. MUIR. I think that would be better than to have it just now. A Scotchman can't just touch it and let it go. He has to discourse as they call it and hang on like grim death.

The SECRETARY. We will expect to hear from you to-morrow morning when we open the session if that will meet your convenience. If Congressman Raker is here we would be glad to have a word from him now or later.

Mr. RAKER. There are some matters about which I would like to hear some further discussion. There are matters in relation to the improvement of the parks as it appears to me and the question of transportation and entrance into the parks, and I was thinking that personally I would like to hear from some of the men who are possibly personally interested as well as those who take it from a governmental standpoint. I would like to hear the subject discussed, and while I individually have fairly clear ideas on the subject, at least to myself, I would like to hear some of the discussion from the others first, and while I am not a Scotchman, my people, my class of people, are in the same way; when we get started on a matter we like to run it down, hear both sides, and know that we will not unconsciously give one side the advantage of the other, the whole subject depending upon the facts, and in justice to the general community, thus having placed ourselves, we feel like knowing ourselves like the bulldog at the root, grabbing there and hanging until we pull that one out, then at another one to dig that out until we get the bad tree down, and we think these matters ought to be taken up and discussed in the same line. I am a little sorry that the automobile question and the matters pertaining to that could not be taken up some time later this afternoon, so we would have more time to go over it to-night and to-morrow, but, of course, the Secretary, I realize, is busy and we will abide by his time.

The SECRETARY. As far as that is concerned, if the automobile people are all here at that time and they want to wait around until we get through the executive session, we will be very glad to take the matter up at that time, but it is important that we have the executive session, and it seems better to have it this afternoon than to-morrow or some time later, and I did not think you would like to do that. We expect to be here over to-morrow, and if necessary to hold a session on Wed-

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nesday morning, and I think they will have ample time to get all the facts as to the automobiles before us. I do not think we will require a great deal of time to discuss the matter. We want to get down to cases and discuss the particular facts. I do not think it will be particularly helpful to have assurances of the desires of the automobilists to use the roads. I hope that we may find some way to do it, but until we find the right way I believe it would be a mistake. If they have a way to suggest we want to hear from them.

Mr. RAKER. In that regard the Secretary and I agree fully upon that subject. It seems to me that we did not come into the park for the mere purpose of seeing its beauties at the present time. Certain superintendents have to some extent to get information. It has been my observation that a number of men have their souls full of a certain subject. While we like to cut them down at times, they feel that if they had five minutes longer or two minutes longer they would have gotten the subject better before the one who is to pass on it. I know it takes considerable time, but I feel this way; it is a matter that the Secretary, I know, wants to go into fully and to see the proper method and mode of carrying it out to the interests of the park, to the interests of the Government, to the interests of health and life, and to the interests of those who are seeking pleasure at a smaller expense, but individually I will submit to the Secretary. I would like to say something before the conference adjourns, but will reserve that because of the promise I have made.

The SECRETARY. If the automobile people are represented or have a spokesman and want to wait until the adjournment of the executive session and then come in, I do not care. We will adjourn, then, until half past 2 for the superintendents and to 9.30 to-morrow morning for the general meeting.

MORNING SESSION, OCTOBER 15.

The SECRETARY. Gentlemen, we will come to order, please. The first question that comes up in connection with national parks is, of course, how to get to them, and that always makes the transportation facilities a matter of prominent concern at the conferences and in the entire administration of the national parks. Last summer at the Yellowstone we had with us a large number of the representatives of the different railroads that are connected with the national parks, and I am very glad to see that many of them are with us again this year and that there are a number of new faces. Before we go into the discussion of the transportation facilities we should have after we have traveled over the railroad, perhaps we had better talk a little with the railroad people and see what has developed since last year; whether they have any new suggestions, and what they now report as to the results of our conference last year. Mr. Fee, this is to a certain extent your bailiwick; perhaps we had better hear from you first.

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Mr. FEE. Mr. Secretary, ladies, and gentlemen, the matter of transportation of people to the Yosemite, as well as to the Yellowstone, is of special interest to what is known as the Harriman lines. In the matter of the Yellowstone, I think the arrangements at this time with regard to railroad transportation are reasonably satisfactory to the traveling public, as is evidenced by the fact that this travel is constantly increasing from year to year, and with very few exceptions the situation in the Yosemite is radically different, although the service has been very materially improved within the past four or five years. The season in the Yosemite is practically a 12-month season. The greater volume of travel, however, comes to the Yosemite between the months of May and October. During that season of comparatively heavy travel, the railroads operate between San Francisco and Los Angeles through sleeping-car service to and from El Portal, at the terminus of the Yosemite Valley Railroad, some eighty-odd miles from Merced, on the lines of the Southern Pacific & Santa Fe. I think the greatest drawback to-day to travel into the Yosemite is the lack of such hotel accommodations as we find, for example, in the Yellowstone. I think the people that managed and are to-day managing the hotels, especially at El Portal and in the valley here and at Wawona, are to be commended for the care they have exercised in taking care of the travel to this park, considering the facilities which they have. They certainly have been improved materially within the past four or five years, but as a matter of fact they are still very far from being what they should be, and the best evidence of that is that the travel to this park as compared with other parks in the United States of a similar character is really very small. I note from Col. Forsyth's report that the Yosemite had 13,000 tourists in 1911 and 11,000 in 1912, a decrease of 2,000 as compared with the previous year. Those figures, of course, may be accounted for by the difference in the volume of the transcontinental travel brought about, perhaps, by conventions or the lack of conventions at Los Angeles, San Francisco, Portland, and northern cities, but when we consider the fact that the Yosemite National Park lies within a few hours ride of both San Francisco and Los Angeles, and that around San Francisco Bay there is at least a million of people, and around the city of Los Angeles, say, a half million people, I think it must be evident to the Secretary and to everyone who has made a study of the question, that the very small travel into this park is largely due to the fact of its not having A number 1 roadways and thoroughly commodious hotel accommodations.

I was very much pleased yesterday, as no doubt many others were, to hear the Secretary say that so far as the matter of leases in the Yosemite are concerned, it will be the policy and is the policy of the department at which he stands at the head to grant leases that will in every way facilitate the building and maintenance of good hotels in the Yosemite National Park, leases running for a full term of 10 years, with the assurance that an

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additional or an extension of 10 years will be favorably considered. That, certainly, is most encouraging, and I think I may say quite in contrast with the policy as those whom I see on the ground have understood it as far as concerned the Interior Department during the past four or five years. I am very much in hopes, therefore, that with the definite statement made by the Secretary yesterday, we may have hopes that capital, and those particularly interested will move promptly in the matter of supplying the Yosemite National Park with entirely suitable hotel accommodations. This is especially desirable from the fact that the exposition of 1915 at San Francisco is bound to bring to this coast from all quarters of the world a very large travel. I think a conservative estimate of the admissions to the Panama Pacific International Exposition in 1915 can be stated at 15,000,000. We are well aware that a very large percentage of this attendance will naturally come from within a radius of, say, 500 miles. The whole coast, however, from Vancouver to San Diego will contribute its share of this travel, but independent of the local coastwise business centering at San Francisco in 1915, there will be a very heavy travel, I am satisfied, not only from the Orient, but from the Eastern States, the Atlantic coast cities, and from Europe.

It was my fortune to discuss, only a few days ago, the matter of travel from the continent with a gentleman who had spent some four or five months there, who was in the business of transportation, and knew, I am satisfied, whereof he spoke. He stated that the interest throughout the continent and throughout Great Britain, so far as he traveled, was very wide and that it seemed to him to indicate a travel to this country, such, perhaps, as we have never seen in the United States. It is very necessary, therefore, that not only the roads leading to the park, that the railroads leading to the park should be up and doing and preparing for this travel of 1915, but that this park itself should be supplied with such hotel accommodations as will make the traveler who comes glad that he made the visit and willing to go away and recommend his friends to do likewise. I have in my possession, to-day, letters received only very recently from people who have made this trip, during the present summer, in which they spoke of the beauties of Yosemite National Park, of the desirability of every one seeing it, but at the same time they said they would hesitate to recommend their friends to come in now, for the simple reason that the hotel accommodations were not such as were to be found in the Yellowstone or to be found abroad—in Switzerland, for example.

And that is what they expect and that is what the folks who travel to a park like this will have before we can expect to get a very large number of people. I want to emphasize the statement made by Col. Forsyth yesterday with regard to the building of a boulevard from El Portal to this valley. It seems to me that this is of the very first moment. We have nothing to say against the matter of automobiles in the Yosemite

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National Park. That is a matter that the Secretary will deal with in such manner as seems to him to be for the best interest of the people as a whole, but we do feel, as far as the transportation lines are concerned, that we want from El Portal, where the people leave the trains of the Yosemite Valley Railroad, a highway that they will be proud of and that it will be a comfort to travel.

I do not know, Mr. Secretary, that I have anything further to add, except that with these improved accommodations I think the Yosemite Valley and the park where we are to-day may look closer to such a tide of travel as was described to us yesterday by Mr. Myers as going toward the famous Arkansas Hot Springs, which he very aptly termed the "National bathhouse." And when he referred to the matter of the travel from the Pacific coast and the desirability of providing all of those people with bathing facilities when they reached Arkansas Hot Springs, I was especially moved by his statement to me, made a little bit later, that such was the Spartanlike fortitude of the people of Hot Springs that they willingly forego the opportunity to bathe in order that they might accommodate the visitors; in other words, like the shoemaker, their children were shoeless. I appreciated, therefore, the Secretary's remark that the administration of affairs at Arkansas Hot Springs was attended with many and very peculiar difficulties. Thank you.

The SECRETARY. I wouldn't like to have it said, Mr. Fee, that the terms of hotel leases at this or any other park are misunderstood on account of the fact that I did not refer to them, and therefore permitted that statement to go as though it were my own. I want it distinctly understood that the question of the length of term of lease is a matter which will be considered under the broadest general principles, such as I stated yesterday, and that I am no more wedded to a term of 10 years than I am to one of 20 or more or less. There was no intention in what I said to indicate a definite view with regard to the length of the term. What was intended to be said was this: That I believe that the leases for hotel sites and for other concessions involving the permanent investment of money should be of such a character as to afford an investor a reasonable assurance that he will have his investment protected and that he will receive from it and from his labors in connection with it an adequate return, sufficient to justify the expenditure and make it a practical one in all respects, and if the term of 10 years was used, it was because that was the period which had been mentioned by the gentlemen whose remarks called forth my own. I want it understood at all times that any suggestions as to terms and provisions of these leases will be welcomed by me whether they relate to the protection of the investment and the encouragement of the development of these facilities so that the public will get the very best service, or whether they relate to the conditions upon the other side which must be relied upon to make sure that the public will get the best service and that it will get that service at reasonable rates.

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Now, there are a good many other railroad men here. I don't know that it would be well for us to select them. I would a little rather they would volunteer, each in their own way. Perhaps, Mr. Byrne, we might ask you to speak now, because of the fact that the Santa Fe road is so directly interested, with the Southern Pacific, in this park.

Mr. BYRNE. Mr. Secretary, ladies, and gentlemen. About a month ago I was in the ticket office at Stockton and a gentleman came to the ticket-office window. He said to the ticket clerk, "Do you sell tickets to the Yosemite?" The clerk said, "Yes, sir." He said, "Very well; give me four tickets," and he went on. A little while later he came back to the office and entered into conversation with the ticket clerk, and he said that he had just returned from a long European trip, and one of the first things that almost all of the people he met asked him was about the Yosemite Valley. He had lived 24 years in Stockton as a merchant there and he had never been in the Yosemite Valley, so he swore by all that was holy he would go in the first opportunity he had, and this was shortly after his return from Europe. That illustrates two points. It illustrates, first, the comparative indifference of people to things and beauties that lie at their doors; it also illustrates the difficulty of getting people to come to some of the beautiful resorts of California.

I think that one of the great drawbacks that has held the Yosemite from attaining the prominence in the world of travel to which it is entitled is the difficulty of getting in and out. That has been improved in the last few years, of course, by the construction of the Yosemite Valley Railroad, but still they are 15 miles away from the objective point, and the transportation must be improved in some way, either by better roads, possibly by automobiles or by electric lines, or in some way getting people into the center of the valley. When that is done, there will be a great many more people come here. That in connection with the matters that Mr. Fee referred to—that is, the hotel accommodations—they have naturally and necessarily been limited. They do not compare very favorably with either the resorts in this country or the resorts of Europe, and that has been the condition that has existed, and that I trust, from the remarks of the Secretary, will be probably removed by the department. The rail transportation, so far as it goes, is about as good as is necessary. There are both day trains and night trains, making the valley accessible from the two large cities of California, so that it is a matter of internal transportation, a matter of hotel accommodations, and the comfort and ease of reaching the place. I do not know that I have anything beyond that to suggest, Mr. Secretary.

The SECRETARY. Does anything occur to you with regard to the possibility of more effective cooperation between the department and the railroads that would facilitate transportation into these parks. Can you help us or can we help you?

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Mr. BYRNE. I think it is possible, as long as the park is under the Government, that the Government can help us more than we can help them, by the construction of proper roads into and through the valley. My thought of transportation is that a road should be constructed from El Portal on one side to Wawona on the other, so that people can get right through the valley and not have to double along the same road.

The SECRETARY. Now, the question of building roads depends primarily on funds. The people whom we are meeting here, with the exception of Congressman Raker, haven't anything to do with that. We can make recommendations and we do, as forcibly as we know how. Can you suggest any way that will enable us to get more liberal appropriations for these purposes?

Mr. BYRNE. I don't know, unless we can employ some loud voices. There are several gentlemen I heard last night—I think if we could get them engaged in the campaign we might make some progress.

The SECRETARY. Now, we hear, sometimes, in talking about railroad transportation, not only the facilities to which you have referred discussed, but also the rates. What do you think about that? It is pretty expensive in this country, on account of the long distance, to get a large number of people from other points to the Pacific coast, unless they are going incidentally from one part of the country to the other. Is there anything in your judgment in the rate question that could be modified to advantage?

Mr. BYRNE. Well, in my judgment the rates on the transcontinental roads during the season when the Yosemite is open in the summer, are so low now as to be almost laughable. They are like commutation rates in most cases. The average on a short line on some of the roads, they get 1½ cents a mile, about, and the many railroads participating, I question if they get a cent a mile for their travel. Those rates are put in for the year and advocated by the railroads, really not in expectation of getting a direct profit out of the handling of the travel but largely as exploitation. The Pacific coast roads have followed the policy for years to get low rates that they may persuade people to come to the Pacific coast to see what we have here, not only in the line of natural beauties but the advantages of locating permanently.

In fact, I think it is due to that that California and Oregon and Washington, in perhaps a lesser way, have attained the very rapid growth they have in the past few years, California having increased by 60 per cent in the last census. That is the largest percentage of any of the older States. I believe that the rates are about as low as they can be hoped to be made as far as transcontinental travel is concerned. I have never heard of any complaint, have never observed, as far as the rail charges go, that the charge to the Yosemite has kept anybody out, but necessarily the charges on the stage lines when you reach the end of the rail lines are high; that

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is because of the expense of maintaining them, and the few people that can be hauled at a time makes it necessary to charge high rates, but I do not believe that is any great deterrent, even at those rates.

The SECRETARY. Last year one of the subjects discussed was cooperation on the question of advertising—how far the department might assist along publicity lines—and the department took a very active part within its limited means for that purpose, furnishing to the press articles, illustrations of a very considerable quantity and variety about national parks. Have you observed that work at all, and have you any suggestions in connection with it?

Mr. BYRNE. Yes, sir; I have observed it, and the work has been taken advantage of in publications the railway has gotten out following that. It is a very good work. It gives an authenticity to the statements made about the beauty of these scenes that can not be given by a purely transportation company's issue, and so it is of great help to us. It enables us to put before the public, stating that the Secretary of the Interior or whatever is the official title of the person issuing it, has said so and so. That is a great deal better than my advertising man's notices. It is very helpful in the way of making somebody get the wanderlust. Then, again, it attracts the attention of various nations. I suppose it would be a conservative guess to say that 33⅓ per cent of the people who visit the Yosemite Valley and the Grand Canyon are from foreign countries, attracted here by the wider interest they seem to have in these world-famous places.

The SECRETARY. You were not present at the last conference. We discussed at that time very extensively the question of forming a bureau of national parks. Have you any views on that subject?

Mr. BYRNE. Well, I do not believe that I have. I was not present at the last conference, and have never given it any consideration, but it appeals to me as a step in the right direction of getting insistent and consecutive lines of management laid out for these various national parks. That is, in the charge of a bureau you would get consecutive work, which I believe is more important, rather than the spasmodic help that we now get from time to time.

The SECRETARY. I believe Mr. Drum, of the Yosemite Valley road, was called away. Mr. Lehmer—is Mr. Lehmer here?

Mr. LEHMER. I do not believe that I could add anything to what has been said by Mr. Fee and Mr. Byrne to be of interest. I am willing to answer any questions that might be asked.

The SECRETARY. That is a good suggestion. Every now and again there is a complaint floats up to the office of the Secretary about railroad facilities in connection with these various parks. Now is the time to ascertain if there are any complaints or any suggestions. If anybody here from the outside thinks there is anything to call to the attention of the railroad people, this is his opportunity.

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Mr. LEHMER. I didn't know that I would be called upon to defend myself in regard to rates or I would——

The SECRETARY. I do not understand that you are called on to defend yourself at all. I am asking the questions to get information.

Mr. LEHMER. I would like to say right here that I think Col. Forsyth, as well as concessioners in the valley, will bear us out that there were times during the last five or six years when the accommodations in the valley were not adequate to take care of the people. I think the first thing we wish to consider is adequate facilities for taking care of the people. We are restricted in the number of people we bring to the Yosemite by the fear that we may get more people than can be taken care of. We should get adequate facilities for the people we do bring.

The SECRETARY. Now, Mr. Lehmer, on that point—this is one of those vicious circles we hear about sometimes. You can never reduce the rates unless the accommodations are improved, and the people planning to give the accommodations say they can not put the money in unless they know what the railroads are going to do. Don't you think it is about time for the people interested in the Yosemite to get together?

Mr. LEHMER. Yes, sir.

The SECRETARY. That makes me think about an old darky who always went to the Episcopal Church. He had gone there for years and years and years. Finally, one day, he became a very devout and earnest Methodist, which, as you know, is a considerable change. One of his friends soon after met him on the street and asked him what it was all about, saying, "I understand you have left the Episcopal Church; what is the matter?" The old darky answered, "The 'Piscalopian Church is no place for a poor nigger like me." His friend said, "What is the matter with it?" "Well," he said, "the trouble with the 'Piscalopian Church is there is too much reading of the minutes of the last meeting and too little new business."

Now, don't you think it is about time to get down to new business at the Yosemite?

Mr. LEHMER. I think so. I wish to make this statement, further, that until last year we have had excursions into the Yosemite Valley on very low rates, and we have had commutation rates, and a large percentage of people were handled on those cheaper rates until last year. In conference with Mr. Fee and Mr. Byrne, we came to the conclusion that under present conditions it was not advisable to bring people in on those cheap rates and congest matters in the Yosemite, and last year those rates were discontinued, and the loss of business, I believe now, to some extent is accountable for the withdrawing of those rates.

The SECRETARY. You mean the business fell off with the withdrawing of those rates?

Mr. LEHMER. Yes, sir; to some extent. But there were other conditions that contributed also. The report went out early in the year

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that we were not going to have any water in the Yosemite, and we all know that a bad report travels much more rapidly than a good report. I came in contact personally with a number of people who had intended to make the trip to the Yosemite who were advised not to do so on account of the lack of water, and I think there are several things that contributed toward the falling off of this last year.

I think the people who built the Yosemite Valley Railroad up that Merced Canyon without any prospect of business, except business that they might develop themselves, deserve a great deal of credit for making the Yosemite Valley accessible, and we have our struggles, we have our obstacles, and when conditions are better and we can consistently do it we are going to meet the condition of rates. I assure you of that. I think Col. Forsyth and the people of the valley will bear us out that until this last year there were times every year since we have been in business that the camps and hotels had all that they could handle in the Yosemite.

The SECRETARY. Is Mr. Burley here?

Mr. BURLEY. I don't think I have anything to add to what has been said.

The SECRETARY. Do you find any change in conditions since last year?

Mr. BURLEY. Not in our part of the country. I am not familiar with this. Our business is limited by the hotel capacity in the Yellowstone Park. We can handle a good many more passengers than we are already doing. I think that in 1913, 1914, and 1915 especially we will be unable to accommodate the crowd that will want to go to that section in the park on account of lack of hotel facilities.

The SECRETARY. You think the railroad, as far as transportation is concerned, will be able to handle it?

Mr. BURLEY. All we have to do is to put a few more cars on.

The SECRETARY. So that you think the question up there is hotel and other accommodations in the park?

Mr. BURLEY. Yes, sir; it is a very serious problem to-day.

The SECRETARY. I think, when I was up there last summer, there was talk of some additional hotel facilities. Are they going ahead?

Mr. BURLEY. I don't think there have been any new hotels built since you were up there last year, Mr. Secretary.

The SECRETARY. There were plans or discussions with regard to some additional facilities. How about that, Mr. Child?

Mr. CHILD. We have the plans.

The SECRETARY. What plans have you about using those plans?

Mr. CHILD. I can state that better after a conference with you.

The SECRETARY. Is it waiting on that?

Mr. CHILD. Yes, sir.

The SECRETARY. Well, then, we will remove that obstacle very promptly. Is Mr. Fort here?

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A VOICE. No.

The SECRETARY. Mr. Charlton?

Mr. CHARLTON. Mr. Secretary, ladies, and gentlemen, I am rather a nervous person. For that reason I have my impromptu remarks with me. This is my first attempt at a meeting of this kind and if I can hold this paper steady enough, I may be able to read it:

The Northern Pacific Railway, the road I am connected with, is greatly interested in tourist travel to the Yellowstone Park, and, in fact, to all national parks—Glacier, Rainier, Crater Lake, Yosemite, etc.

The great aim of the American lines is to keep the tourist at home and to attract the tourist from abroad.

In my position for the past 29 years I have been in personal touch with tourists en route to and from Yellowstone Park.

What we need is more help from the Government in caring for our parks. In the case of the Yellowstone Park we have been allowed to believe by the previous course of the Government that they would take good care of the park and in consequence large sums of money have been spent for hotels, transportation facilities, etc. The Government should therefore spend enough money for police protection and for the roads so that when people go to the park they will be comfortable, happy, and satisfied.

There is much to be gained by this. If the Government will so equip its national parks that people will go to see them instead of going to Europe a very large sum of money so spent will remain in the United States, which means much to the whole country. In addition to which we can better attract the tourist from abroad.

I wish to emphasize the importance and necessity of more help from the Government in caring for the parks. It has been urged by some Members of Congress that there is no more reason why the Government should appropriate money for Yellowstone Park and other western parks than they should for Central Park in New York, Forest Park in St. Louis, etc. This may be true, if the Government had never started on the present plan and if there was any other source of revenue for the country national park. The parks in the cities are supported by the municipalities and have a revenue that the country park does not have.

During the past 29 years large sums of money have been spent on the hotel facilities in the Yellowstone Park, and at the present date we have magnificent hotels at Grand Canyon, and Old Faithful Inn, an excellent hotel at the Lake, and I believe a new hotel under consideration at Mammoth Hot Springs.

We are spending thousands of dollars advertising the Yellowstone Park and other national parks. A great number of tourists who can afford to visit the national parks are of the class that insist on comfort and will not make the trip unless assured of this. We are all working to the one end, "to increase the travel." In order to do this increased appropria-

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tions from Congress are necessary to better the condition of the roads, oil and sprinkle them, and insure the comfort of the visitor.

The coaching feature through the Yellowstone Park is a very attractive one. If the Government will put the roads in general good order, which they can do for a comparatively insignificant sum, and if they will only spend enough money to oil and sprinkle them, the visiting tourist will be well taken care of.

With reference to the automobile, we see no objection to this, but we believe the first expenditure on the park should be to make the present roads safe and comfortable for coach vehicles, and after that is done, if it is thought best, automobile roads should be constructed. I believe it is out of the question to combine automobile and horse vehicles on one road; in fact, impossible. The coaching feature through the park is a very attractive one and I believe preferable to the automobile trip.

I believe we all realize the importance of having the Government that is supporting the San Francisco Exposition and that supported the Portland and Seattle expositions spend enough money in Yellowstone Park and other parks to keep them in first-class order for the use of the American people and the foreign tourist.

The SECRETARY. Now, personally, I am rather glad that Mr. Charlton was so nervous, because that paper is in such shape that if he gets over his nervousness he can forward a copy of it or hand it to Congressman Raker, and the Congressman will use it to the best purpose. It is not necessary to convert the Congressman, but it is necessary to furnish him all the ammunition of war for those in whose power it lies to build these roads and take care of them. If you will see that Congressman Raker gets a copy of that nervous paper of yours, Mr. Charlton, we will all be pleased.

Mr. CHARLTON. If I recover I will be glad to hand him a copy.

The SECRETARY. Is Mr. Schmidt here?

Mr. SCHMIDT. Mr. Secretary, the only national park reached by the roads I represent is the Hot Springs Park. Unfortunately I have never been there, but I do not understand that there is any fault found there with the hotel accommodations or the train service in that park. All of the Middle West roads are advertising the various national parks in their folders and other literature, bulletins, and so forth. I think we are all doing our share toward the advertising feature. We naturally want to create travel in all directions. Unfortunately, I understand the attendance, or the visitors to the parks, has fallen off in the last year or two. I thought of an old story yesterday of two boon companions who imbibed not wisely but too well. One fell in the gutter and said, "Help me up, Tim." Tim said, "I can't, but I'll lie down with you."

The SECRETARY. Mr. Schmidt, you represent what roads?

Mr. SCHMIDT. The Iron Mountain and the Missouri Pacific.

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The SECRETARY. Now, there are a number of gentlemen here from Hot Springs. Have you any grouch on with those roads—anything about transportation facilities down there, or has anybody else any grouch against them? How about that, Mr. Myers?

Mr. MYERS. Mr. Secretary, we come from a land that don't permit grouches. If I had left home with a grouch, I would have gotten rid of it long since. We have no grouches against the railroad. The Iron Mountain spends about $20,000 in advertising. They give us all facilities. In the larger months they handle 12,000 or 15,000 people a month. It is a very splendid line, doing everything it can for Hot Springs, and its rates, Mr. Secretary, apply to Hot Springs the year around—excursion rates the year around.

The SECRETARY. That is a good thing. Is Mr. Thompson here, of the Rock Island road? I trust he is not so nervous that he has gone to the hotel for his manuscript. We have heard from the Yosemite Valley now. I think that embraces the list of the distinctive railroad representatives here, but it does not complete it, Mr. Harvey, until we hear from you, because the Santa Fe service would not be complete without you. You are interested in the whole question. Tell us what you think about it.

Mr. HARVEY. I came for instructions, rather than to give instructions. Besides, the Grand Canyon is not a national park; it is only a monument. I think, as a little monument, we had better learn a few things.

Mr. FEE. I want to add to my remarks that the lines in the Southern Pacific system, which I represent, to-day are heavily interested not only in the Yosemite National Park, but in the Yellowstone, as I intimated; also in the Rainier, the Crater Lake National Park, the Sequoia, and the General Grant. With reference to the two latter parks, we do send more or less people to those national parks each year, and at times we have thought we saw a substantial increase. I think this year in the Sequoia and General Grant, taken together, there was a very decided increase. I wanted to say with reference to the Crater Lake National Park that we are very anxious to see suitable hotel accommodations placed at the rim of the lake. The Southern Pacific Railway is building a new line from Klamath Falls, which will bring our trains within 20 miles of Crater Lake. I have understood that a good road is to be constructed from a point some 50 or 60 miles north of Klamath Falls. I hope that report is correct, and I hope that we shall hear very shortly that some of our friends with capital are ready to go, and will go, in and put up a suitable hotel there, because it certainly is one of the wonders of the world. We are anxious to contribute in any way possible, not only in other parks, but also to Crater Lake, which is a new and more recent member of the national park family.

The SECRETARY. Now, gentlemen, I think we have got to the terminal station of the railroad, but we are still outside the park.

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Mr. FEE. I would like to suggest that Mr. Hughes here is of the Chicago, Milwaukee & St. Paul.

Mr. HUGHES. Mr. Secretary, the Milwaukee Railroad is deeply interested in the development and exploitation of national parks, but I should say more particularly in the development of the Rainier National Park. However, I think that the railroads are developing a broader aim, a broader spirit, in regard to this national park situation. Most of the people who travel from the East to the West travel one way on one line and in returning travel on the other lines. We have a deep interest in the development of Rainier. It is not purely a selfish interest, nor is it strictly unselfish. We expect that our fellow citizens will profit by developing our traffic. Of course, we incidentally expect to profit slightly ourselves. A short time ago, in Seattle, I had the pleasure of attending a dinner on the occasion of the convention of the National Association of General Passenger and Ticket Agents, and at this dinner the chairman of the evening, talking over traffic matters, called to the attention of the assembled representatives of the various railroads and steamships that there was being taken from the United States of America and expended in Europe each year the enormous sum of about $400,000,000. I accepted the gentleman's statement, inasmuch as he is a traffic man at the head of the largest traffic organization in this country and should be in a position to know whereof he speaks. I am satisfied, with proper cooperation on the part of the concessionaires and on the part of the railroads, that a goodly portion of that four hundred millions can be kept right here at home, and I want to say that the Milwaukee Railroad wants to help keep it here.

It was with much regret that I heard yesterday that there was a decrease in the number of visitors to the Yellowstone and to the Yosemite. There was also a decrease in the number of visitors to Rainier National Park. Of course, we have had a bad season up there. Sometimes it rains in our country, and this summer it rained all the time. But when you stop to consider that the decrease affected practically the three largest parks in this country, the Yellowstone, the Yosemite, and the Rainier, there is something radically wrong with the method and manner in which the parks are being exploited amongst our people. We were inclined to believe that the lack of attendance at our park was attributable solely to the terrible conditions of our roads and to the weather we had. My information is that they had bad weather at Yellowstone, but there must be something more than a coincidence when the three largest parks suffer in the same way, and I am inclined to believe that your suggestion, which I understand you made last year, to the extent that there should be cooperation amongst the railroads and amongst the concessionaires, who would act jointly with the Department of the Interior in an endeavor to advertise the national parks throughout the country, without specifying any particular national park; that is one of the benefits that would accrue,

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I believe, through the creation of a bureau of national parks. I am of the firm opinion that nothing will be achieved, or practically nothing worth while, until we have such a bureau—until we have men in this bureau whose whole time is taken up with matters pertaining to transportation, to hotels, and to the advancement of the national parks as a whole—who will devote all their time to it.

I am heartily in favor of the creation of such a bureau and would suggest that the concessionaires get together and make a united concerted effort with the representatives from their various States in Congress, and demand their assistance in the establishment of such a bureau. My position in the Chicago, Milwaukee & Puget Sound Railway is that of assistant superintendent of dining and sleeping cars, and under that department comes hotels. It places me in the rather fortunate position of being able to view this national park hotel and transportation proposition from two standpoints. I had to operate the National Park Inn for two years, and I also had the handling of the dining, sleeping, and parlor cars that carried the people to and from the park. I want to make one recommendation to cover the ground that was discussed yesterday and to-day; that is the matter of hotel leases. I think you will agree with me, Mr. Secretary, that the largest investment in any of our national parks is represented by the hotels, and there is a tendency on the part of other concessionaires to criticize hotel accommodations and hotel people. That is brought about purely by their ignorance of the conditions surrounding the operation of hotels in national parks.

In the first place, the average hotel opens once in its lifetime and never closes until sometimes the sheriff closes it. A hotel in a national park opens once each year. The cost of operation of hotels in national parks is very excessive on account of the necessity of opening the hotel practically new each year and engaging employees who are not conversant with the conditions surrounding the hotel itself—not acquainted with each other, and it is necessary to mold them into a cohesive whole to get the necessary amount of work and that degree of service which the other concessionaires and the traveling public would call good. It also represents a tremendous amount of money. Unquestionably there is more money invested in hotels in national parks than there are in anything else, transportation included. By that I mean to say that I think we ought to endeavor to find some way to improve the conditions under which the hotel men operate, give them that stability which the amount of capital they have invested warrants, and that can only be done by giving them leases of such duration that they would become willing to invest the money in large amounts to improve their property.

I think I would suggest that any hotel in any national park in this country that represents an investment of $50,000 should be granted a lease of not less than 25 years. The short-term leases, even those that are accompanied by a guaranty or a practical guaranty that the lease will

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be extended, does not give that necessary amount of protection in the mind of the investor to warrant him in putting more money in the property, even though he knows it is needed. He is under the impression that he has got so much tied up here, and the vicissitudes of political life may change the situation. By that time there may be some one else in power. They may not take the same view of it that our good Secretary Fisher does, and are afraid to put up this money, and for that reason I suggest and appeal to your assistance in having longer leases granted to hotel concessionaires in the park. The railroads, in my estimation, furnish adequate transportation facilities to the parks, and in fact I think they give a better and more efficient service than the business at the present time would warrant from a business standpoint. They are animated, however, by a desire to develop this park travel. For that reason they give possibly better than they would give under the circumstances, and better than the remuneration would warrant. On the Tacoma Eastern Railway, which is the practical gateway to the Rainier National Park, we are operating two trains each day each way in the summer time, and we furnish additional cars if it is required. We have been confronted by a terrible road condition, or I am inclined to believe that we would have as many people this year as our brothers of the Yellowstone. We confidently expected 17,000. As it was, we only had 9,000, which was a decrease that, however, is not attributable to anything but our moisture.

The SECRETARY. It seems that this train was running special and we did not have it on the schedule. If there is any other train running wild on the tracks, we would like to have it blow the whistle now. Are there any other railroad men here who have failed to let us know of their attendance—representatives of any other road? I suppose we may assume that we have at last gotten to the terminal station and it is time to take up the automobile question.

Mr. PARSONS. May I make a suggestion that seems to come in here? It has been stated that the Government publication carries with it authority that theirs does not possess. It has also been stated that they are spending large sums of money. They have confessed that their part of that does not have the effect they wish. It seems to me that here is a case for the Government to issue proper publications and sell them to the railroads in quantities. There is no question that the Government publications in foreign countries do carry weight that our railroad publications do not carry.

The SECRETARY. We will commend that to the careful and prayerful consideration of the railroad men.

Once more, are we ready for the automobile question? If we are, perhaps before starting it it might be well to make a brief reference to a little discussion we had last night, which, of course, is known to the selected representatives of the automobile people who are here

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present, but should be fully known to all the others. It may be desirable to clear away the fog on this question as far as we can. There is said to be a tendency toward fog on certain portions of the Pacific coast, and I want to make sure none has gotten into the automobile issue. It will not be necessary to argue with the present Secretary of the Interior that the automobile is an improved means of transportation which has come to stay; it will not be necessary to argue with him that if it can be introduced into the Yellowstone Park or to the Yosemite Park or any other park, under conditions which are otherwise proper, it ought to be done. The interesting and important question is whether the conditions are proper, and upon that what I wish is constructive suggestion. It will not be necessary for any representative of any automobile concern or of any automobile organization to argue with me upon the proposition that the machines should be admitted if we can find a proper way; but they should not pass up to me the question of what that proper way is. If I knew a proper way to admit the automobiles into the Yosemite Park it would not be necessary to discuss that question at all to-day or at any other time. The difficulty is that with all the consideration and attention we have given the subject, including the examination and report of engineers, we do not know of such a way, and we want to hear the question discussed from that point of view.

Now, there are several classes of automobiles, as you know, and a greater variety of automobilists. If all the automobiles were of certain types and if automobilists operated that type of machine in the way that some operate their automobiles, it would be a tame animal and we could introduce it into the parks with impunity. Unfortunately, in the process of evolution we have not got that far. It is not necessary to argue with the automobilists, if we are going to be frank with each other and talk man fashion, that there are still a great many gentlemen who buy automobiles who have not yet ceased to be peripatetic nuisances. We do know that some automobiles make a great deal of noise; that they emit very obnoxious odors; that they drop their oil and gasoline all over the face of the earth wherever they go; that those automobiles are sold by people who regard it as a hardship to be excluded from any particular road. We know much more clearly that even machines which, as machines, have reached a high degree of perfection, are operated by gentlemen who don't know how to operate them, and are operated by other gentlemen who may know how, but don't take the necessary pains to operate them properly, and by still a third class of gentlemen who are perfectly fearless themselves and, liking the adventure, operate them in such a way as to create the impression on passers-by on foot or in a horse-drawn vehicle that it is very dangerous to be on the road at the same time.

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The daily papers are full of reports of the results of these things, and it does very little good to demonstrate even if it could be demonstrated to the satisfaction of a court, that after all, if the driver of a horse-drawn vehicle had handled his team with proper circumspection the accident would not have occurred. It has occurred. It does occur every day and therefore it is very important that we do not bring about a situation where it is more likely to occur, under conditions where the Government is inviting people into a national park on the theory that it is a playground and that they can largely relax the habits they may have in crowded centers of civilization of being everlastingly on the watch unless they be run into. There are several phases of the situation as it relates to the Yosemite.

There are a number of suggestions that have reached me, and I am going to try to get rid of a few of the questions right at the start. I am in receipt, as I said yesterday, of a considerable number of telegrams brought about by the very laudable and active influence of the automobile organizations and, I should judge, of the automobile manufacturers and agents, who want to see that the machines are admitted into this park; and in this connection permit me to say that I have not the slightest objection to the automobile business as a business. It is a very excellent business, and I would like to see it succeed, and I am willing to assume that a man in that business will be very earnest in trying to extend it. I have no objection to that. I think it is his right as an American citizen to do that and he is entitled to careful consideration. Now these telegrams have reached me; but among them there is apparently not an entire unanimity. Some of the telegrams object most strenuously to the introduction of automobiles in the parks, apparently on any basis, even to the rim of the park, so there is that difference to start with among automobile people. I have received other letters and communications with regard to the admission of automobiles on the floor of the valley, from men who have said they would be in favor of the admission of machines to the rim if it could be worked out, but would be radically opposed to the introduction of those machines on the floor of the valley, and I may say, without violating any confidences, you have among you here in attendance, gentlemen who most heartily concur in that view.

There are men who say that the machines should not be admitted to the floor of the valley. Some think they should be admitted to the rim, and they disagree among themselves as to whether that should be upon a road which is also used by horse-drawn vehicles or whether it should be on a separate road, and some of them have suggestions with regard to a separate road and others have suggestions with regard to the use of a road jointly with horse-drawn vehicles, but at different hours and under regulations that would protect the two kinds of traffic, as they think. Those are the things about which I would like to hear from you, and if the representatives will address themselves to those questions right at

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the outset, I think we will make more progress than in any other way. Senator Flint.

Senator FLINT. Mr. Secretary, ladies and gentlemen, I want to conform to the views of the Secretary in this matter, but I also want to take the advantage of having associated with Mr. Burns to do a little advertising for Los Angeles and the State of California. Carrying out the views of the Secretary, and in that respect I would like to have placed in the record the fact that the Automobile Club of Southern California is the largest automobile club in the world or in the United States, and that in the State of California we have some 84,000 automobiles—84,700—and there is only one State in the Union that has more, and that is the State of New York. We have more automobiles to the population than any other State in the Union, and that 65 per cent of the automobile licenses are issued from southern California; that the Automobile Club of Southern California has 4,500 members, 300 of them are foreigners and coming from various States in foreign countries; that the estimated number of foreign cars that visited California last year was 55,000. The estimated number of foreign cars that will visit the State of California this year, 100,000.

And following out and just commenting for a moment on the very able and instructive paper of Mr. Charlton, I desire to say that southern California has done as much as any part of the Union to keep that $400,000,000 that has been spoken of in the United States, and it offers a crop that is very valuable to us and we have appreciated it, and we trust that the balance of the country will also adopt the plans of encouraging people of the United States to remain at home and see wonders that we have here that are just as grand and beautiful as in any other part of the world, and I wouldn't want to close my opening observations without saying a word in this respect for two men who have done great work in bringing to us in this country our American tourists, keeping them at home. One is Mr. Child, with the magnificent service that he has given to the people in the Yellowstone Park—the hotel service and the transportation service there—and the other would be Mr. Harvey, who has made an international reputation by the splendid service he has given, and especially the service that we have at the Grand Canyon.

So far as we, here in California, are concerned with the Government, we are in the unfortunate position of having two places that affect the automobilists. Thus, as far as Los Angeles and vicinity is concerned we have the National Home for Disabled Volunteer Soldiers, and while we have spent in Los Angeles, under bond issue, the sum of $3,500,000 for macadam roads, when we reached that part of the soil under the exclusive jurisdiction of the Government of the United States we found the road impassable and impossible to go over without destroying our machine. That is the condition we find so far as the National Government is concerned. So far as the State as a whole is concerned, we have

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taken and appropriated by bond issue the sum of $18,000,000 to make great highways for the automobiles from one end of the State to the other, and when we reach other places where the automobilists desire to visit, which are under the exclusive jurisdiction of the United States, we find it so that we are met with a barrier and we can not go in. Now, having made that statement I desire to say that owing to the plans for 1915 the Automobile Club of Southern California is desirous of having more automobilists here than have ever assembled in any other part of the world at one time and have a Glidden tour, and they naturally will want to visit the national park.

Now, we of southern California, in this automobile association, and I desire to say right now that I represent no automobile manufacturer or no implement connected with an automobile—I am simply a member of the Automobile Club of Southern California—I appear here as an owner of a machine and a member of that club, and, much to my regret, without compensation. Now, having made that statement I desire to say that the Automobile Club of Southern California has taken every step possible to bring together the data to convince the Secretary of the Interior that the automobile should be admitted to the park. We have selected an engineer of great ability who has visited the park and the roads on six different occasions, and has made surveys and has made a report and it is only in the rough, Mr. Secretary, at this time, but it is a part of my remarks, and I would like to have it typed and placed in the record. Now, this examination that he has made takes two roads and makes favorable report thereon. One is by way of Wawona and coming in by Madera. From Madera to Wawona, now, the road is in use by automobiles constantly for 63 miles, or about that. Then we reach a point on the park line, and there the automobiles are barred. There is a road from 10 to 12 feet wide running from Wawona to Chinquepin, which is a distance of 20 miles, and from Chinquepin to Inspiration Point, a distance of about 13 miles.

The SECRETARY. That is the Inspiration Point near Glacier?

Senator FLINT. Yes, sir. And also, Mr. Secretary, from Chinquepin to Glacier Point, a distance of 15 miles. In this report he states that with the expenditure of $1,000 the road can be placed in shape from Chinquepin to Glacier; for the expenditure of $5,000 the road can be placed in proper condition for automobiles from Chinquepin to Inspiration Point. He also has made a survey of the road from Inspiration Point to the floor of the valley, in which he estimates that a new road on a 7 per cent grade can be constructed for $35,000, and that that road could be constructed at the time that the present road is in use by the public, which has a grade of 14 per cent.

Now that brings us up to the question that you brought up and asked us to discuss as to the point in the park to which automobiles should be permitted, and whether the road from Wawona to Glacier Point and In-

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spiration Point should be used exclusively for automobiles or jointly with automobiles and horse-drawn vehicles, and if so, under what regulations. I should say that as to the proposition of the road from Wawona to Inspiration Point and Glacier Point, that the road could be used at all times jointly with horse-drawn vehicles and automobiles with safety.

The SECRETARY. You say from Wawona both to Glacier Point and to Inspiration Point?

Senator FLINT. From Wawona and Chinquepin and branching off both ways, I say; but that if it is desired to take an extra precaution, one that we do not think is necessary, because we travel constantly on a road as narrow with as great a grade and with more chances of danger than this one daily in our southern country. If the Secretary after investigation reaches the conclusion that he wants to take extraordinary precaution, then there could be hours set apart upon which the coaches and horse-drawn vehicles could go and the automobiles go; that would bring us up to the point at the rim of the valley. Now, there are two propositions from Inspiration Point to the floor of the valley. One is the proposition of permitting, say, for an hour in the morning and an hour in the afternoon, automobiles to take the road from Inspiration Point to the floor of the valley, say, from 9 to 10 in the morning and from 2 to 3, to illustrate, in the afternoon; that the automobiles could be used during those hours on that point and that the road for a comparatively small sum could be put in condition for them.

The SECRETARY. Just a moment. Are you now discussing the 14 per cent road or the 7?

Senator FLINT. The 14 per cent road. With a small expenditure, that can be put in shape to be used.

The SECRETARY. Has your engineer made any estimate on that expenditure?

Senator FLINT. He has not made an estimate of that cost. Now, the next road that he has reported on is the road known as the Big Oak Flat Road. That road, he estimates, could be put in condition for the use of the public into the floor of the valley for the sum of $25,000. Now, in both of these roads——

The SECRETARY. You say from where to where?

Senator FLINT. Taking the Big Oak Flat Road as a whole.

The SECRETARY. From the floor of the valley up?

Senator FLINT. Yes, sir; within the limits of the park.

The SECRETARY. What is the condition outside the park?

Senator FLINT. As the report makes it, I might state in a few words, the expenditure of $25,000 would make a safe, completed road of it between 10 and 12 feet wide for the whole length of the road. Now, in reference to the road by Wawona I may say this: That in the county in which the road is situated that comes outside of the park they expect to make improvements on that road, as they do on the Big Oak Flat

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Road, so that if we carry out this plan we will have completed roads so that automobiles can use them from one end to the other to connect with the State highways, in good condition.

Now, that brings us up to the proposition as to what advantage would there be if we were limited to the rim of the valley as far as the Madera-Wawona Road is concerned. I want to call your attention to this, Mr. Secretary, that having visited the valley a great many times myself, and my judgment, I think, has been reached by many others who have visited the valley, that the great points of interest can be best seen by coming in by the road on the rim so that you can visit the Big Trees, then the Glacier Point, and the fine forest and mountain view beyond, and, on the other hand, Inspiration and Artists Points and the valley. Now, it is practical to have a garage at Inspiration Point so that the automobiles could remain there if you decide not to admit them into the valley, and for a comparatively small sum of money have a stage connect between the floor of the valley and Inspiration Point. Personally I think that automobiles can with safety be permitted to come at one hour in the morning and at one hour in the afternoon into the floor of the valley, but as you stated, there is no use, after the very frank talk that you gave us last night, of attempting to deceive ourselves or you by any statements that there is such a matter for decision to come down from the point on the rim into the floor of the valley, and for that reason I am presenting the statement along the lines that if you do decide to stop at the rim, there is a practical way of getting down here into the valley and seeing it and going back to their automobiles and returning and having a beautiful automobile trip all the way.

The SECRETARY. Now this is a man-to-man discussion. We know that the automobile is still in the evolutionary stage and that an accident happening on one of those roads on which a carriage for any cause might go over the cliff, might seriously affect the whole attendance at this park during the exposition at San Francisco. A very strong sentiment exists in many quarters against having automobiles admitted to the Yosemite Valley. What do you say, man to man? What do you think the Secretary of the Interior ought to do in regard to admitting automobiles on the floor of the valley?

Senator FLINT. I can see no danger from my viewpoint.

The SECRETARY. I am talking about policy.

Senator FLINT. I will reach that point. I would not permit the 14 per cent grade from the floor of the valley to Inspiration Point if I were Secretary of the Interior, and I wouldn't advocate permitting the joint use of that road by horse-drawn vehicles and automobiles, but I do say that from the floor of the valley to Inspiration Point—I say there ought to be an hour a day for the exclusive use of automobiles in the morning and an hour in the afternoon and horse-drawn vehicles kept off. On the floor of the valley there is no point where there is any danger of accident.

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The SECRETARY. How long does it take to go from the floor of the valley on up to the rim upon that road in a horse-drawn vehicle?

Senator FLINT. I ought to know but I don't.

The SECRETARY. How long, Colonel?

Col. FORSYTH. Two hours going up.

The SECRETARY. Then your automobiles would be compelled to start at such hour as to leave adequate time for the horse drawn vehicles to go up and they couldn't all start at one time—that is, we could not say the horse-drawn vehicles had to start at 10 o'clock and get up there at noon, very well. There would have to be some leeway for a number of such vehicles.

Senator FLINT. I can answer that, Mr. Secretary by saying I would give the horse-drawn vehicles up to 11 o'clock the use of that road.

The SECRETARY. In other words you would let the automobiles come in after 11 o'clock?

Senator FLINT. Yes, sir; and give a similar time in the afternoon, before it got to be dark.

The SECRETARY. Now, taking that suggestion, would you permit an automobile to come down that road to go through to the hotel and would you let it go around on the floor of the valley?

Senator FLINT. I wouldn't permit it to go around on the floor of the valley if I had my say.

The SECRETARY. That is what I want to know. In other words, your idea is that we ought to let the automobile come down to the hotel so as to unload there?

Senator FLINT. I wouldn't permit it to go through the valley. I think from my standpoint, being here all my life, I think one of the beauties is to have the burro to take the trip around in the valley here.

The SECRETARY. You know there are automobilists who apparently would resent the fact that they were not allowed to run their automobiles into St. Peters up under the central dome, because it could be done, and if they occasionally knocked over an Italian who was engaged in prayer it would be to them a matter of small consequence. Do you think all the automobilists would be satisfied if they were allowed to go to the hotel and get out there and be allowed to pass through?

Senator FLINT. Not all. But I think the automobilists who would not be satisfied are the ones who do more to stop the automobiles from getting into parks and such places than those who ask for reasonable regulations. So far as we are concerned we do not believe in dashing through the streets, in running down people; we believe in prosecuting those who do, and the speed maniac with his automobile is a man who wants to come dashing around in this valley amongst the trees—we do not want them—we are not asking for them. We want the man who has come across the continent or from some other part of this State to

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be given the privilege of coming into this valley with his automobile under proper regulations.

The SECRETARY. You say it would be desirable when we look into it carefully to stop at the rim and come down by a line of coaches and other vehicles that will be provided, taking care of machines at the top of the rim?

Senator FLINT. Yes, sir.

The SECRETARY. Who are the owners of the roads you have been describing to me as available for that purpose? Are they in private hands?

Senator FLINT. I understand so; yes, sir.

The SECRETARY. What arrangements, if any, can be made with those owners on this subject?

Senator FLINT. I only know from reading this report of our engineer and a conversation I had with Mr. Washburn this morning that he states that so far as that is concerned that they will cooperate.

The SECRETARY. Does that mean that they will operate as a toll road or upon what terms and conditions?

Senator FLINT. That I am not prepared to say. The president of the company is here.

Mr. WATSON. That would be operated as a toll road.

The SECRETARY. And under what tolls?

Mr. WATSON. The tolls are fixed by the board of supervisors of Mariposa County; have been for many years.

The SECRETARY. Does that include the tolls on a portion of the road that is within the confines of the park?

Mr. WATSON. Yes, sir.

The SECRETARY. They exercise jurisdiction over that part of the road, do they, for the purpose of regulating your tolls?

Mr. WATSON. Yes; have been for many years, and they are fixed, and there is now existing an automobile toll from Wawona to the valley and to Glacier Point.

The SECRETARY. What is your toll?

Mr. WATSON. $2.50 in and $2.50 out.

The SECRETARY. $5 for the round trip?

Mr. WATSON. Yes, sir.

The SECRETARY. What is the charge for the horse-drawn vehicle?

Mr. WATSON. Well, that I would not know; I would have to ask the secretary.

The SECRETARY. And what, Senator, did you say was the investment necessary to make it possible for the company to collect those tolls?

Senator FLINT. $60,000.

The SECRETARY. What do you think of the proposition of those tolls? Have you looked into the question as to whether the supervisors have adequate authority to regulate those tolls?

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Senator FLINT. I have not.

The SECRETARY. Would you do that and advise me?

Senator FLINT. I would. I would like to have some information as to the supervision of these tolls as to adjusting the rates by the secretary. The mileage, as I have it here, is only 46 miles, and that would be a $5 toll for a 46-mile road.

The SECRETARY. Well, of course, I can readily see that if they charge that amount for every automobile coming in, if there was any considerable traffic, as you gentlemen think, it would be a very desirable investment.

Senator FLINT. Very, and as I say, I assume there ought to be some regulation of that——

The SECRETARY. Mr. Watson, I don't know the regulations by the supervisors—I don't know anything about it one way or the other—but to relieve all questions of doubt on that subject would you be willing that the rates charged should be subject to regulation by the department?

Mr. WATSON. I understand that is in the hands of the supervisors.

The SECRETARY. That is not the question. Would you be willing we should regulate them?

Mr. WATSON. I am only one of the officers of the company. I will take it up with the directors and let you know.

The SECRETARY. And at the same time take up the question as to whether you would be willing for us to regulate the character of the use as between the automobiles and horse-drawn vehicles. I suppose you would want us to be able to make only reasonable regulations? Having the right to carry it into the courts if we were unreasonable?

Mr. WATSON. We have gone into that with Mr. Walker in particular as to hours, and I am satisfied we can agree on hours.

The SECRETARY. But Mr. Walker represents the automobile, doesn't he?

Mr. WATSON. Yes, sir.

The SECRETARY. Well, I am interested in the horse question. I am assuming that you might come to an understanding with Mr. Walker which he, as an automobilist, would feel was perfectly right. Suppose the horseman did not agree with him; are you willing we should regulate that question?

Mr. WATSON. Well, so long as you didn't eliminate our stage line entirely; we have quite a heavy investment here. This may look like a large deal.

The SECRETARY. I don't want to discuss the facts. You may be right. I want to know if you are willing that the Department of the Interior should make reasonable regulations as to the conditions under which that road could be used and the rates you charge for it, you having a right to carry into the courts the question of unreasonableness if you do not think we are reasonable. Will you ask your board of directors and let me know?

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Mr. WATSON. I will let you know.

The SECRETARY. Senator, have you any suggestions to make?

Senator FLINT. I am in entire accord with that.

The SECRETARY. You think there ought to be such conditions of the use of that road?

Senator FLINT. Yes, sir; just one word in conclusion. I want to say this: So far as we are concerned and the organizations I represent are concerned, we are not committed to any road. The Big Oak Flat Road is also a toll road. I presume the same conditions exist there.

The SECRETARY. Any negotiations been made with the owners of the road?

Mr. CURTIN. I speak for those, Mr. Secretary.

Senator FLINT. I simply want to say we are not committed to any road—based simply upon the report of our engineer of whose investigation of the roads in the vicinity of this valley he had made a report to our organization of what he thinks is the best plan for road surveys. First, the adoption of the road from Madera via Wawona into the valley, and second, from the floor of the valley by the Big Oak Flat Road out there on the north. Now, that would make a complete circuit from the north to the south and as far as the rim of the valley is concerned it would give immediately or within a comparatively few months, if the Secretary would consent to it, the automobilists the privilege of coming into the National Park, which is the important matter with, first, safety, and second, time, and third, a complete circuit from the south through the valley to the north. I thank you.

The SECRETARY. Now, Mr. Parker, I would like to ask you a question.

Mr. PARKER. Certainly.

The SECRETARY. Have you made such a report, in sufficient detail, as to enable the park superintendent, Col. Forsyth, and his engineers, to check it, in order to see what they think of your estimate and your suggestions?

Mr. PARKER. Yes, sir. That is, it is in sufficient detail as to specifications.

The SECRETARY. Has it included the expense of protecting walls at such points as in your judgment were dangerous?

Mr. PARKER. Yes; and as to the location of those walls.

The SECRETARY. So they can check it up?

Mr. PARKER. Yes, sir.

The SECRETARY. How soon?

Mr. PARKER. As soon as it can be typewritten.

The SECRETARY. How soon will that be?

Mr. PARKER. A few hours.

The SECRETARY. I assume you agree with me that it would be well to have it carefully checked by our engineers?

Senator FLINT. I certainly do.

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The SECRETARY. Now, Mr. Curtin.

Mr. CURTIN. This is a somewhat embarrassing condition to occupy on this subject. The object, as I understood, of the meeting was to obtain permission to enter the Yosemite Valley—that is, the park—right on the floor of the valley, and of course that permission has been repeatedly denied. We have assumed that if we got that permission at any time it would be upon such conditions as would be imposed by the Secretary of the Interior, and if those conditions were first outlined and we could comply with them, certainly permission would be granted. Now, from the conversation of yourself last evening, as well as the remarks this morning, the conditions leave us in such a condition that it is hard to meet the conditions now presented because of the apparent change of the situation. I am one of those people who believe in modern progress and that each condition which arises will take care of itself, and the only thing we can do is to endeavor to minimize danger in all walks of life, but that accidents are going to happen no matter what you may do. Now, the question arises whether we should enter the floor of the valley. This is my position exactly, and when I speak of that, Mr. Secretary, let me say that I do not represent any automobile association or any road in particular. I came in here with the owners of the Big Oak Flat Road. We believe, in behalf of the people of the State of California, that this valley ought to be open for the automobilist for the reason that it is one of the Nation's assets. It is one in which people are interested, and if their voice goes out for that permission I am one of those who believe there ought to be a solution of the question, and I concur very heartily in the story told by yourself a few moments ago—that we get through with the reading of last year's reports and take our new business up.

The SECRETARY. Well, let us take up the new business.

Mr. CURTIN. Then go into the valley with the automobile and don't let the horse keep it out. The automobile is the new business and the horse is the old one—that is the point I want to make.

The SECRETARY. Now, just a minute. Let us assume that the horse is an aging animal. Do you believe we ought to crowd the mourners?

Mr. CURTIN. I will answer that, Mr. Secretary, by the story of the old darkey who lived in the city of Atlanta. He said, "Those Yankees are a wonderful people; they came down to fight the South and only set the little nigger free."

My friend spoke of Christ riding a jackass through Jerusalem. I do not believe he would have done it if he had had an automobile. I want to say further, Mr. Secretary, on this proposition that I am one of those people who believe in modern progress; I am going to repeat that the State of California has done a good deal in this respect. I want to preface my remarks by assuring you the State of California has gone all around it and appropriated a large amount of money for the construction of roads. We have built a road to Lake Tahoe. We have connected it

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over here and we have gone in south of the Kings River Canyon. We are going to make that grand connecting link in there so we can come into the valley. The State has done its portion and we think we ought to be able to come into this valley because if a rule or condition may be made by which danger may be minimized we will endeavor to comply with that condition. Now they said, "What are you going to do about danger?" Danger occurs everywhere. My long years of experience in riding over these mountains is that accidents don't happen on narrow roads as they do on good level roads.

The SECRETARY. I don't want to interrupt you, but I feel that it is necessary to do so. All of those things I perfectly agree with, as I told you last night. Tell me where you think it can be done or how it can be done. If you have a plan——

Mr. CURTIN. I am coming to it. The only answer that appears to me is to widen the road.

The SECRETARY. Which one do you think you ought to widen?

Mr. CURTIN. You, no doubt, all know there is a bill pending for the construction of a road which would leave you go up into Lake Tahoe, and then go into Oregon and Nevada. Owing to that fact and the fact that it is the one road that reaches over 1,370,000 people, that would be the logical one.

The SECRETARY. Who owns that road?

Mr. CURTIN. The Big Oak Flat and the Yosemite Turnpike Road Co.

The SECRETARY. You say it could be widened?

Mr. CURTIN. Yes, sir.

The SECRETARY. Who will widen it?

Mr. CURTIN. The men who constructed it originally advised me that it cost only a few thousand dollars to construct that road, and said that $6,000 will widen it. That money will be forthcoming if you open the road.

The SECRETARY. That will be a toll road?

Mr. CURTIN. At the present time toll is charged only to Crane Flat. Crane Flat is only one-half mile from the park line.

The SECRETARY. Will the people be willing to consent to conditions we have just discussed?

Mr. CURTIN. I think so.

The SECRETARY. Will you find out and let me know?

Mr. CURTIN. The president is here.

The SECRETARY. Have you, or has he, had an engineer examine that road? You spoke of the man who built that road—you mean the contractor?

Mr. CURTIN. Yes, sir.

The SECRETARY. Where would that road enter the valley?

Mr. CURTIN. Over the Big Oak Flat Road, where it is now.

The SECRETARY. Where would it come out?

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Mr. CURTIN. Down to Big Oak Flat—down to Chinese Camp and that way to San Francisco.

The SECRETARY. I have been on the Big Oak Flat Road. You would go by that road to get out—you go back up to the rim of the valley by the road we came in?

Mr. CURTIN. Yes, sir.

The SECRETARY. Go right out on the top?

Mr. CURTIN. Yes; right out on the rim and out by Crane Flat.

The SECRETARY. The company has authorized the plan of changing that road when the time arrives and the permission be granted?

Mr. CURTIN. What the cost is I don't know, but they are prepared immediately to carry that work forward.

The SECRETARY. $6,000 would not build many retaining walls.

Mr. CURTIN. I only took the man's word that built the road.

The SECRETARY. Do you know that those suggestions are practical?

Mr. CURTIN. Most assuredly.

The SECRETARY. When was it built?

Mr. CURTIN. About 1874.

The SECRETARY. What are the differences in the cost of labor and material between 1874 and now?

Mr. CURTIN. It has increased considerably, but we are allowing considerable when you consider that the original road is already constructed.

The SECRETARY. In other words, then, if we should look into your suggestion as to that road, we would have to have our own roads?

Senator FLINT. Our engineer's report covers this very road. Twenty-five thousand dollars is his estimate.

Mr. CURTIN. The Big Oak Flat Co. stands ready, if the road be opened for the automobiles, to close up all the horse traffic on that road and allow it exclusively for automobile, if you so desire.

The SECRETARY. You think it would be desirable?

Mr. CURTIN. Yes, sir; I think so. Because when you reach Crane Flat in only 4 miles more you strike the Coulterville Road and come right down from El Portal.

The SECRETARY. The Coulterville Road is the road we saw coming up the valley? I was told by an expert horseman the other day that he hesitated to go over it, and that while he had gone over it, he never went over it without finding a considerable number of bowlders there that had not been there the last time.

Mr. CURTIN. I understand in recent years they have not expended much money on that road. I understand the owners of the Coulterville Road have expended but very little money on that road.

The SECRETARY. Have you taken up the question with them as to whether they would loosen up now?

Mr. CURTIN. I understand they would have to loosen up.

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The SECRETARY. Do you think they would have to put that road in shape just because you want a road there?

Mr. CURTIN. Why, in self-interest they certainly would——

The SECRETARY. You think the return would be adequate? Haven't you got the horse away behind the cart? What I want to know is what you think I can do and ought to do?

Mr. CURTIN. That is the point. If a road is opened, I would imagine it a matter to name the conditions and see if we can——

The SECRETARY. We have not gone that far. What do you think the conditions are that we have to name?

Mr. CURTIN. Open the road and tell us how we have to use it.

The SECRETARY. That is the same thing—that is certainly not an answer.

Mr. CURTIN. I am unable to say anything further than to say that if the Big Oak Flat Road is opened, we will widen it. We will go further—we will help the United States and we will take care of our own road ourselves.

The SECRETARY. I have asked you whether you would submit to regulations.

Mr. CURTIN. I will cheerfully take that matter up and forward it to you. The Big Oak Flat Road Co. has not charged any toll beyond Crane Flat. That is where this road turns off and goes down. To that point the Big Oak Flat Co. charges no toll, and many conveyances come up that way. They come as far as Crane Flat, then go down and strike the Coulterville Road. Some of them go out that far to avoid the toll on the Oak Flat Road. We would go further—we would put a telephone line and have a man there to keep advised all the time.

The SECRETARY. That is so you could warn the horse-drawn vehicle?

Mr. CURTIN. I think they should be excluded altogether.

The SECRETARY. If there was an alternative road?

Mr. CURTIN. Yes, sir. If there was any danger of meeting an automobile to exclude him altogether.

The SECRETARY. Do these suggestions you make involve the expenditure of money on any parts of the road that are not owned by a private individual?

Mr. CURTIN. Well, the Government still claims jurisdiction of the road to the old State line, but exercises no jurisdiction from there to the park line, however.

The SECRETARY. That would leave how much road to be taken care of by the Government?

Mr. CURTIN. Four miles from that point.

The SECRETARY. How do you suggest you get the money for that?

Mr. CURTIN. We have already got it.

The SECRETARY. You mean in the appropriation made this year?

Mr. CURTIN. Yes, sir.

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The SECRETARY. How is that? Is that money available for that purpose?

Mr. CURTIN. Our understanding is that $50,000 was available. I took an active part, Mr. Secretary, in the proposition of urging Congress to appropriate funds upon the assumption, which I had a right to believe, that part of it would be used to widen the road.

The SECRETARY. Now, the colonel has made his estimates of expenditures.

Col. FORSYTH. There was no estimate made for widening the road for automobiles. The appropriation of $80,000 is for the protection and improvement of the Yosemite National Park. The amount of the estimate was something like $300,000.

The SECRETARY. That is so. You made an estimate of needed appropriations here aggregating $300,000?

Col. FORSYTH. Yes, sir.

The SECRETARY. We got $80,000.

Col. FORSYTH. Yes, sir.

The SECRETARY. That is for the whole purpose?

Col. FORSYTH. Yes, sir; if we take any portion of that money to widen any of these roads for automobile purposes we will have to take it away from some other purposes.

Mr. CURTIN. We doubt if that other $30,000 would have been given at all without our effort. If there is anything further that I may add, I should be glad to do so.

The SECRETARY. I understand, Senator, that it is, of course, within our power to divert the money from any of the purposes that is needed if the situation demands it. We can not do that except upon a thorough consideration of the whole question.

Mr. CURTIN. That was our aim—to get that $30,000.

The SECRETARY. I find it valuable to have different gentlemen with different aims all boost the appropriation.

Mr. CURTIN. I think I did my part. I had the privilege of one hour and a half, and during that hour and a half I tell you I labored for the Yosemite Valley and the Yosemite National Park.

The SECRETARY. I think that is correct.

Mr. CURTIN. Anything further?

The SECRETARY. Who is the third speaker?

Mr. C. I. MENTZER. Mr. Secretary, it seems that on this occasion each man is his own press agent. That seems to be characteristic of the year.

The SECRETARY. Whom do you represent?

Mr. MENTZER. I represent Merced and Mariposa Counties, and particularly the Coulterville Road, the one which seems to have called forth criticism.

The SECRETARY. In what way do you represent it?

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Mr. MENTZER. It is a public highway, and that is our contention, and we ask that it be opened up for the use of the public—not that there is to be a toll charged for the traveling public.

The SECRETARY. That road has been an open road, a public road, as I gather from your remarks?

Mr. MENTZER. Yes, sir.

The SECRETARY. We were of the impression it was also a toll road.

Mr. MENTZER. The supervisors exercise jurisdiction over that road—the old toll road.

The SECRETARY. Is it conceded by the private interests there that it is a public road—that they have no claim?

Mr. MENTZER. For four years the county of Mariposa has exercised positive jurisdiction over the road. Mrs. McLean has the only surviving interest, and she has made no effort at all toward looking after and establishing any claim she may have had in the matter. The board of supervisors has passed a resolution—passed the necessary ordinances—what they conceive necessary to make it a public highway, and they have exercised the jurisdiction necessary under the laws of the State, and the road has become a public highway by adoption and use. A toll road, under the laws of California, may become a public highway by nonpayment of license or by abandonment. For four years there has been nothing done by the owners—there has been an apparent abandonment by those who may have any interest in the road.

The SECRETARY. There has been some correspondence on that subject.

SAN FRANCISCO, CAL., *October 5, 1912.*

Maj. W. FORSYTHE, *Yosemite Valley, Cal.*

DEAR SIR: As the owner of the toll road known as the Coulterville Road, this company begs to notify you that various articles have recently appeared in the San Francisco newspapers to the effect that it is proposed to turn the Coulterville Road over to the owners of automobiles to be used by them free of tolls, inasmuch as the road has been abandoned by the owner.

We beg leave to say that this company is the owner of the toll road from Hazel Green to the border line of the old State Park, and also from Hazel Green to Crane Flat. This road passes through the Merced Grove of Big Trees. This road has never been abandoned and it is the intention of this company to operate the same as a toll road and to collect tolls therefrom.

We would thank you to inform the proper authorities at the proposed conference soon to be held in regard to this matter that this company has decided objections to permitting its property to be taken away from it and turned over to the public for free use.

Yours, truly, COULTERVILLE & YOSEMITE TURNPIKE CO.,
By MARY HELEN MCLEAN, *President.*

1423 WILLOW STREET,
Alameda, October 9, 1912.

Maj. W. W. FORSYTHE, *Yosemite Valley.*

DEAR SIR: In explanation of the accompanying letter I would like to remind you of something which I told you at a conversation in your office. The Macauleys would not pay their toll at the tollhouse, and when I remonstrated with them, told me to

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come and collect it. Not only this, but they told campers how to get by the tollgate by going through their place. Their toll would have more than paid the taxes and license, and had they paid what was due, I could have kept the road in good shape. The Y. T. Co. has regularly paid the amount agreed on for its use of the road. I have never abandoned the road nor given it up, but have complied with the law as far as I knew it and was able.

My father, Dr. John T. McLean, put more than a hundred thousand dollars in that road, and could I realize something from it, it would be a great blessing, as my own savings were used in caring for him during his last long and painful illness. I have no one on whom I can depend but myself and nothing to look forward to except hard work unless I can realize something from this road, which I would be willing to sell at a reasonable price.

I hope you are well, and that you have continued to find Yosemite as delightful a place of residence as you anticipated.

Very sincerely, (Miss) MARY HELEN MCLEAN.

Mr. MENTZER. Mr. Secretary, it is apparent from the reading of the communication that the McLeans still claim some interest that may raise a question of law and one that will be disposed of by Mariposa County. It has exercised jurisdiction over that road. It has kept the road under improvement its full length for the last four years.

The SECRETARY. Right into the valley?

Mr. MENTZER. My information is right into the valley. All the work that has been done on the Coulterville Road has been done by the board of supervisors of the county and of that district.

The SECRETARY. Has there been any work done on that road, Colonel?

Col. FORSYTH. Not that I have been able to discover.

The SECRETARY. Has there been any, Mr. Mentzer?

Mr. MENTZER. Yes, sir. This last year.

The SECRETARY. What work was done?

Mr. MENTZER. Something like $75 was expended.

The SECRETARY. On what length of road?

Mr. MENTZER. About a mile on the grade into the valley. On the other portion there was something like $400.

The SECRETARY. On the important part, the slope down into the valley, there was something like $75 expended?

Mr. MENTZER. Yes; this last season.

The SECRETARY. What do you think of the expenditure of $75 on that road as being the basis of any claim of exercising jurisdiction over the road?

Mr. MENTZER. In the last four years there has been money expended on it.

The SECRETARY. What is the total amount that has been expended on the part which Mrs. McLean claims in her letter?

Mr. MENTZER. Averaging about $300 yearly for four years.

The SECRETARY. For a distance of about what?

Mr. MENTZER. About 13 miles—that is, on the old toll road that she claims. As far as the Coulterville Road is concerned, I say to you that

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it is as smooth as any road in the valley—absolutely no question about it. The width can be enlarged without any considerable expense, and the road may be enlarged by the simple use of a road grader in many instances.

The SECRETARY. Has any estimate been made as to the cost?

Mr. MENTZER. This is an estimate made from personal observation, and I give it for what it is worth. Mr. March estimates that by the expenditure of $5,000 from the point where it commences to be a toll road near Bower Cave to the rim of the valley here, that the road can be put in a very passable condition. As far as the grades are concerned from Bower Cave to the rim of the valley there is nothing to interfere in any way with the use of an automobile. The road is as smooth as anything here in the valley. It seems to have been the first road traveled by an automobile in the past. Years ago a photographer made the trip into the edge of the valley and he got in and out through that road, Mr. Secretary.

The SECRETARY. I congratulate him.

Mr. MENTZER. As far as that road is concerned, if you want any information in the way of engineering data, we will present it to you. The engineer we have that was going over the matter was called away—the county surveyor of Merced County. There has been some mention made about the expenditure of money looking forward to the opening up of a road and a report made by a commission, which you are familiar with. Upon investigation of that report—it was made in 1900 by the commissioner that was appointed by the Secretary of War for that particular purpose—there was a recommendation about a new road, and that new road will come sooner or later. It is going to come. We are going in the right direction when we ask for the Coulterville Road. We may assure you of the fact that there is no danger in going that way. The Yosemite Transportation Co. will put on auto stages or auto trucks to carry the people from El Portal into this valley and get them here in an hour and a half.

The SECRETARY. Aren't we getting our wires crossed? You don't agree with the Senator?

Mr. MENTZER. Of course not.

The SECRETARY. How would you take care of the horses if we put these auto trucks on the Coulterville Road?

Mr. MENTZER. The only horse-drawn vehicles that go over that road now, practically, are the stage coaches from here to El Portal. There has only been one horse-drawn vehicle over the Coulterville Road this summer.

The SECRETARY. I am not surprised to hear you say it.

Mr. MENTZER. The only way is to take you over the road and assure you, so far as the travel is concerned, there will be no injurious results.

The SECRETARY. The report of our engineers is that that road could not be used without some considerable expenditure.

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Mr. MENTZER. That is to be used jointly by horse-drawn vehicles and the auto?

The SECRETARY. I assume that if we should eliminate the horse from the valley and let the automobile take its place, if we opened it up to-morrow a certain number of automobiles would begin to pile in over the rim.

Mr. MENTZER. I understand there is private property at that point. If you desire any data from an engineering standpoint along those lines, we will present it. The proper way out of the valley is along the river. In this same report made a few years ago the cost of the road would not exceed $135,000. That carries it directly into Merced County, where the roads are good, and will connect directly with the State highways. The proposed road for 75 miles will not exceed a 2 per cent grade.

The SECRETARY. That is a matter for the State and Federal Governments.

Mr. MENTZER. The State is beginning to loosen up already, and, as you suggested, there is one man in attendance here who could speak for the Federal Government, as it were.

The SECRETARY. Don't speak to Congressman Raker here. What you have to do is to furnish him with ammunition.

The SECRETARY. There was a third representative elected to speak for the automobilists.

Col. WEINSTOCK. We finally decided, Mr. Secretary, that we probably would achieve better results if we set aside our conflicting views and harmonized, and we did. We made up a program.

The SECRETARY. I judged that was what it was.

Col. WEINSTOCK. In doing so we discovered we were reckoning without our host, because no sooner did we submit the program than you tore it to pieces in about two minutes. Under the circumstances, then, the members of the committee who had prepared themselves with a magnificent array of pyrotechnics find they will have to leave them piled up or carry them away and inflict them upon some more susceptible person. Accordingly Senator Flint changed his attitude and point of view. The Senator came with some very excellent constructive suggestions. Senator Curtin likewise came with constructive suggestions. I am not prepared to submit any constructive suggestions. I am a practical man along these lines. I therefore call upon Mr. Walker, president of the automobile association, and also upon Mr. Mordecai, who represents the central part of the State, and who likewise, I hope, will be able to give you suggestions that will be helpful.

The SECRETARY. We will be glad to hear from Mr. Walker.

Mr. WALKER. Mr. Secretary, ladies and gentlemen, like the portly gentleman who preceded me some time ago I am extremely nervous, and my nervousness covered such a period of time that I was not able to

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write so it would be legible; therefore what remarks I make will be, in a measure, disconnected.

Early in this fight for the admission of automobiles to the Yosemite Valley I began to look about for some tangible and practical means of overcoming what was apparent to me as an almost insurmountable objection on the part of many people toward the admission of automobiles to the park. Realizing that it was necessary for us to agree on some one proposition we took up the matter of serving the greatest number of people—the greatest number of automobilists—and of getting what we thought the quickest action in the premises; but Senator Flint has already said the largest number of automobilists come from the south. We of the north have never learned the secret of their wizardry in the compilation of statistics, and so I do not hope to compete with him. We agreed to state the situation from the point of the greatest good to the greatest number and from the point of immediate results, and it is the conclusion of the Automobile Club of Northern California that we would very strongly urge the Secretary to consider an immediate opening of the road from Glacier Point, not as a means of ultimately satisfying us entirely, but as a means of relieving the strain or the restraint, rather, that the automobile fraternity may feel now with reference to this valley. Our views are that ultimately, and when in the judgment of the Department of the Interior it seems best, we be permitted to come over in the Big Oak Flat or Coulterville Road and pass through the Wawona Road, or vice versa. Realizing that that is an involved question, and it seems more involved the longer we listen here, I am strongly in favor of placing the California State Automobile Association on record as being satisfied at this time with permission to come first to Glacier Point over a privately owned road under restrictions that the Government may make as to the time of the passage of autos and as to the rate of speed, and, second——

The SECRETARY. How about the toll?

Mr. WALKER. I am unable to offer anything on that inasmuch as it is a proposition involved between yourself and the attorney representing the road company.

The SECRETARY. What I want to know is what you think as an automobilist. Do you think we ought to impose as a condition for carrying out this plan, that the owners of the road should submit to reasonable regulations?

Mr. WALKER. Most certainly. I feel that we should not be left entirely in their hands because of their being in possession of the only suitable road.

The SECRETARY. This road passing over the Federal domain, would we be safe in leaving it with the local authorities of that county, subject to future legal determination, or should we insist that they consent to reasonable regulations by the Department of the Interior?

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Mr. WALKER. I think the best interests of the automobilists are in insisting that the Government be taken into consideration in the regulation of rates.

The SECRETARY. You mean the Federal Government?

Mr. WALKER. Yes, sir.

The SECRETARY. Is that one of the roads that Senator Flint has referred to?

Mr. WALKER. It is.

The SECRETARY. How would it come in?

Mr. WALKER. It goes through Wawona.

The SECRETARY. Where do you leave the railroad?

Mr. WALKER. It is many miles from the railroad. We reach the railroad at Raymond. Those from the north would have to come to Merced and cross either to Wawona by way of Mariposa or else go down to Brenda which is midway between Merced and Madera and cross over in that way, going up to Wawona, where we come now by automobile. We go that far at this time. It is not the widest road. It is not the road we ultimately hope to have, but in our club we feel that if we can not get a whole loaf we are willing to take a half loaf.

The SECRETARY. You know the public sentiment. You know the conditions in the valley. What do you think of the question of policy? Do you think it wisdom to go beyond the spot you recommend at this time?

Mr. WALKER. Not without the roads being fixed and after being fixed not without definite regulations as to speed and hours of travel. From some personal experiences I have come to the conclusion that it is a very wise thing to place restrictions as to speed and minimum time elapsement between two points. If the department determines to allow automobiles to go to Fort Monroe or Inspiration Point within a certain time, during which we may be permitted to travel to the floor of the valley, I think as a condition incident to that a minimum time elapsement should be provided and any one negotiating the distance in a shorter time than that called for should be placed under arrest because, if accidents happen, it would tend to give us a black eye, which we are not entitled to.

The SECRETARY. You think that should be done as a protection to the automobilists themselves?

Mr. WALKER. I think, as a matter of safety, it should be done. The question of admission of automobiles to Glacier Point does not, in my judgment, involve very many problems. You don't make any abrupt turns. You don't travel over any road that is at this time dangerous. You travel over a road which, I understand from a report from Lieut. Col. Forsyth, involves only the expenditure of a small amount of money, which perhaps in a few months' time would be available. The stage company has agreed to place that road in condition to meet the general

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requirements of Col. Forsyth. That being accomplished, there seems to be no reason why we could not have relief from the barrier which is now raised against us in the valley.

The SECRETARY. Now, Senator Flint suggested a road of which there would be two branches—that is, you go from Inspiration Point first?

Mr. WALKER. It is one road to El Capitan. From there there are two branches, one going in the direction of the floor of the valley and passing Inspiration Point and Fort Monroe, the other turning to the rim and going to Glacier Point, making an ascent of some few hundred feet.

The SECRETARY. Do you advocate at this time opening both those forks from Chinquepin?

Mr. WALKER. Not of necessity. The one to Inspiration Point would involve a change in the arrangements of the stage company which they have agreed to make—having stage accommodation to meet the automobiles and come down to the floor of the valley. That involves constructive work which the other does not. The other requires only the passive consent of the Government at this time to allow the automobiles to come in and the expenditure of a thousand dollars, which the stage company has agreed to.

The SECRETARY. You understand the Government has no financial interest in it beyond the protection of the people?

Mr. WALKER. The members of our club will stand behind the Government on the question of any exorbitant rates.

Mr. LOVELL. I will ask Mr. Walker if we did not discuss the rate of $2.50, which has been fixed by the supervisors, and ask him to state now whether that was not agreeable to him; and I want you, Mr. Secretary, to bear in mind that we of course do not care to turn this road entirely over to the automobile people. We have a very large plant——

The SECRETARY. That is one of the reasons why I think we have got to regulate it.

Mr. WALKER. Mr. Secretary, Mr. Lovell is attorney for the Yosemite Stage & Turnpike Co., and we have had considerable discussion on this subject. I consider that the toll is reasonable, provided it carried with it a provision for making the Big Trees, and I think that possibly they may agree to that. The reason I have singled out Glacier Point and that part of the road is that the idea of the greatest good to the greatest number carries with it the idea of going to the Big Trees. There are many people as much interested in viewing the Big Trees as there are of going to the valley. We will go to the Big Trees and see the valley. Many people will go to the valley as possibly you and I have gone to points of interest and have been busy, and we only wanted one glance at it, and this glance we may get is from Glacier Point and from Inspiration Point—either one of those and on this road we will have accomplished both those points. Now, the matter of getting to Inspiration Point is somewhat more involved than the one to Glacier Point. I am willing

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to say that our club will be very glad to accept the opening of this road to Glacier Point. The situation seems involved—the Government does not move very rapidly. It is only a matter of a small expenditure to put the roads in shape so that those in charge of the work would be willing to trust automobiles over it indiscriminately and in the interim.

The SECRETARY. Mr. Walker, I understand your position to be, as you expressed it to me, that as conditions are you think it would not be wise to admit machines to the floor of the valley.

Mr. WALKER. Not to the floor.

The SECRETARY. You think we ought, as promptly as possible, to open the way to Glacier Point?

Mr. WALKER. I am brought to that conclusion by the situation which presented itself some years ago in the city of San Francisco. We have quite a beautiful park there. For a long time the commissioners there absolutely refused the admission of automobiles to the park. We made a strong fight and we didn't get anywhere. Finally we asked that we be permitted to use one drive. We were permitted to do it. One by one we were given the roadways of the park until to-day the larger per cent of vehicles coming in the park are motor vehicles. I think that will be the result in this case if we are permitted to come to Glacier Point. We will be able to demonstrate to the lieutenant colonel, or whoever is in charge, and whom I feel, perhaps, from his remarks, is unduly apprehensive of danger in the operation of automobiles, I believe we will be able to convince him that it is not quite the bugbear that it seems and that there is a very sane and practical solution of the question, in placing a minimum time limit and negotiating the exact distance, fixing certain hours for travel, which do not trouble the stage company.

The SECRETARY. There are a lot of minor matters——

Mr. WALKER. That is a restriction that is placed on cars in many of the cities in this State, and there would be no objection.

The SECRETARY. I think, Mr. Walker, you have been very frank and candid, and I will give your suggestion very careful consideration.

Mr. MORDECAI. As I remarked last night at the meeting, I was requested to come here by the Madera Chamber of Commerce for the purpose of furthering the interests of the Wawona Road into the valley or to the rim of the valley. Now, the old stage road from Madera to Wawona has been traveled a great number of years. I am familiar with the history of it, in fact, familiar with the history of the whole of that country for the past 40 years. I came over all these trails on horseback and came into this valley horseback 40 years ago down this trail we have been discussing here to-day, on the rim of the valley, on the Wawona Road. Now, the history of the stage road from Madera to Wawona is that it was adopted by the Yosemite Stage & Turnpike

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Co. as the most feasible and practical road to Wawona and has been from that time continuously used in that respect; has been used in that connection ever since, not only for stages, but in the evolution of travel it is now used successfully and safely by automobiles as far as Wawona.

Now, the question as I understand it, Mr. Secretary, presents itself here to us, as to which is the best road to come to the rim of the valley. I do not advocate, at this time, going to the floor of the valley at all with automobiles. The question as to which is the best road in every respect, in every regard—convenience, safety, grade, scenic beauty—all those matters which should be considered in a matter of this kind, which is proposed for the convenience of tourists more than any other object. Now, it seems to me that the idea that has been advanced here of this grand loop embracing the Wawona Road coming into the valley and going out over the Big Oak Flat grade is a grand proposition, and no doubt will ultimately come to pass, but, Mr. Secretary, I should respectfully suggest that at this time we are not prepared for a proposition so large as that. I do not think that the Government is prepared to build roads from the floor of the valley up to meet those various points of interest, and taking all considerations together—the present conditions which actually eliminate any passage of automobiles from the rim of the valley down to the floor—it seems to me that the best thing that can be obtained, the best object to be attained, the best for the whole country, is the proposition to bring this road from Wawona to Glacier Point.

The SECRETARY. The suggestion made by Mr. Walker?

Mr. MORDECAI. Yes, sir. Now, as to the constructive possibilities of these roads, I am not prepared to give any data at this time, and I do not think it is necessary in view of the fact of the exhaustive report that Mr. Flint and his engineer have made here to-day. They have covered the whole question so far as I can see, and there is nothing for me to argue on at all. The only thing I should like would be that this road would bring us by the Big Trees and along the best scenic route to Wawona, to the best point of view over this valley. And in that regard it far surpasses any other road which comes to the rim of the valley. That is the point I would make, and in arguing in behalf of these roads that, I think, is an essential point. It is not only a question of grade, not only a question of expenditure of money, but it is a question as to which route will display the great beauties in any of these roads. That is one of the great questions, I think, as much as the expenditure and the grade, and for that I am heartily in favor of letting the matter stop at that, so far as the interests of my community are concerned; let us advocate the opening of this road to Glacier Point and let the matter rest at that.

Mr. SECRETARY. We seem to be approaching a degree of unanimity which is gratifying.

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Mr. MATSON. On behalf of the Los Angeles Chamber of Commerce, we people of the South, in coming to this conference, came prepared to give you facts and figures, and you have received them——

The SECRETARY. That is, we are going to receive them.

Mr. MATSON. You shall have them in written form, and we are further prepared to back our documents up with the presence of our engineer, whose services we have tendered the Secretary of the Interior, in order that he may give him facts and figures. The gentleman who just spoke and Mr. Walker, also, I want to take issue with them on this trip to Glacier Point. Gentlemen, you have strayed away from the proposition which the railroad man put up just a little while ago. Why don't they bring more people into the Yosemite Valley? Because you have not the accommodations for them. Are you going to improve conditions by bringing them up to Glacier Point, leaving your people, giving them a bird's-eye view of the valley? Where is your capital coming from? Look at it from a broad point of view, neither of the gasoline-propelled vehicle or the coal-burning. Leave both out. Look at it from the standpoint of the crop that Senator Flint spoke of awhile ago—the biggest crop the world has. You want that $400,000,000. I tell you, we people of Los Angeles demand your respect. We do not ask it, we do not crave it, we demand it. We have shown you how to keep the $400,000,000 in the United States. We have developed a country a few years ago a desert, and we have brought money from all over the globe in the development of that country, because we have an attractive spot. We have gone 250 miles into the mountains to get water. We have played an important part in building State highways.

Therefore, I ask that special consideration be given the proposition—the relation of the trip to the Yosemite and tourist travel. We are not going to satisfy the tourist travel—there is not a man here who is going to be satisfied to drive his machine, who wants to come to the Yosemite, who is going to be satisfied to drive his machine to Glacier Point and then come down the trail with a burro. The report of our engineer is feasible. I believe you can easily be convinced of the fact that it is a good plan for permitting those machines to come into Wawona, up to Chinquapin, visit Glacier Point, and from Chinquapin down to Inspiration Point. If, in the judgment of those in charge of the park, it is too dangerous for machines to enter the valley, I would accept the modification of allowing the machines to stop at Inspiration Point; but I do believe that we are reasonable in asking that an hour—2 hours out of 24; 2 out of the 16 of daylight during the season—be allotted to the machine to come into the valley. Senator Flint very frankly told you, without conference with any of the delegations from the South, that he wouldn't want to see the automobile running at large over the valley. Neither would I. I feel that the State of California owns this park, when you come down to it, and the State of California did a great and noble thing

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in turning it over to the Government to save its possible absorption by private interests. I believe we are entitled to some consideration. We want the Government of the United States to recognize the fact that we are going to use this park not in an improper manner, but we are going to develop this asset for the benefit of all people.

As Senator Curtin said last night, a Government of the people, by the people, and for the people, and we are not trying to drive the horses out of the Yosemite Valley. We are trying to make it possible for people to get in here. We can't induce our good friend Frank Miller to come in and put up a good hotel if he thought the automobile would be on top of the hill. You can't expect the railroads to give better service or better rates under the present conditions; but if you give the people consideration we would double, treble, and quadruple the traffic to this park.

The SECRETARY. We don't admit any automobiles to the Yellowstone. Mr. Child runs some very considerable hotels in the Yellowstone without any automobiles coming in the park.

Mr. MATSON. How many automobiles are there in that district? There are 8,000. We have 85,000 within reach of this park of our own, and we told you this morning we had 50,000 visiting.

The SECRETARY. That doesn't answer me at all.

Mr. MATSON. I say there are 8,000 within reasonable reach of the Yellowstone, and I tell you we have 85,000 of our own and 50,000 visiting machines, a total of 135,000 automobiles within the confines of the State of California within reach of this park.

The SECRETARY. You said that Mr. Miller, as an illustration, would not put up a hotel unless he got the automobile travel.

Mr. MATSON. No; I say that any investor—do not misunderstand my statement. I said that an investor would hesitate to put his money in a concession here in the floor of this valley if a large percentage of the travel that would use that concession were denied access excepting by burro to the valley.

The SECRETARY. That is another story.

Mr. MATSON. That would diminish the railroad travel and not increase the railroad travel. I went back, Mr. Secretary, to the line of argument followed by Mr. Fee and Mr. Burns—the railroad questions here to-day—because, I say, it has a very important relation. We have a community of interest, and we want to protect their interests as well as our own. I wish to give you just one more little thing here. During the winter our average number of inquiries at the Automobile Club of Southern California, our headquarters, are 20 per day concerning the Yosemite Valley, and approximately 3 of the 20 have come to the Yosemite by reason of the restrictions. Now, those inquiries are from the tourist element and would benefit any community through which they pass in reaching this valley, and there is only that small percentage, approximately 15 per

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cent, 14 and a fraction per cent, of the inquirers come to the valley. I believe that a percentage of that kind is entirely out of all proportion.

The SECRETARY. You think there would be a definite advantage in the way of giving increased access to the public and in that way benefit the hotel or other concessions in the park if at that point on the rim where the automobile is admitted there was afforded access to the valley and that that access certainly could be furnished by conveyance—stage or horse-drawn conveyance—and that, if practicable, the automobile itself should be permitted to come as far as the hotel, that is, using one road to the hotel and not going about in the valley. Was that at certain hours of the day, as Senator Flint has suggested?

Mr. MCSTAY. Yes, sir; that is the point, with one addition, perhaps. If, in the judgment of the Secretary and those in charge of the park, the present road is absolutely unsafe from Inspiration Point to the valley, that the road to Inspiration Point be opened with the understanding that the road to the valley be opened as soon as the wherewithal can be furnished.

The SECRETARY. That last provision is so controlling and important that you can omit the "if." Let us get the wherewithal.

Mr. MCSTAY. We will help you if you will make the recommendation about the building of that road; we will help you get the wherewithal. I believe, beyond a question of doubt, that we can get the appropriation through Congress. I know that the automobilists of California are sufficiently interested, and I know we can secure the cooperation of the automobile clubs throughout the United States on that proposition. I pledge you the support of the Automobile Club of Southern California.

The SECRETARY. Let us get that clear. I am thoroughly in favor of the proposition that the automobilists, if admitted to the rim of the valley, ought to be afforded a feasible means of going on, so that they will not have to go back the way they came in.

Mr. HAWKINS. Mr. Secretary, I should like to tell you how I think this can be done now under your present conditions.

The SECRETARY. Please tell us something about your knowledge.

Mr. HAWKINS. I have been in the motor-car business as western manager for the White Motor Car Co., who manufacture motor-car trucks.

The SECRETARY. How familiar are you with the condition here.

Mr. HAWKINS. I have been studying this a number of years. I have been in a number of times. I have come in on one road—I am not familiar with any but the Big Oak Flat Road. I have recently, however, worked out a number of similar transportation problems for traffic people. I have recently worked out a transportation problem jointly with horses and motor trucks for the Midway & San Pedro Oil Pipe Line, running some 300 miles through southern California, under similar conditions, where there was but one road—a narrow road through the mountains under dangerous conditions—and I won't take a minute of your time,

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simply to point out what seems to have been overlooked, that the road I came in over, with the exception of about 3 miles from the bed of the valley up to the rim, is a perfectly safe road for horse and automobile to go on because the passing places are frequent. There are narrow places, but passing places are sufficiently frequent that the automobile can back up or go by without any more danger than anywhere. From the rim, for 3 miles up, is, I think, a very dangerous road.

My recommendation is that inasmuch as it is about a two hours' haul for a team for the 3 miles, allowing liberally; that you let your teams go over the road from one end, starting your automobiles first, the faster vehicles first, and the slower ones afterwards, carry those vehicles to the top to the safety point, during certain hours; then stop the traffic in that direction for two hours and let the traffic come in the other direction for two hours.

The SECRETARY. Let us put that into the hours of the day.

Mr. HAWKINS. But confining it to daylight, say, at 8 o'clock in the morning.

The SECRETARY. At 8 in the morning you would permit the automobile to go up or down this road either way?

Mr. HAWKINS. No, sir; let us say they are permitted to start from here to go up at 8 o'clock in the morning.

The SECRETARY. During what period can they start?

Mr. HAWKINS. I should say during a period not to exceed 20 minutes.

The SECRETARY. That is to say all automobiles should be there at 8 o'clock and should be off by half past 8.

Mr. HAWKINS. I would say that when they are gone the horses follow. Then, that no automobile or horse that appears there 10 minutes later should start for another two hours.

The SECRETARY. Take the horse-drawn vehicles, they are going to start at half past 8.

Mr. HAWKINS. The machines start first; that is what I said. Automobiles to start between 8 and 20 minutes after and allow horses to start 10 minutes after. My proposition of 20 minutes was from 10 minutes before to 10 minutes after.

The SECRETARY. It is not necessary to agree on the exact time. I want an illustration. In the 20 minutes between, 10 before and 10 after, you would start the automobiles?

Mr. HAWKINS. Yes.

The SECRETARY. After that for what period of time would you start horses?

Mr. HAWKINS. For another 20 minutes. Let them be there or wait another 2 hours.

The SECRETARY. We wouldn't start very many in that 20 minutes. By half past 8 they would all be off. You wouldn't let any other vehicles from the bottom of the valley until what time?

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Mr. HAWKINS. Until the relay of vehicles from the top of the valley had all reached the bottom.

The SECRETARY. These vehicles at the bottom would be allowed to go to the top before anybody starts down?

Mr. HAWKINS. Yes, sir.

The SECRETARY. So that that means that from half past 8 to half past 11, no vehicles would start down from the top?

Mr. HAWKINS. Yes, sir.

The SECRETARY. Now then, you would start them down from the top the same way?

Mr. HAWKINS. Yes, sir.

The SECRETARY. You wouldn't allow any additional vehicles to start from the bottom until they all got up to the top?

Mr. HAWKINS. No, sir.

The SECRETARY. That would mean no horse-drawn vehicles could start from the top until the middle of the afternoon.

Mr. HAWKINS. They would go down fast. Two hours would be sufficient to go down.

The SECRETARY. That would mean, then, if you started at half past 11 they would all be traveling during the middle of the day.

Mr. HAWKINS. If your lunch hours interfere or your eating stations interfere, change your schedule.

The SECRETARY. Have you done anything more than has already been suggested, namely, that we allow the vehicles to go up in the forenoon or afternoon?

Mr. HAWKINS. You can do it that way or at more frequent intervals.

The SECRETARY. Can you start people in the middle of the day without eating luncheon? Wouldn't it be practical to start your hours for going down after luncheon?

Mr. HAWKINS. Yes, sir. Then that comes to having vehicles go up in the forenoon and go down in the afternoon. You start after luncheon, about 1 o'clock—let us say at the rim of the valley at half past 1—and you come up every two hours. Vehicles which have come from Stockton, Sacramento, and San Francisco can then come, when these vehicles have all gone to the top, into the valley and get here for dinner.

The SECRETARY. Did you say only in the forenoon or only in the afternoon?

Mr. HAWKINS. The point that I make is that with sufficient intervals it doesn't increase the present danger of the road. It allows both horse-drawn vehicles and automobiles to use the road, so far as that particular road is concerned. From my experience with motor cars and motor trucks doing the same thing that is a perfectly simple and feasible thing to do—to start in to-morrow without any expense or any difficulty.

The SECRETARY. Assuming the road is passable and properly protected, which we have been told all along the line is not so.

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Mr. HAWKINS. The road is passable. They are using it now.

The SECRETARY. But not by a combination of vehicles.

Mr. HAWKINS. The combination does not make any difference. They are going in the same direction, the fast ones before the slow ones.

The SECRETARY. Do you think the automobile can use the same road that a horse-drawn vehicle can?

Mr. HAWKINS. Certainly.

The SECRETARY. Can they use a road with equal safety?

Mr. HAWKINS. I didn't understand you to say——

The SECRETARY. That is what I meant.

Mr. HAWKINS. Where the automobile will go, and it can go comfortably over that road, it is a safer vehicle than a horse-drawn vehicle.

The SECRETARY. There is some difference of opinion on that among engineers. Have you had any experience in engineering? Are you a constructive engineer at all—road construction?

Mr. HAWKINS. No, sir. I am a mechanical engineer. The point I make—this question of motor-car traffic over bad roads—has been a specialty of mine for years in mountains and under these conditions, and I say, without fear of successful contradiction, that the motor car is safer, either as a motor truck or a car.

The SECRETARY. Suppose we send a good, heavy car up this road and something happens to the gear half way up, what is going to happen with the car?

Mr. HAWKINS. The same thing would happen to a horse-drawn vehicle if an axle broke.

The SECRETARY. How often does the thing happen to the one?

Mr. HAWKINS. I should say it probably happens a little more often with the automobile than with horses.

The SECRETARY. A good deal more often.

Mr. HAWKINS. Perhaps so in the hands of the average driver.

The SECRETARY. It would block the entire use of the road—you think we can afford to have the traffic stopped?

Mr. HAWKINS. Temporarily, as they do on a railroad. There is scarcely such a thing as not getting a motor truck out of the way.

The SECRETARY. I have had considerable experience——

Mr. HAWKINS. I have also, but it is not a considerable delay. It temporarily blocks the traffic but it can not be avoided.

The SECRETARY. It can be avoided by first providing proper turnouts.

Mr. HAWKINS. Your breakages in a motor car comes from speed. Drive a motor car at proper speed.

The SECRETARY. Mr. Walker had an accident and there wasn't anything the matter except that the steering gear went wrong. It sometimes does go wrong.

Mr. HAWKINS. It is largely a matter of speed that breaks your automobile.

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The SECRETARY. Not always.

Mr. HAWKINS. But the point I am trying to make clear is that this road or both these roads in and out of here at the present time under proper regulations intelligently applied with speed restrictions, which I would insist upon, can be used—it is the misuse of the road that is dangerous.

The SECRETARY. I am addressing myself to those statements you have made that you think there would only have to be a small amount of work done at a few places where you say it looks dangerous.

Mr. HAWKINS. I don't say they have to do the work on it. You put a railing up there—the man who goes by or the lady who rides by in any vehicle feels more comfortable. It is of no consequence as a matter of safety. If you put on your proper speed restrictions you have no difficulty. It is the misuse of the road that makes it difficult.

The SECRETARY. You say if it looks dangerous just put up a wooden railing that looks like protection but is not any protection. Do you think we ought to fix those points in any other way than by putting up these wooden railings that make it look less dangerous?

Mr. HAWKINS. No, sir.

The SECRETARY. You think that it is all right without?

Mr. HAWKINS. Yes, sir.

The SECRETARY. And that the turnouts are adequate. You haven't met my proposition of a broken-down machine.

Mr. HAWKINS. You tow it out.

The SECRETARY. Say it breaks down in the middle of the route?

Mr. HAWKINS. Perhaps Col. Forsyth can tell me how many turnouts there are on that road from the floor to the rim.

The SECRETARY. They have got some, but the report has been that they ought to have more.

Mr. HAWKINS. A turn out is a very simple thing at certain intervals and a very inexpensive thing. My opinion is that it is feasible—perfectly feasible at the present—by confining your traffic to one direction at a time. It is perfectly feasible to operate it at the present time without the expenditure of a dollar. I think it can be demonstrated at any time.

Mr. LEHMER. I would like to say on behalf of the Yosemite Transportation Co. that when the time for admitting automobiles onto the floor of the valley comes the transportation company hopes they may have the privilege of operating automobiles and automobile trucks over the El Portal Road.

Mr. HAWKINS. I consider that perfectly feasible.

The SECRETARY. I want a more definite opinion. I want somebody that is able to give a more definite opinion——

Mr. WALKER. If I may be permitted, I would like to go on record in reference to this question. The enthusiastic and able speaker from the South apparently did not get my meaning. My reason for going to

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Glacier Point is that it is an entering wedge in the matter. It is a means of instilling confidence on the part of departmental authorities and it is a step in the right direction pending the accomplishment of what we want. It is apparent that it requires a congressional appropriation before anything can be done as to coming into the valley to those who look to the utmost safety of everybody; that being apparent, it means a year or more to wait. I believe a solution will be found in permitting automobiles at the opening of next year's season to come to Glacier Point, but it is not my idea that it will ultimately settle the problem, but it is my judgment that at some time we should be permitted to enter the valley, coming in one way and going out the other.

Col. FORSYTH. With every desire to see the means of transportation to the Yosemite Valley increased in every reasonable way and without any desire to throw any obstructions in the paths of the auto people, it occurs to me that the railroad companies connecting with the Yosemite Valley Railroad, companies that certainly are furnishing ninety-seven out of every one hundred dollars that is expended in the interest of improving travel to the Pacific coast and to this valley, should be heard in connection with the proposition to bring autos to the valley or to the rim of the valley. What we need here and what these people desire is A No. 1 hotel accommodations in the floor of this valley. I hold no brief from Mr. Drum, the president of the Yosemite Valley Road, nor am I authorized to speak for Mr. Lehmer, but I am speaking for the railroads back and connecting directly with the Yosemite Valley Road that are putting forth special efforts to increase this travel, but it does occur to me, whether it be Mr. Miller or some other gentleman engaged in the hotel business, may be induced to come here and put in a first-class hotel; that unless simultaneously with automobile travel to the rim of the valley auto service is established between El Portal and the Sentinel Hotel, the building or construction of a suitable hotel in the Yosemite Valley is likely to be postponed a considerable time.

Mr. NELSON. I am in a position to answer several questions that have been asked. It has been my good fortune to have made two automobile trips into this valley. I have been over every road in the valley for the past 19 years. This road coming down into the valley, the Big Oak Flat Road, I traveled in an automobile in 1903, again in 1906. I found it perfectly safe, and there is not a road going in or out of this valley that is not as safe as 40 roads I could put you on within a few miles of San Francisco under similar conditions, just as narrow, just as steep, and there is no trouble going over them whatever. You never hear of anything. There could be no blockade on this road. You have three methods of getting out of the valley. If one road was wiped out entirely, you have the others. The part of this road you seem to think would be of serious importance is not traveled by horse-drawn vehicles at all.

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You want to get out under the head of new business. They have been asking why it is the railroad travel has diminished. They know, and you know, and I know, it has diminished because the people who have been spending their money traveling are traveling in automobiles, and the records show it. As conditions have changed, why not meet those conditions and allow us the privilege of driving into the valley? You won't find one automobile man in a hundred that wants to go back over the same road.

The SECRETARY. You heard what I said. We don't want to argue the question.

Mr. NELSON. No; but you asked the question whether they considered this road a safe one. I am in a position to answer it is safe as it is at present, and especially if it should be traversed with a time schedule, as suggested by Mr. Hawkins, as I have been over the road.

The SECRETARY. Has anyone else got anything affirmative to contribute that has not been discussed? Perhaps, Col. Forsyth, you want to say something on that subject.

Col. FORSYTH. As I am probably the one that will enforce any automobile restrictive measures in case they come in under restriction, I am very much interested in it. I don't know anybody that likes riding in an automobile any more than I do. It is the ideal way of traveling. I have been told that the airship surpasses it, but the automobile is good enough for me; so that I have no personal grudge against the automobile. As an official of the Government, and a park official off and on for about 20 years, I have seen from personal experience and presence on the ground that the great majority of visitors to national parks have no idea but that some Government officer sat down at a desk, scratched his head, and wrote out park rules and regulations, and then he scratched his head again, and wrote another.

Now, the park rules and regulations did not grow up that way at all. They were evolved from experience. Some incident happened—some accident happened—some condition arose that made manifest the necessity of one of those rules and regulations; and that is the history of it. Now, I don't know that an automobile ever frightened any team of horses or mules in this park or any other park, but I do know that the bicycle and motor cycle have caused runaways with disastrous results; and if one frightened such teams the other would. It is one of my duties and one of my great responsibilities to see that every reasonable safeguard is thrown around the life and limbs of the public when they come to this park, and I have no desire or any other motive whatever than to see the automobile admitted to the rim of the valley and, perhaps with the experience that may result from that, permit them to cross the lower end of the valley and go from north to south and from south to north across it, provided it can be done without undue risk to those who

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travel either in the automobile or animal-drawn vehicles. Now, the whole matter it seems hinges on this one point, and it is a matter of opinion—what is the reasonable protection against such risk; and it seems to me that is a question for the engineers.

The SECRETARY. Maj. Cheney, have you anything to say on the engineering question here?

Maj. CHENEY. Well, hardly in an engineering way, Mr. Secretary. Engineers don't like to discuss engineering questions when they have not started in an engineering way. I have only made some little personal observations of the roads. I have been from the floor up to Inspiration Point, and last year I went out to Crane Flat over the Big Oak Flat Road. Not, however, looking at them from a point of view of their use by automobiles. The question was not in my mind at the time and so I have scarcely compiled anything of any material value from that source.

The SECRETARY. You have heard the suggestion here that we have a report of the engineer employed by the Los Angeles people who will prepare and furnish us a statement showing just what he thinks is necessary and we can check that and make our own estimates on it. I suppose, from what you say, you think it would be better to defer any statement with regard to that matter until you have made such examination and report?

Maj. CHENEY. Yes, sir.

The SECRETARY. Well, then, gentlemen, it looks as though the general principles were fairly well agreed—I wouldn't want to say it was unanimous—but I would state my own impression from it that the fundamental question here is an engineering question and it ought to be checked up from an engineering point of view. The engineer from Los Angeles seems to think we ought to spend $25,000 in one case, and he is prepared to make a written report as to just how that ought to be done.

Mr. HAWKINS. May I answer that, sir? There is a considerable delegation here from Los Angeles. I live in San Francisco. I have no criticism of their enthusiasm and their progressiveness. I just want to point out to you that by their method they can come by the northern route, the Big Oak Flat Road, only 24 miles over a great State highway farther than the southern route, but if we from San Francisco must come the southern route to the valley that is a hundred miles farther than the northern route, thereby removing this magnificent park 100 miles farther from San Francisco and very much nearer Los Angeles.

The SECRETARY. The gentlemen would just see that much more of the scenic beauty of this wonderful State, and that extra hundred miles would be traversed in machines now in so short a space of time under the excellent road system you have it would really be a pleasure.

We will now adjourn until 3 o'clock this afternoon.

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AFTERNOON SESSION, OCTOBER 15.

The SECRETARY. I think, perhaps, this would be an appropriate time to hear from Mr. Watrous, the secretary of the American Civic Association, who has some matters which we would like to have him present.

Mr. WATROUS. Mr. Secretary, ladies, and gentlemen, one might hesitate to talk before any audience that has listened as we have listened to the eloquence of one who knows the Yosemite as Mr. John Muir knows it. But it happens to fall to me to take that hesitating step. Just to be here in the Yosemite makes one wish either for the gift of eloquence that he might voice his impressions, or for the opportunity to retire to the fastnesses Mr. Muir has spoken of to contemplate in silence the beauty and glory of our surroundings. Most of us will leave the Yosemite without indulging in either eloquence or extended contemplation. I surely shall not attempt eloquence, but simply rise to tell you that it is a very great pleasure to be here this year and to represent the American Civic Association, as last year the same association was represented at Yellowstone Park by our president, Mr. McFarland, to whom our good Secretary made such a pleasant reference yesterday.

I presume I have traveled as great a distance to attend this conference as any of my confrères excepting those officially connected with the Government, who also have come from Washington. I am here because the association which it is my pleasure to represent and serve has always taken a very deep interest in the general subject of the preservation of landscape and the development of outdoor art, and especially in our national parks and monuments, which, by wise fortune, have been secured and set aside by legislation for the people of this country and for the people of the world. We are to be congratulated that we are blessed with these parks; that they may be passed down as a priceless heritage to those who come after us this beautiful park in which Mr. Muir has spent so many years. Not only this park, but the Yellowstone, the Mount Rainier, the Glacier, and others, including the monuments. But we are not administering these parks as their worth demands. We are going along the route of least resistance and leaving undone many things that should be done.

If I may indulge in a little vision, it would be that within a very few years there may be other national park conferences, presided over by a Secretary of the Interior—and I could wish that it might be yourself, Mr. Secretary—but with one acting as secretary of the conference who is not a chief clerk of the Department of the Interior but a director of a national parks service, with all the dignity that might go with such a title, and backed by the authority that might be conferred upon him by Congress. In this connection may I pay a tribute—and I think the Secretary will permit me to pay it—to our chief clerk, who to-day is handling a great variety of details that pass through his office? I am

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not violating any confidence when I say that of all those details he loves best the ones relating to our national parks. Those are the details to which he gives his attention in his hours at home in the evening and after hours at the office in the daytime, for we must remember that the parks under the present arrangement have to receive but such passing attention as can be given them from day to day after a multiplicity of other details are cared for. Patents are issued and expire by limitation; pensions are put on the roll and expire with the sweep of the scythe of time; but the parks are to endure through all time, and we must see to it that they do endure in just as near their pristine beauty as possible, without encroachments of any kind. They must be preserved in their natural beauty. But we must be very practical in their administration.

As I said before, we have been doing things in a hit-and-miss way. There has been no uniformity of legislation. The parks, as you know, are created under a great variety of acts. It is hard to find out just what act creates this park and that park; and the same is true of the monuments. We must have a uniformity of administration for the sake of the larger results we are to get, for the development and maintenance of the parks, and for the sake of efficiency. This subject of efficiency is one that is being brought out very prominently before business men and very prominently before the people of this country, because in the present administration more attention is being given and will be given to the general subject of economy and efficiency than ever before.

Most of you are familiar with the initial steps that have been taken in the creation of a national park service. The American Civic Association, more than two years ago, started out with the idea that there should be such a service. It has been working to that end, and last year in Washington, there was held a most notable meeting in connection with the annual convention of our association, devoted entirely to the subject of national parks. It was attended by many of the people of the East who are some day to go West and visit the national parks. Among those who addressed that meeting were the President of the United States, the Secretary of the Interior, who is our presiding officer to-day, as he was our presiding officer that night; the president of the American Civic Association, Mr. J. Horace McFarland, and in addition there were stories of park life by Mr. Enos Mills, and an illustrated description of some of the parks, by Mr. Herbert W. Gleason, all familiar names to you. As a result of that meeting, attention was directed to the subject of our parks by the newspaper press and the magazine press.

I am not going to tell you just how much letter writing was necessary to get the approval of some of the great monthly and weekly journals, except to say the approval was secured, and if you have read the magazines and the weeklies as well as the dailies, you know that they have been talking national parks in their editorials and in their news columns and

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that they have been using pictures given them by the Department of the Interior to illustrate those editorials and news items. There is going to be a great deal more of that same kind of work. There were reasons during the early sessions of this Congress for not making a direct effort for the passage of the bureau bill which was introduced in the early days of the session. We believe, however, the time will be ripe when Congress reassembles to urge the passage of that bill, providing for the creation of a national park service. It can be passed if the people of this country will make themselves heard. I am very glad to appear to-day, by courtesy of the Secretary, as a representative of the association which has the machinery in Washington through which you can work to bring about the passage of this bill. We want your cooperation, you men of the West and of the Central States, and of the East. We need it and request it, and we want you to be quick to respond to a call that may come to you some day to direct letters and telegrams to your Members in Congress, stating that it is your desire and urgent request that they vote for the passage of the park-service bill. Our association fills the necessary function of a propaganda agency.

You know as well as I that the Department of the Interior can not be a propaganda agency. Its officers, of course, want this bureau. They realize better than we the folly of giving such meager attention and in such an unsystematic way to such a large proposition as the control of hundreds of thousands of acres of park lands. Surely, the parks have gotten beyond the day when they can receive but the passing attention of a chief clerk. They need the dignified attention of a director who may surround himself with just the kind of experts Mr. Muir has recommended—landscape architects and engineering authorities—who can solve the problems we have discussed this morning. Such a bureau can bring about order and system, and can secure for the parks the appropriations that are necessary.

The association will have another meeting at Washington on November 19, 20, and 21, when again one or two sessions will be devoted exclusively to the subject of the national parks. I wish all of you might be transported to that meeting to take part in and lend your enthusiasm to it. We are not asking legislation for the benefit of any one class of business, for any one railroad or all the railroads put together, or for any concessioners. We are interested in working for the creation and the proper maintenance of the great recreation and playgrounds of all the people. We believe that many of our people in the East are making a serious mistake when they close their eyes to the beauties of the West and set their eyes toward the beauties of the European and Asiatic countries. They will some day of course, go to Europe, but they must not confine their travel in that direction. They must be turned this way, and of course, if turned this way, it is going to be a material gain to the Pacific coast, which is a proper benefit.

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I wish that the president of the association might have been here to talk to you as he did last year. He wanted greatly to come and asked me to convey his particular greetings to you. He is backed by our officers and thousands of members in the East and in the West who are as zealous as he for the complete development and further dignifying of our national parks.

Mr. Secretary, there was handed to me at noon to-day, and before I had time to submit it to you, a resolution which it is thought might be passed by this conference recommending the creation of such a bureau, and I submit it to you and ask if it be wise to read it and ask to have it passed.

Believing that the administration of the various national parks and monuments could be conducted with greater efficiency, that they would receive more and more favorable recognition by Congress for their development and maintenance and that there might be brought about a definite, systematic, and continuous policy for their administration: Be it

Resolved, That it is the sense of this conference that there should be created in the Department of the Interior a separate bureau for the conduct of all business pertaining to the national parks and monuments of our country, to be known as the national park service.

The SECRETARY. You have heard the proposed resolution. I think this can be included in the record. Has anyone present any objection to the principle or sentiment expressed in the resolution? If so, we would be glad to have our attention called to the matter and the grounds or reasons for their difference of opinion.

There seems to be no such difference of opinion. If there is none, we have the necessary information.

Now, the next subject that we have before us is the question of the private holdings in the national parks.

Mr. STEEL. Mr. Secretary, before you proceed to that, can I say a word on the question just touched on?

The SECRETARY. Proceed.

Mr. STEEL. Mr. Secretary, the question, I believe, on which we are more united than on any other, is that of the creation of a national park bureau. That was discussed a year ago and I had the privilege of attending the American Civic Association meeting in Washington last year and know the results there. I know the enormous influence it has. It is a very strong factor in working upon the Members of Congress, but an idea has occurred to me that it is possible we might also assist this work very materially. The idea occurred to me last evening, in its crude form, that there might be an organization here for the purpose of getting the Members of Congress from the national park States together. Immediately after that, however, it occurred to me that this is totally impracticable for the reason that it would not do for superintendents of parks to have anything to do with such an organization, and it further occurred to me it would be totally unwise for any concessioner to be

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identified with any such movement for the reason it would be used against the organization of a national park bureau and prove a detriment. This work might be taken up without any organization by having some one interested take up the work of enlisting the commercial organizations of the national park States, and through them reaching every Member of Congress from a national park State. In that way I think we can carry it through.

Mr. MARTIN. If I am permitted to say anything in response to your inquiry as to differing opinions on the question of the resolution, since Mr. Steel has made this suggestion, if you will permit, I would like to say just a word to you of the strongest indorsement of the plan that Mr. Steel has suggested. When I received an invitation to attend this conference I was gratified, because I felt that I had accumulated in the year and a half of my residence in the West a great deal of valuable information to which the department was properly entitled. Coming here and hearing these matters so thoroughly discussed, gradually my ideas of the importance of my convictions have vanished into thin air. The ideas that I had felt have been formed better by others and expressed more forcibly than I could express them. Mr. Steel suggests a line that I think admirable, and I would say in that connection that the Northwest has joined in a hand-in-hand organization that relates to work for the Mount Rainier National Park, and it seems to me that the spirit and purpose of that organization can properly be extended, and I was mighty glad to find the American Civic Association had taken up this work, and I have the pleasure to-day of joining, for the organizations that I represent, that association, and pledging to its representative here our strongest affiliation and effort that we can put behind his work. I don't know, Mr. Steel, just how this can be brought about, but the organizations of the Northwest, recognizing as we do the tremendous use that lies in these national parks, will be glad to join in that plan and give it all the force that time and money can put behind it.

The SECRETARY. Now we will take up this question of the private holdings in the parks. I think perhaps, Mr. Curtin, we might as well take your matter first—the immediate matter here in hand. Will you please tell us briefly and in a general way what the proposition is, and we will take up anything on the map.

Mr. CURTIN. The question I am interested in personally, as well as one or two of my immediate friends, is the elimination of patented land out of the park, along the north boundary.

The SECRETARY. It seems unfortunate that there is no way of extinguishing them by purchase.

Mr. CURTIN. That is a legal impossibility. Not being able to do that legally, then those who are in the park—holding lands in the park that are bought, paid for, and patented—either ought to have those lands

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removed from within the park or else be permitted to enjoy them. They ought to be given a fair deal—a square deal. They should let us get out of the park or those of us in the park should be permitted to use what belongs to us.

That is a thing we have not had the enjoyment of for a long time. This park, when created, contained 1,512 square miles of territory. It contained many thousands of acres of patented land, principally on the north and west borders, patented in most instances as timber claims—some homesteads and preemptions, but the large portion was timberland. The park was created the 1st day of October, 1890, and all the balance of the land was set apart from sale or disposition. Acts were subsequently formulated for the management of this park. From 1890 down to about 1903, somewhere along in there, there was no change in the boundary. Since that time there has been three changes in the boundary by act of Congress. One on the north included some more area, while the other two excluded some and took in some, and the result of the last great change which eliminated a large portion of the patented land was the work of a commission appointed by Congress, which I may say I was instrumental in effecting. That commission recommended certain changes and it eliminated very largely the patented lands, but there still remains quite a large body of patented land which it is proposed now, by a bill pending in Congress, to eliminate.

I take it from those who were on the commission whom I have had the good fortune to know, that there was one particular purpose in putting the boundary in that position, and that was to preserve to the Department of the Interior jurisdiction over two groves of big trees, one the Merced Grove on the Coulterville Road, and the other the Tuolumne Grove of Big Trees, and it was desired on the part of the commission to retain jurisdiction over those big trees. Portions of those trees are on patented ground—most of them on vacant ground, but all surrounding them is patented ground. The patent has gone from the Government. The proposed bill now pending to change that boundary still retains that jurisdiction in the office of the Secretary of the Interior, just the same as it is to-day by providing that that particular tract, namely, the SE. ¼ SE. ¼ sec. 23, and NE. ¼ NE. ¼ sec. 8, already in the Tuolumne Grove of Big Trees, be retained jurisdiction over. Now, that commission made that report and still carrying that object in view there should be no objection to the elimination of the balance of the private holdings.

I want to say, Mr. Secretary, that last summer considerable trouble arose between the men owning the land who endeavored to use them. I know I tried honestly to comply with the rules in that matter. At a meeting of the stockmen's association the plan was discussed as to whether or not the Forest Service would not take it in its boundaries, since there is a rule that when stock granted permission by the Forest Service shall trespass on this land the permit will be canceled. In the

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discussion the question came up of seeing if we could not get some relief and eliminate those private holdings. Therefore the lines proposed by the original bill as introduced in Congress by Congressman Raker was the result of a conference with the Forest Service in the city of Sonora. When the bill was introduced in Congress the matter was discussed by myself in all its phases before the Public Land Committee and referred to the office of the Secretary of the Interior. Now, I think that bill ought to receive favorable consideration and ought to be passed for the reason that there is no way legally under the Constitution of the United States to ever acquire that patented land. Aside from the legal obstacle, which is insurmountable, we have waited patiently for 22 years—since 1890—for the relief we are entitled to, to either be permitted the use of our land or that it be purchased. No man, not even the Government, can divide my land in half.

The SECRETARY. Well, Mr. Curtin, this matter has been examined by Col. Forsyth and I understand reported favorably.

Col. FORSYTH. The report was not unconditionally favorable. It is a matter of record. I haven't anything to add to it or have my views changed on the subject. Under certain conditions, as a last resort, in case in no other way could these lands be eliminated, I am in favor of changing the boundary line.

The SECRETARY. What do you think—that it would be desirable to retain these lands in the park if they could be purchased and Congress would be willing to purchase them?

Col. FORSYTH. Oh, certainly; the present boundary line should not be changed if any other way appears.

The SECRETARY. What particular advantage would it be to the park to include this land Mr. Curtin has described?

Col. FORSYTH. The park boundary lines on the west side run in general terms just outside of two roads, the Big Oak Flat Road on the north side and the Wawona Road on the south. They follow in general very close to the western boundary from north to south. It is extremely desirable for protective purposes of the park that those roads remain on the inside of the boundary.

The SECRETARY. That is only for the purpose of retaining jurisdiction over them?

Col. FORSYTH. Exactly.

The SECRETARY. If that could be done in any other way is there any other reason why we should want to keep this particular property within the park limits?

Col. FORSYTH. That is the principal reason. But if those roads were thrown outside the park by change of boundary lines there we have a road running north and south right close to the boundary line which makes the park accessible for a hundred miles. Should anyone want to step off the road a few miles, they are inside the park. It is a menace.

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It is a menace principally from fire. All people driving along the road—men are great smokers, they light their pipe and throw down a match. If the road is on the inside of the park, it is patrolled constantly by our men. Our theory of fire protection is that prevention is better than cure. We work much harder to catch a fire when it is small and put it out than after it has a good start. Now, I am opposed in every way possible to any further change in the park boundary lines in the way of diminution if it can possibly be avoided. I have urged in every annual report and every time when it could be brought up for discussion appropriately the extinguishment of foreign title to lands or anything else inside the park. You have two opposing elements right off that shouldn't exist, so that any way to acquire these lands without changing the park boundary line will solve a very vexatious problem.

The SECRETARY. What are they valued at, Mr. Curtin?

Mr. CURTIN. They run up into the millions.

The SECRETARY. On account of timber?

Mr. CURTIN. Yes, sir; and on account of the association of business enterprise. Now, Mr. Secretary, I have many thousands of acres in the lower part of the country. You destroy the value of this and you take that with it.

The SECRETARY. How is that?

Mr. CURTIN. The summer range is one and the winter range is the other. They are a common investment for one common purpose. You destroy one interest or the other; they go together. You will reach up into the millions. I am really afraid to compute the amount of money they represent. I concur with what Col. Forsyth has said. We have waited 22 years for that relief, but it is legally impossible owing to the constitution. Then we ought to get relief that can be given.

The SECRETARY. Have you considered the question of exchanging those lands for other holdings within the national forest outside the park?

Mr. CURTIN. Yes, sir; I have. But there isn't anything in the national forest that you could offer me for those lands.

The SECRETARY. Is that because of personal association?

Mr. CURTIN. Because of the intrinsic value to me. The ranges are all taken—all gone. Now, what are you going to do? I have a good many thousands of dollars invested in that business, and I await the suggestion. For me to exchange would simply mean for me to give up my home and depart from that part of the country, because the valuable lands are not there.

The SECRETARY. Are there not other lands that would be valuable for pasturage up there?

Mr. CURTIN. Yes, sir; but those ranges are all taken by men who entered the land surrounding it. That that has any value has been taken long ago.

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The SECRETARY. You don't think that by making up in acreage what is lacking in quality?

Mr. CURTIN. The man who has invested his money in timberland is not interested in pasture. The man has picked it out on account of its value and left what the Government owns because he don't want it.

The SECRETARY. You mean all the valuable timberland as well as the valuable pasture has been picked?

Mr. CURTIN. At that time they got the cream.

The SECRETARY. Therefore, at this time it would be necessary to offer 2 acres for 1. It would have to be of equal value, whether large or small. Would you think it a fair proposition to make up an acreage in the national forest, whether it was twice as much or 10 times as much, that could be exchanged for the land you speak about?

Mr. CURTIN. No, sir.

The SECRETARY. Why not?

Mr. CURTIN. Because I know the whole country in there, and the Government has not got it.

The SECRETARY. Would you not be willing to exchange your holdings for all the rest of the national forest up there if we said we would give you the whole national forest for your holdings?

Mr. CURTIN. The whole national forest is so large I would be unable to take care of it. It would be more trouble than I have got now.

The SECRETARY. I suppose that taking care of these lands is a matter of dollars and cents.

Mr. CURTIN. It is also business to look for land you don't have to take care of yourself.

The SECRETARY. I don't know what you mean. I am saying to you, suppose we give you an amount of acreage of land in a national forest outside of the national park, be that acreage large or small, and give you property of equivalent value to that which you hold in the park?

Mr. CURTIN. First name the place.

The SECRETARY. I just want to get the principle. If we can find the place which, upon fair consideration, is of equal value, would you exchange?

Mr. CURTIN. I am always open to a good bargain, but it has got to be a good one.

The SECRETARY. I think, in view of Maj. Forsyth's report and what you said, the reason you are pushing the bill is because no other reasonable project has been suggested. I am seriously speaking of that because it is being done elsewhere. We are adjusting holdings in national forests and I hope some in national parks. Where private holdings have occurred within a park area, we are trying to arrange for an exchange.

For instance, a man owns 160 acres, taken up as a homestead, as you say. Now, a little later we have created a national park there. Now, we say to this man, "here, we have difficulty in getting Congress to give

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us cash to buy you out, but we have a considerable amount of land outside of the park but in the national forest, and if we can find a piece of the national forest conveniently located so it can be segregated from the national forest without interfering with its administration, but still of equal value to what you have, we will give you another 160 or 320 acres, which is equivalent in actual value to what you have inside, will you take it?" And he says, "yes"; and we are now exchanging our holdings in national forests in the State of Montana. I mean that private lands in national forests we are exchanging for other public lands in national forests, so as to give the State its group of lands together and give the forest its group of lands together, and I don't know why the same principle might not apply to this if the land is available.

Mr. CURTIN. But the great and enormous value from the timberland makes it impracticable. Then the long and patient waiting—22 years we have waited—if there be no immediate relief afforded, where is the harm coming to the Government by the change of the boundary? When you want police patrol of the road the laws of the State give it. The code affords free use of the roads for military purposes.

The SECRETARY. There may be some difficulty about patroling the roads outside the park being called military service. At all events I think I understand the problem. I appreciate the need of prompt action. This is the first time it has been called to my attention.

Mr. CURTIN. I should like to show you on the map.

The SECRETARY. Col. Forsyth, as I understand it, there are two objections that you have to the bill. First, that you think that all practicable measures to acquire this property by the Government should be first exhausted; and, second, that you are opposed on general principles to any change in the park boundary which eliminates any ground. You want to keep all the area in the park.

Col. FORSYTH. Yes, sir.

The SECRETARY. Well, of course, that second proposition means you want to keep in the park property we don't own if the first proposition is disposed of and no means supplied to buy it.

Col. FORSYTH. I am opposed to any reduction in area of the park if it can possibly be avoided. At the same time I am opposed to retaining in the park any land or anything else in private ownership. I mean by that toll roads.

The SECRETARY. You mean we should do one of two things; either buy the private property or change the park boundaries so as to eliminate it.

Col. FORSYTH. Exactly. I say, as a last resort, in order to get rid of the private land in the park, then I am in favor of changing the park boundary, but only in that case and to that extent.

The SECRETARY. And the real reason, the only real reason, for keeping this property in the park is the more effective control which you think

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you would have over these roads if the park boundaries remain as they are. There is in addition to that the general reason that we don't want to reduce the park area.

Col. FORSYTH. Yes, sir; that is, of course, a sentimental reason. The practical—the best reason for running the park boundary on the west side was, in addition to retaining the Tuolumne and Merced Big Tree Groves in the park, the additional one of retaining those roads in the park in order that the troops patrolling the park would patrol these roads. If the roads are thrown out the troops remain on the inside of the park to protect it. They can not go on the outside.

The SECRETARY. I am not perfectly clear about that. They may not patrol those roads outside of the park; it might be that we might be able to clear that question up and see if we could not get some joint action as between the State of California and the Federal Government. We might clear it up effectively.

Col. FORSYTH. That simply takes away one of the reasons for changing the boundary.

The SECRETARY. There are no special scenic features or anything of that sort?

Col. FORSYTH. Not specially, in addition to the sentimental reason. We have changed the park boundary lines two or three times in 10 years. We want to reach an end some time.

The SECRETARY. We are going to try to do so.

Col. FORSYTH. My views are in that report. There are reasons for leaving that road inside the park boundary line. Then there wouldn't be any question of jurisdiction between the State of California and the United States or the cooperation of the two Governments in dealing with those roads in view of fire protection. The great enemy of this park and all our national parks now is fire, and the most efficient fire protection I know is efficiency in patrolling—the prevention of fire, rather than putting the fire out after it starts. The simplicity of the patrol work is to have roads and patrol them; that is, under one control. If they are outside we don't have such a control. Before making that report on this subject of the change of the boundary lines—Mr. Secretary will probably remember that it was a long time before he got my report after it was called for—that matter was pondered very deeply, and I haven't anything to add to it or modify or change in that report. Those are still my views.

The SECRETARY. Mr. Marshall, you made an examination of this matter—are familiar with it—have you any views to express?

Mr. MARSHALL. The bill was sent to the Geological Survey, as I had previously made a topographical map of the country, and I agreed with Maj. Forsyth in everything except that they should be eliminated if there was no other way, because I could not give up the thought that that

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magnificent area of about 50,000 acres of land, of which about 5,000 acres was private property, should not be excluded.

The SECRETARY. As I understand, there has been a great reduction in area. How large a total area is now proposed to be eliminated?

Mr. MARSHALL. The greatest width at any one place is only 2½ miles, and several places it touches the boundary of the park. It is a very small area; about 20 sections of land.

The SECRETARY. Including the private holdings?

Mr. MARSHALL. I don't know, Mr. Secretary. I am in somewhat the same position as Maj. Forsyth. My report is in the department, and I can't see any reason for a change. I might say, however, that when the commission was appointed by Mr. Hitchcock we went into that thing as thoroughly as I believe anybody could. We knew we couldn't satisfy everyone. We left those roads in there for toll purposes and fire protection.

The SECRETARY. Those roads are privately owned roads?

Mr. MARSHALL. Yes, sir; but we can't construct a road to those portions without going to a great deal of expense, without having that much land on both sides of that little panhandle.

The SECRETARY. Well, were we to construct new roads to the Big Trees in addition to those that are now there?

Mr. MARSHALL. We recommended that the private title to lands in the park should be settled in some way.

The SECRETARY. That is, you recommended that it be acquired in some way?

Mr. MARSHALL. Yes, sir.

The SECRETARY. Suppose Congress definitely says we will not buy it and we will not exchange it?

Mr. MARSHALL. I should think your suggestion for the exchange of the land ought to be satisfactory. I don't know if there is any land available.

The SECRETARY. But, supposing we can not acquire the title to this property because Congress will not give us the money to buy with and there isn't any land to exchange, is there anything to do but to eliminate this? I mean, can we go on permanently with this property inside and with the difficulties which arise?

Mr. MARSHALL. I think not.

The SECRETARY. That is the condition, is it, Colonel?

Col. FORSYTH. Yes, sir; the condition is growing intolerable.

Mr. BOND. In connection with clearing the title of these tracts of lands, I don't think anything ought to be done in this matter toward eliminating Mr. Curtin's area in there unless we can include with them all these other areas which are scattered all around throughout one-half of this large park; and whenever you undertake to eliminate any range you have got to eliminate these holdings. I think there is just as much

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necessity to eliminate these holdings scattered out through the park as those in a position where they can be commercially utilized at the present time.

The SECRETARY. That is not quite true; it is all right as a general principle. There is a difference between a tract of land which runs a little way within the park boundaries and a tract which there is absolutely no way to eliminate.

Mr. BOND. We are going to continue to have private holdings within the park, which will be a nuisance for all times. We want to get rid of all of them.

The SECRETARY. I quite agree with you.

Mr. CURTIN. On that one suggestion that we should use every effort to get Congress to appropriate the money, let me again remind you of our 22 years of patient waiting, and that the Constitution of the United States squarely settles that question.

The SECRETARY. We will meet that legal question when we come to it, as we have met it in the Reclamation Service. Congress can do in a proprietary way what it can not do in a governmental way. We can do a great deal with the proceeds of pubic lands and with moneys received from other sources than taxation. We will not attempt to settle that constitutional question this afternoon.

Mr. CURTIN. I have patiently waited with the other owners of these park lands for the recognition of our rights. We can fence our lands and use it. I don't want to do that. I don't want to string a fence around my land and ——

The SECRETARY. We will have to face that issue when we come to it. It is true that you have waited patiently and impatiently, but with a great deal of patience during the past twenty-odd years, and it is true that Congress ought to right it. It is also true that that long waiting without any action is apt to bring the conviction that it is going to be very difficult to get Congress to take any step, but we all realize this, that the national parks occupy a very different position now than they ever did before. We have reached the stage when an agitation for a national park bureau is seriously considered; when bills are introduced in Congress and advocated by prominent and influential members of the two Houses. Under those circumstances I think it is not quite time to give up hope that we can get Congress to face this in a business like way, realizing that you ought to be dealt with and dealt with justly, and that they ought to proceed in a rational and just way. Therefore, it may be that we ought at least to make one more try and see what we can do and consider this question of exchange carefully, and at the same time consider the merits of your proposition so we can make a definite recommendation on the other alternative if that is the one we should accept. I assure you we will give it immediate attention. I have asked Mr. Ucker to call it to my attention immediately I get back to Washington,

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and when Congress convenes in December, as it will, we will immediately take steps to get it before them.

Mr. CURTIN. And as to the restriction as to the use of these lands in the meantime——

The SECRETARY. What restriction is that?

Mr. CURTIN. With regard to the cattle on our patented land. If they stray over the lines they are run away down one side of a mountain and up another——

The SECRETARY. Would you be willing to herd your cattle there?

Mr. CURTIN. We are doing it all the time, but when they stray off our land they are run off. I think the colonel is only carrying out his orders. It is the rules I complain of.

The SECRETARY. That is the rule governing fencing?

Mr. CURTIN. Yes, sir.

The SECRETARY. What do you say, Colonel, in regard to the proposition of having the cattle herded there and waiving the strict enforcement of the rules——

Col. FORSYTH. That is impracticable.

The SECRETARY. How do you mean?

Col. FORSYTH. We don't know where the lines are.

The SECRETARY. Is there no way of marking them?

Col. FORSYTH. They would have to be marked; the soldiers up there wouldn't know. That is an expensive way. The soldiers there don't know where the dividing lines are between private and public lands.

The SECRETARY. Couldn't that be accomplished by the blazing of trees, so that they would know if the cattle happened to be one side of that line, and thus get a practically reasonable enforcement of the rule regarding grazing—by the blazing of trees showing the boundary line?

Col. FORSYTH. I don't think so.

The SECRETARY. As the thing now stands you think we have got to enforce the rule that Mr. Curtin can not pasture any cattle on his holdings up there unless they are inclosed?

Col. FORSYTH. Yes, sir.

The SECRETARY. Suppose he does inclose. How does that affect the park on the question of access to that part?

Col. FORSYTH. It will not interfere with traveling about through that country.

The SECRETARY. You think the administrative difficulties are such that we ought to make him go to the expense of fencing that land before he can put his cattle on?

Col. FORSYTH. I think as conditions are it is the only practical way. The soldiers do not know that this side is park land and this side Curtin land; blazing is not sufficient mark.

The SECRETARY. But why is it necessary to erect it at once? Is the situation up there so acute? Why can't there be a reasonable adjust-

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ment of conditions up there under which we get a substantial compliance with rules?

Col. FORSYTH. We can't change them at the pleasure of one man or another. You have got to give a positive order—one thing or another.

The SECRETARY. But can't you give them an order that if the cattle are outside the land they are to examine the blazed trees, and if they ascertain that they are surely outside the land, then they can take them up—not otherwise? Why can't you put the proposition to the soldier so he can't arrest the cattle unless they are outside the inclosure?

Col. FORSYTH. If the lines or bounds are marked so that the soldiers know which side is private——

The SECRETARY. I say, suppose we blaze those trees up there in a way that is practical—use that kind of marking which is practical, and only that, and then we say to Mr. Curtin, go ahead and herd your cattle up there, and you can say to the soldier if you have reason to believe Mr. Curtin's cattle are outside that line, if you find you are sure they are outside of his land, arrest. Isn't that a practical rule?

Col. FORSYTH. No, sir.

The SECRETARY. Why not?

Col. FORSYTH. There is nothing to herd the cattle on one side or the other.

The SECRETARY. Except Mr. Curtin knowing he will have to herd them so they don't get outside.

Col. FORSYTH. If the soldiers up there are to go and notify Mr. Curtin or his herdsman whenever the cattle have wandered over the line of blazes, that the cattle are outside, why, the soldiers are doing nothing but looking after Mr. Curtin's cattle.

The SECRETARY. If Mr. Curtin don't keep them far enough away after his attention is called to it we will take them up, but I am sure Mr. Curtin will herd those cattle so they are kept with reasonable safety.

Mr. CURTIN. Now, just on that very point—this summer the soldiers patrolling that park drove some cattle off—I say it was on patented land, and they drove those cattle right past my door, right within a few feet of where they could find my man, and they carried them on past my place, and the colonel notified me it is not permissible to tell those men so they could put those cattle in.

The SECRETARY. The rule doesn't give him any discretion. The rule says you have got to fence your land. I can understand very readily how you have had just such experiences as that with the rule reading as it does. Now, the question is whether we can modify the rule, so that you herd your cattle so as to keep them away from the boundary, and we will give you such notice as is reasonable.

Mr. CURTIN. I own that land that runs up to the boundary, and I own on the inside of the boundary, and the Government of the United States charges me pasture on that land, which is vacant, and I say with all due

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respect I am entitled to go over the land, and I yield a property right that is valuable to me because such is the rule. The colonel has to enforce the rule which is given to him, but I have a quarrel with the source from which that rule comes.

The SECRETARY. This is a peculiar condition. I want to find out if a reasonable modification can be made which, in the first place, you are going to take care of on your side, and which, in the second place, is going to enable the colonel to carry out the substantial purpose of the rule and prevent your cattle straying.

Col. FORSYTH. Another reason why this blazed boundary is impracticable: Mr. Curtin's cattle are not kept off the park land by his fence. If they can't be kept off the park land by a fence, how can they do it with an imaginary line?

The SECRETARY. They can't unless they are herded. I understand Mr. Curtin is willing to herd his cattle.

Col. FORSYTH. He is herding them now. When I have had a bunch of cattle driven 40 or 50 miles down that way, it was because my patience and forbearance were worn out.

Mr. CURTIN. Is there an instance that they didn't put them in when you notified them?

The SECRETARY. You are willing to go there with the representative of the park and mark the boundaries of your land as well as it can be done?

Mr. CURTIN. Yes, sir.

The SECRETARY. I can see that there has been a lot of trouble on both sides. I think if there was approximately as large a number of notices as the colonel states, I can understand why he got out of patience. On the other hand, if the rule has been enforecd with the rigidity it seems to havehad I can realize the position you have been in. Suppose, however, that in the meantime the Secretary of the Interior should provide that a certain line fixed by natural boundaries or features shall be the line within which the cattle must be kept.

Col. FORSYTH. I will consider that.

The SECRETARY. Suppose you look into that.

Col. FORSYTH. I would suggest that Mr. Curtin give me a letter giving in detail——

Mr. CURTIN. I will most cheerfully do it.

The SECRETARY. Write him and tell him in detail where such a line could probably be drawn. He may look at it. He may suggest some modifications and send it all down to me and I will look at it.

Mr. CURTIN. I might say in conclusion I am going to insist upon the passage of that bill.

The SECRETARY. You have a right to urge the passage of a bill, certainly.

Mr. CURTIN. I didn't want to be misunderstood.

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Mr. ARANT. There are some patented lands included in the Crater Lake National Park, but we are not in any squabble or trouble with anyone concerning it, and I will leave it with your honor to state whether I should discuss that or not.

The SECRETARY. There isn't anyone representing the other side here?

Mr. ARANT. No, sir. I think the best way to present that would be to present it in the form of a communication. I have repeatedly reported the facts and have recommended that title to that land be extinguished or acquired by the Government by purchase.

The SECRETARY. Have you any acute situation of the character we have here?

Mr. ARANT. No, sir.

The SECRETARY. All you are urging is the general policy?

Mr. ARANT. That is all. The land is almost entirely timbered land.

The SECRETARY. We have that question in a great many parks, and I think we understand generally the general principles. I don't think it is necessary to discuss that feature. There was a question in regard to the Sequoia Park that some people are interested in. Are they still here? They not being here, we will take that matter up in the morning. We will have a session in the morning at half past 9 and not have one this evening. We will, then, adjourn until that hour.

MORNING SESSION, OCTOBER 16.

The SECRETARY. Gentlemen, you will please come to order. Now, I think we may as well this morning continue with the matter which we had under discussion last night when we adjourned, but before doing that, perhaps we ought to get into the record the fact that after we adjourned yesterday afternoon, one of those very safe roads that would only take 30 cents to put in shape, spilled a coach over the side and came near hurting seriously a number of people who fortunately escaped, but left the coach in a completely wrecked condition at the bottom of the gulch. Is that correct, Colonel?

Col. FORSYTH. That is correct, sir. They tell me there was scarcely enough left of the coach to repair.

The SECRETARY. How many people were on it and what happened to them; do you know?

Col. FORSYTH. All the passengers were well shaken up. Fortunately the coach turned over at a place where, with one exception, a slight jar was all that was received. One of the gentlemen was pretty badly hurt but no bones were broken, and the whole party were taken into their automobile, which was waiting them at the boundary and which we allowed to come up that half mile to get them and take them on out. The party had come by motor car from Crockers and from there had staged in and were returning to Crockers by stage and had almost returned when the accident happened. I might add that the grade of that hill is from 12 to 17 per cent.

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The SECRETARY. I believe last year as our party returned from the Hetch Hetchy I called your attention to the condition of the road and the very effective barrier it was to the development of the upper part of this park.

Col. FORSYTH. That is the location exactly.

Mr. FRY. Mr. Secretary, may I have the privilege of asking the Colonel what was the cause of the accident?

Col. FORSYTH. The party left so hurriedly that the sergeant did not make any investigation of the cause. The road there is narrow. It was growing dark and whether something unusual caused the horses to shy from the narrow road and go over is a matter of speculation. It is doubtful if the driver knows what caused the horses to shy away.

The SECRETARY. All we know is that the coach went over—don't know the cause at all.

Col. FORSYTH. Not positively; it is a matter of speculation.

The SECRETARY. It merely adds a little emphasis to the engineering questions that are involved in this whole matter of the admission of automobiles and illustrates the absolute necessity of checking things a little more accurately than apparently some of our speakers yesterday were disposed to think. I doubt whether we can accept general engineering views of the character we were offered yesterday as a substitute for exact information on the question of the width and condition of roads in connection with this automobile matter.

Col. FORSYTH. Mr. Secretary, there is one remark I would like to add in this connection, and that is that a mere semblance of a barrier at a dangerous point is not sufficient. The barrier must be one sufficiently substantial that if a coach or a car caroms against it it will withstand the shock. One speaker, yesterday, stated that something that would indicate that the coach couldn't go over there would be sufficient to prevent it.

Mr. MCSTAY. Mr. Secretary, as long as these matters are being made an official record I believe it will be well, if you will pardon me, to mention what road that was. My attention was called to the fact that during this discussion it was not mentioned what road that occurred on.

Col. FORSYTH. That was at the crest of the mountain on the Big Oak Flat Road at the upper end of the Tuolumne Big Tree Grove.

The SECRETARY. Well, of course, as I see it, it doesn't really matter what was the particular location or what particular road. The circumstance, happening at the time it did, simply serves to call our attention to the fact that you can not dispose of these matters in the offhand way which many of the gentlemen suggested yesterday. That "if" that has been put into this question all the while with regard to the admission of automobiles to this park, which ought to appear in capital letters, ought now to be put in double caps and black-faced, so we shall understand that we must pay a great deal of attention to the "if."

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Now, we have the matter of the Sequoia Park, and we might as well take it up right now.

Mr. McSTAY. The Automobile Club of Southern California wrote a letter to the Interior Department during the month of September, making application that the Sequoia National Park be opened to automobiles, and according to the information in the hands of the Automobile Club of Southern California, Capt. Whitman, who has just retired, I believe, as superintendent of that park, has reported on that matter. I also understand that the present superintendent, Mr. Fry, has likewise reported, and in order to save time any information that I can personally give you in order to set those facts before this conference and to the attention of the Secretary, I would be obliged to the Secretary if he would call on those who are familiar with the conditions—Capt. Whitman, for example, and later, Mr. Fry and others.

The SECRETARY. Captain, perhaps either you or Mr. Fry, whoever is most familiar, can give us a brief statement of just what is involved.

Capt. WHITMAN. On the sole point of entrance of automobiles?

The SECRETARY. No; I don't understand that that is the question alone, is it?

Mr. McSTAY. No; I think not. I think the general advisability is what you seek—the general advisability of opening that park to automobiles.

The SECRETARY. Yes; and in what way, if it can be done at all?

Capt. WHITMAN. This matter has already gone of record in my annual report, which is in your hands, having made the statement that I consider that the admission of automobiles to the Sequoia National Park is feasible and is one link in the chain of development. Parks will not be developed until the people go there and until they have hotel accommodations and good roads. This, in my opinion, is one of the prime factors in bringing that result about. Working it out on an engineering basis, Mr. Fry and I found that by the construction of 6 miles of road we could give automobiles a practically separate road into the park from the road used by the wagon; in that way eliminating all danger and providing a magnificent scenic route much more beautiful than the present wagon road and presenting no engineering difficulties that could not be overcome at an estimated cost of $40,000, which would give an excellent road and the grade of not over 8 per cent—7½ per cent—and I really believe that the automobile should be not only admitted, but encouraged to come in, because it brings with it the money that we want and the people we want, and in that way tends to develop the park, and in this respect it can be done with safety.

The SECRETARY. This 6 miles of road, where would it begin?

Capt. WHITMAN. At a point on the Middle Fork of the Kaweah River to which the electric-power company has extended the road for their own use in building an aqueduct in which they propose to run water.

The SECRETARY. What is the condition of that road?

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Capt. WHITMAN. That is a very good road as far as grade goes. It is dusty in places, but the grade is easy, and the road is in constant use by our own wagons, and on the hill above is the Giant Forest Road, which is still in existence and in good condition.

The SECRETARY. What is the width of that first road?

Capt. WHITMAN. It is wide enough for teams to pass, and, like all mountain roads, it has some places where it is very narrow, on account of the ledge of rock, which goes right down to the creek bed and has to be blasted through; but at other points there are many turnouts.

The SECRETARY. Are those sharp turns or narrow turns protected in any way?

Capt. WHITMAN. On the outside edge?

The SECRETARY. Yes, sir.

Capt. WHITMAN. No, sir; they are right following the creek bed. They are not very precipitous. This road is right along the creek all the way up.

The SECRETARY. Do you think we ought to admit automobiles without some provision for the further improvement or protection of the Whitney Power Road?

Capt. WHITMAN. Yes, sir; as far as that road goes, I think it can be used now by both automobiles and wagons. In fact, the Whitney Co. use their tremendous automobile trucks on the lower portion of that road now, where conditions are practically the same.

The SECRETARY. What about the other road?

Capt. WHITMAN. The other road is used by wagons and by everybody now. It is the only road into the Giant Forest in the Sequoia Park. It is about the center of the park, I suppose, and goes no farther. The proposition is to link those two at a point very near the terminus of the Giant Forest Road—not exactly at this end, but within a mile so.

The SECRETARY. That is to say, the 6 miles of road would connect those two roads?

Capt. WHITMAN. Yes, sir.

The SECRETARY. Are those roads toll roads?

Capt. WHITMAN. No, sir; they are both Government roads.

The SECRETARY. What title?

Capt. WHITMAN. They belong to the Government—Interior Department.

The SECRETARY. Both those roads?

Capt. WHITMAN. Everything inside the park concerning those two roads belongs to us.

The SECRETARY. What length of road in each case is under our jurisdiction?

Capt. WHITMAN. Twenty-one miles of the Giant Forest Road inside the park, all under our jurisdiction, and the other about 11.

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The SECRETARY. Well, has any suggestion occurred to you as to fixing this road which you recommend should receive $40,000, except to get Congress to appropriate the money?

Capt. WHITMAN. None other. That is all I could do.

The SECRETARY. You recommend it be done?

Capt. WHITMAN. Yes, sir; in the interest of the development of the park.

The SECRETARY. Then it looks as if it was up to that very effective agitating body down at Los Angeles to get busy.

Capt. WHITMAN. Yes, sir. I would like Mr. Fry, Mr. Secretary, to add what he knows about that. He has been there a good many years and I haven't.

The SECRETARY. Mr. Fry, tell us about it as you see it.

Mr. FRY. Mr. Secretary, Camp Sierra, situated in the very midst of the Giant Forest, is the only tourist camp within the Sequoia National Park, conducted under concession by the Interior Department, and is surrounded by the most scenic and picturesque country that could be found throughout the world. The only method of reaching Camp Sequoia in this Giant Forest is by way of either the Southern Pacific or the Santa Fe to Visalia, thence by the electric car line to Lemon Cove Station, thence a distance by wagon road some 40 miles to the camp. This road leading into the Giant Forest is all mountain road—that portion of it lying within the park between the park entrance and Camp Sierra is 19 miles in length. The portion of the road, the upper portion of the road between Camp Sierra and Collins Mill, a distance of 12 miles, is practically a two-track road—it doesn't exceed a grade at any place of 8 per cent.

The SECRETARY. What is the general grade?

Mr. FRY. The general grade is about 4½ per cent. That portion between Cowan Mill and the west park entrance at the lower outlet is about 12 feet in width and 10 miles in length. It has 62 passing points for teams or any class of vehicles. The portion of the county road below Lemon Cove Station and the park entrance is a very much poorer road than anything we have in the park. There is no entrance from the east, south, or north. There has been no accident in that vicinity to my knowledge since automobiles have been operated. The demand for using the Giant Forest road never before came before the acting superintendent's office until three years ago some few demands were made, and they kept coming at intervals, until, during the month of September, there was a demand made at one time representing 64,000 automobile owners for permission to enter the road.

The SECRETARY. Forget it.

Mr. FRY. I was showing the pressure. That is the character of the country and the road. Now, if there is any question, Mr. Secretary, that you would like to ask in regard to the forest other than what Capt. Whitman has said already, I will be pleased to answer it.

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The SECRETARY. I don't think there is anything else. In explanation of my interjection, I wish to say that even the automobile people who attend this conference have come to me and told me privately what they really think of this question, although they have joined in a general request to admit automobiles, which will discount the general representations very, very heavily. I assume that it means that automobilists generally would like to have admission to the park if admission can be had upon the proper conditions of comfort and safety, and they usually pass that question up to us. When we ask them the question, they very frankly admit that they do not believe that existing conditions are such as to justify admission and as to what changes are to be made they put that up to the engineers, so that it goes back, as Col. Forsyth has said, to sane, reasonable engineering advice. We will recognize both sides and not attempt to be radical either way, but try to get at the fundamental facts and then decide.

Mr. MCSTAY. May I say a word right here? We have just taken the opposite position in this matter from that which we took on the Yosemite road proposition. We brought our own engineer's report on the Yosemite matter, presented it, and on behalf of the automobile club, I have no apology to offer for the nature of our report. I believe we come before you in a comprehensive and businesslike manner. I take the position that the Interior Department of the United States is merely a department of the people and should be so considered. I consider that the petition of 64,000 people or 6,400 people is entitled to consideration. I further take the position that the parks, the Yosemite Park, the Sequoia National Park, and all parks, belong to the people and should be opened to the people. In this matter of the Sequoia Park, I was very pleased that it was possible to have such testimony and such evidence as had been offered by the engineers and superintendents of the park itself, which I believe demonstrates the fact that the park is now in a condition to open to the motorist without the construction of this 6 miles of road. The construction of the 6 miles of road, as I understand Capt. Whitman, would add greatly to the facilities and would enable a perfectly independent automobile road, but, Mr. Secretary, there is one thing should be considered and I believe it should be considered seriously by the Interior Department, and that is the fact that California, not alone the park, but California, is the playground of the United States.

The SECRETARY. Pardon me, but I do not think it is necessary to emphasize or repeat what we have heard on the subject. I don't think it will be helpful to give assurances of this character. If Los Angeles is interested in this question, it is up to them to help us get the $40,000 necessary to build the road.

Mr. MCSTAY. We will be very glad to do that, but, Mr. Secretary, when a State in the Union undertakes to build some 20,000 miles of

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road, there is a purpose in that and the purpose is to reach these points. It is what the State of California is doing, and we are anxious to have the cooperation of the Interior Department. It is going to take not less than two years' time to build a road to the entrance of this park. If we know the park is to be opened—if it is opened—then we can go to work and endeavor to have the macadamized roads built to the entrance to these parks, and that is the particular point we had to bring out, that we have a vast amount of work to do during the next three years and we are particularly anxious to connect these points before the Panama Exposition.

The SECRETARY. You are no more anxious than I am. I started with that two days ago—that I was in favor of opening the national parks to automobiles if it could be done under proper conditions. It is not necessary two days and a half after to argue with me the proposition and to assume it is necessary to convince me. Let us start with the supposition that some things are settled. I am thoroughly convinced that the parks belong to the people. Very well. I want to know who are the people, and I do not conceive that either 64,000 or 664,000 automobile users in the United States constitute the whole people. It is necessary to take care of both kinds and all kinds of people in the national parks, and the question is whether we can take care of the 64,000 without doing injury to the rest of the population.

Mr. MCSTAY. You have the evidence of your engineers in this matter.

Mr. PILLSBURY. Mr. Secretary, I am vitally interested in this park—I am planning this summer to take in some 6,000 people. I should like to tell my own experience in going through this park. Leaving Visalia in the morning on the electric to Lemon Cove, one takes the stage and goes about half way over a mountain road—arrives there about noon, stops at a wayside farmhouse for lunch, and spends the rest of the day at this little farmhouse, it being too far to make it clear into the park that day. The next day over a continuation of the same vile road to the entrance to the park and then on up into the grove. It takes, therefore, two days to reach this park. Now, I am planning, as I say, to take 6,000 people into this park and into the Kings River Canyon, and to do this I can not afford to put in two days' time in reaching this Camp Sierra, and must put on an automobile stage between Visalia or between Lemon Cove and the entrance to the park. The good road commences at the entrance to the park. The only practically first-class road is within the confines of this park—the part that automobiles are now excluded from, and it seems unreasonable to me to have to be obliged to put in automobiles over the vile part in order to connect with the good part and make it in one day, as I would be obliged to in taking my parties there.

The SECRETARY. What is your suggestion?

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Mr. PILLSBURY. My suggestion is that automobiles be allowed to go through this park over its present road. It is ever so much better and safer than the automobilists are now allowed to go over in reaching the General Grant Park at the other end of this national park.

The SECRETARY. Capt. Whitman, what have you got to say to the suggestion just made?

Capt. WHITMAN. Mr. Pillsbury, in his comparison between the Sequoia and General Grant Roads, is referring to the county roads. In the General Grant Park there is no grade and there are entirely separate roads for automobiles. Horse vehicles do not use that one. As to the safety of the present Giant Forest Road, I am loath to state, as much as I would like to see the automobiles come in, that I do not consider that they should be admitted on that road on account of its precipitous sides and narrow places where the granite rock outcrops. There is too much hauling—the teams that haul our supplies, etc., up there run from six to eight horses and string out a long way on this road, and I prefer to stand on my first ground that a separate road be built even if it does cost $40,000. It is worth it in the end.

Mr. PILLSBURY. After making the trip through the Sequoia Park to the Sierra Camp I went over to the General Grant Park, starting at Los Angeles, in an automobile stage, which is allowed to go into this park. It is one of these large cars that hold about 25 people. They run all summer long, almost on a 10-minute schedule without a stop. They went over roads which are so bad compared with the road going into the Sequoia end of this park that there is no comparison. The turns were so bad the auto couldn't make it without zigzagging to get around some of the turns.

The SECRETARY. That may be a good reason for not continuing that. The argument that we have done something, if it is a mistake, of course, does not carry very far.

Mr. PILLSBURY. Of course, this place I spoke of is a county road and not within the park.

The SECRETARY. Let me say that this argument carries no particular weight with me. The fact that we do use or permit automobiles to go over very bad roads where they are the only roads that people can go over, and where the county authorities choose to take the chances, seems to me to have very little application to the question as to whether in a pleasure ground we should permit that practice. The United States Government is looking after these roads and it is in charge, and there will be a very different measure of responsibility when we permit the use of the road in such a way as to lead to serious accident. Where outside or county authorities say that is the best they could do and these poor roads are the only roads there are the people have to use them. We don't have to let people come into parks over that kind of road. I mean we don't have to permit that kind of vehicle over this road.

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Mr. PILLSBURY. The roads in the park are about 75 to 90 per cent better than the roads outside, and that much safer.

The SECRETARY. When all engineering advice is that we ought not to use these roads and can not use them in safety, I can not see that we advance very much when we know that outside they are worse.

Mr. PILLSBURY. Well, if your engineers are automobilists—I looked the roads over carefully. I went into the General Grant one day and out the next, just to see what the condition of the road was, and I contend they are perfectly feasible and safe.

The SECRETARY. Are you an engineer?

Mr. PILLSBURY. No; but I have had a great deal of experience in the California mountains.

The SECRETARY. If you were Secretary of the Interior and some individual rose in the audience and said that he was interested in carrying people in automobiles and it would be easier and better if he were allowed to do it and that he thought it was perfectly safe and yet the engineer familiar with the matter said he didn't think it could be done safely, what would you do?

Mr. PILLSBURY. It is a difference of opinion.

The SECRETARY. Who do you put your money on—the engineer or the man who knows his own business and therefore thinks he ought to take automobiles over the road?

Mr. PILLSBURY. I think, Mr. Secretary, that Mr. Fry has stated that he considers the roads absolutely safe in their present condition. He has been in the park for a great many years and has had wide experience.

The SECRETARY. Then you think you can support your side by the head ranger's story. Is that right, Mr. Fry?

Mr. FRY. As long as automobiles run, we will have accidents; but I base my theory on this, that automobiles are running and do run on much worse roads than we have in the park, and I would approve of them going over the Giant Forest Road only under certain restrictions; they can run the 19 miles in less than two hours.

The SECRETARY. What restrictions do you think would help?

Mr. FRY. The restrictions should be that certain portions of the day or hours of the day that portion of the road be thrown open to automobilists.

The SECRETARY. Have you an adequate force to enforce regulations of that kind?

Mr. FRY. In addition to the military we have ample force.

The SECRETARY. You mean using the military?

Mr. FRY. The military is there during certain seasons, but if the military was not there it would require perhaps one additional man.

The SECRETARY. How would you check with one additional man?

Mr. FRY. At the park entrance. We would station a man at the park entrance and one at the mill. At the upper end give him a limit

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of time and he mustn't reach that point prior to a certain time, and let people in general know that rule. This would be automobile day, and people who had horses that were frightened at automobiles would know that certain days or certain hours would be automobile days and therefore would shun it.

The SECRETARY. Your idea is that we might exclude the horse vehicles on certain days in the week?

Mr. FRY. Not exclude them, Mr. Secretary.

The SECRETARY. You mean we can exclude them or notify them if they come on it is at their own peril?

Mr. FRY. That they went on subject to these restrictions, and the automobile traveler must obey those restrictions in every particular The run can be made from the forest or out of the forest in less than two hours, with what I consider apparent safety. I am suggesting this as a measure in justifying this matter between the horse-drawn vehicles and the automobile.

The SECRETARY. Now, let us get facts. Your suggestion, as I understand you, was that certain days in the week the automobiles might be permitted——

Mr. FRY. That is it exactly.

The SECRETARY. Do you understand that on those days horse-drawn vehicles are to be excluded or permitted to come in?

Mr. FRY. Permit them to come in.

The SECRETARY. Provided they and the automobiles comply with certain regulations?

Mr. FRY. Yes, sir; the automobile. The automobile is placed under a restriction.

The SECRETARY. That restriction is that he shall run at a certain speed?

Mr. FRY. Yes, sir; and give the right of way—shut off his engine, as in the Grant Park.

The SECRETARY. Your theory is that with this restriction we can let them come in with safety?

Mr. FRY. With apparent safety.

The SECRETARY. Why do you qualify the word "safety?"

Mr. FRY. I do not mean, Mr. Secretary, that you can run an automobile anywhere with perfect safety.

The SECRETARY. Apparently we can't operate a horse-drawn vehicle with perfect safety; but go on—is that all you meant by "apparent safety"?

Mr. FRY. No. I don't believe, Mr. Secretary, you understand what I mean by safety. What I mean, Mr. Secretary, is this: That there will be no more danger so far as the team is concerned on that road, in my opinion, than there is in the San Joaquin Valley on a wagon road.

The SECRETARY. No more danger?

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Mr. FRY. I don't believe so. Of course, if the brakes should give way the Interior Department wouldn't be responsible for frightening horses.

The SECRETARY. Now, Mr. Fry, I suppose that if vehicles were driven with the greatest of care on the roads we have in any of these parks that there would be extreme unlikelihood of an accident, but we don't have vehicles driven with the greatest care, and we do have accidents, and we do feel responsible for it. Why do you think we wouldn't feel just that way if we had an accident in the Sequoia or Grant Park? Do you think that if we notify people that it is done at their peril, and that they must comply with restrictions, which if they do comply with, there will not be any accident, and if a particular man doesn't comply and makes mistakes and an accident happens, that in that way we relieve ourselves from responsibility?

Mr. FRY. Not exactly.

The SECRETARY. Then I assure you that I feel responsible so far as I am concerned.

Mr. FRY. It is, then, unpreventable.

The SECRETARY. But do you think the likelihood of accident increases with the mixing of the two vehicles, even though under restriction?

Mr. FRY. The likelihood for accidents is more frequent with the increase of travel, but I do not believe with these restrictions there would be more accidents than with the same number of animal-drawn vehicles.

The SECRETARY. You think the restrictions are feasible and practicable?

Mr. FRY. I think they can be made feasible and practicable.

The SECRETARY. The ones you suggest?

Mr. FRY. Similar to them. I wouldn't be favorable at that time under the condition of the road to the constant pouring in or out of automobiles. These restrictions are just for the automobiles. There are some 24 towns within the vicinity that can be reached representing something like several thousand people. They can leave home in the morning and be in there in the night. They would arrive at the park entrance in the afternoon. No automobiles should be permitted to go out that afternoon. The automobiles should stay in. They should come out before noon on the days that were thrown open. This should be ample restriction to protect the teamster.

The SECRETARY. Captain, you have heard what Mr. Fry has said. Does that modify your view at all?

Capt. WHITMAN. Not at all, sir. Mr. Fry, like myself, would like to see the automobiles come in, but the Giant Forest road is so long, the freight teams that bring our forage to our camp take four to five days for the round trip and they are going all summer, and it would be absolutely impossible in that length of road to set any morning or afternoon or day in the week that that road would be free from wagons. If it happened to be a piece of level road that automobiles could go over with perfect safety in a short time, it would be all right. I believe there

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is no hour any day in the week that there are not heavy teams going or coming on that road.

The SECRETARY. You don't think it would be practicable to have Mr. Fry's plans put into effect?

Capt. WHITMAN. No, sir; I do not think it would be feasible. The automobiles and wagons are bound to be on the road at the same time, and the freight teams move so slowly; they are always present.

The SECRETARY. We will have to ask Mr. Pillsbury to postpone bringing the people in for one season at least.

Mr. PILLSBURY. We have a soldiers' camp within about 2 miles of the entrance to this park and telephone connection with the parks. There is absolutely nothing easier than to designate the hours for automobiles being allowed over the road.

The SECRETARY. Does that meet the captain's suggestion at all, about the wagon roads and teams that are on the roads all the time?

Mr. PILLSBURY. Yes, sir. We are only asking—only expecting—certain hours in the day—some notification must be given about times and——

The SECRETARY. You mean there would be telephone stations all along the route? The teams, as I understand the captain, are strung out along the road, going in and going out.

Mr. PILLSBURY. There is one class of teams—that is, the Government teams. All the others would make the distance from the soldiers' camp to the entrance in a short time.

The SECRETARY. Half a day?

Mr. PILLSBURY. It would be less than half a day.

The SECRETARY. Are you speaking now of automobile or carriage?

Mr. PILLSBURY. The stage for tourists—the ordinary way at the present time. Automobiles would make this park easily without any danger at all, any more than on any ordinary mountain road, in less than two hours. If they were given only two hours, that would be found most suitable. It is not necessary to go to any expense that I can see to let them come there.

The SECRETARY. I have discussed with Col. Forsyth during the recess the question of regulations along the general lines on which you are talking—somewhat the same as suggested yesterday—and he has very pronounced views as to the impracticability of that particular method of handling this matter. Colonel, it is the same question we were talking about. What have you to say about it?

Col. FORSYTH. For a road 16 or 20 miles long, with a steep grade, it is utterly out of the question, Mr. Secretary, as long as there are heavily weighted freight wagons. We can not count on their making regular schedule time on a road of that length. It takes a loaded freight wagon nearly all day to come from El Portal up here, half of it a horizontal road, nearly.

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The SECRETARY. How about the passenger wagon?

Col. FORSYTH. You must provide for breakdowns of an automobile. How are you going to get it out of the way on a road that is not wide enough for two teams to pass.

The SECRETARY. Captain, can you tell us whether there are turnouts on the road we are now discussing?

Capt. WHITMAN. Yes, sir.

The SECRETARY. How often?

Capt. WHITMAN. Some 62.

The SECRETARY. In what distance?

Capt. WHITMAN. In 10 miles. There are very frequent turnouts, Mr. Secretary, but nevertheless the turns are so sharp that you frequently get caught between those two, as I did coming down on my last trip. We met a freight wagon and one wheel jumped over the axle of our wagon. Mr. Pillsbury's suggestion to stop the traffic at certain hours can not be applied to the passsengers who want to get down and must catch a train. If they leave the tourist camp and start for a railroad station they are going to get there with a livery stable rig or anything they can get.

The SECRETARY. That is one point that has not been mentioned. What about train schedules? How are you going to regulate the traffic in and out with regard to existing train schedules or any schedule the trains should work out?

Mr. PILLSBURY. It is necessary to put in automobiles to make the trip in order to connect with the train service.

The SECRETARY. We are not all the people. How about the man who has the horse vehicle, can not run an automobile, or prefers to ride in a stage wagon?

Mr. PILLSBURY. The horse vehicle does make the trip from Sequoia Camp to Lemon Cove in one day and connects with the train.

The SECRETARY. Do you think that schedule could be maintained if the proposed restriction as to hours were used?

Mr. PILLSBURY. Yes, sir; that is, on the down trip. Going up it takes two days; only a day and a half, but they make you stop over at this farmhouse a half a day.

The SECRETARY. So that the train schedules are morning and evening arrivals?

Mr. PILLSBURY. Yes, sir.

Mr. VALENTINE. Just a point that has not been discussed. In the San Bernardino Mountains they have been doing a great deal of heavy freighting by team. This year they put on large trucks. I believe that your great objection, Mr. Secretary, is the matter of six and eight horse freight teams. If you would put on auto trucks in hauling that freight it would be in the interest of economy, and I think would solve the whole proposition.

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stated that a team has the right of way, and that an automobile driver must handle the grade in such a manner as to give the team perfect safety. If they meet on a grade the automobile is to take the outer side of the hill, regardless of the direction in which they are going, and if the team appears to be frightened the automobilist shall bring his machine to a stop, and if the horses are frightened he shall get far enough away so as to give the team plenty of room, and if they meet on a narrow place on the road the automobile shall back up and get out of the way of the team. Last year, under these rules, there were 279 automobiles in the Crater Lake Park.

The SECRETARY. During the whole season?

Mr. ARANT. During the season of 1911; and at the same time there were teams passing back and forth on the road.

The SECRETARY. I take it that this regulation in regard to the hours that automobiles might be admitted was not put into effect so that teams might keep off the road?

Mr. ARANT. They paid no attention to it. They travel the road now in the forenoon and also in the afternoon just the same. And this year to the 1st day of October, the season opening very late this year—as late as the middle of July, or later, to the 1st day of October—there were 500 automobiles—that is, in round numbers; in actual numbers, 492 automobiles—to October 1.

The SECRETARY. Now, Mr. Arant, can you tell us how many vehicles were there in that period?

Mr. ARANT. I couldn't; but a great number less than have been coming in there before; more automobiles and less horse-drawn vehicles. The travel in the park this year has been at the least 50 per cent automobiles; probably more.

The SECRETARY. Tell us something about the road. You told us about the condition of the road as to ruts. Is the road along the edge of cliffs of steep grades?

Mr. ARANT. There are some grades, and the road leading in from the south boundary of the park runs on what is called the rim of the Anna Creek Canyon, but not near enough to the canyon at any place, I might say any number of places, so that there is any danger. It runs a little distance——

The SECRETARY. It is not on the rim of the canyon?

Mr. ARANT. It is on a timbered bank which lies above the canyon. Some places it runs near the canyon, but not near enough to be dangerous.

The SECRETARY. Do you think there are any dangerous points of the kind we have in this valley in the Crater Lake Road; and if so, how much?

Mr. ARANT. Not particularly so. There might be some places that would be regarded as a little dangerous—a person could go off if they wanted to; but there is plenty of room not to go off. As I say, this valley

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is a level, timbered valley into which this road runs which is right along the rim of the canyon.

The SECRETARY. All right. I am much obliged.

Mr. PILLSBURY. I am also interested in Crater Lake; just came from there a week ago yesterday in an automobile. I went over this road, and the road is along the rim of this canyon, and the places where it approaches close to the canyon an extra road has been made to drive out to the rim. The really dangerous part of the road is the last mile, just as you get to the rim of the canyon. The road is quite steep and very winding.

The SECRETARY. Is it near the edge of any drop off?

Mr. PILLSBURY. No; but it——

The SECRETARY. But you wouldn't say there was any such condition existing there as here at all?

Mr. PILLSBURY. I shouldn't say the road was any more dangerous than the one in the Sequoia National Park.

The SECRETARY. I asked you the question whether or not you would say the conditions there are at all comparable with those that exist here in this park?

Mr. PILLSBURY. Not in this park, but in the Sequoia they are quite similar.

The SECRETARY. I have not been there, so I can not ask questions intelligently about it.

Mr. Marshall has been making a reconnoissance of the proposed Estes Park region in Colorado, and that is one of the questions he has had to observe there. What was your observation there?

Mr. MARSHALL. I might first say I am one of the timid kind and afraid of automobiles. I have been in them when they were going 40 miles an hour and some that didn't go at all, and I was afraid both ways. I went to the park and went in by what was considered by the people in general the dangerous way for an automobile to be used. I may say in this case that I am neither defending nor opposing the automobiles in the park. Mine is just simply an attempt to inform you the best I can. About four years ago they had very crude roads getting into the proposed Estes National Park—narrow, bumpy, and very rough. Since that time, and it has been going on for about four years, there is what might be termed a fair road—not much better than the average road in a national park, not as good as the old Collin Road in the Sequoia. The road is only about as wide as an automobile. The turnouts are few. There is a roaring, beautiful river on one side and a hill on the other, like we have right here. It is 32 miles from Loveland to Estes Park. Thirty miles of this is through this canyon. They make the trip in two hours. They have a White steamer there for stage use and they go around these curves so fast they take your breath away. I am frightened to death all the time and they seem to think it is nothing, and we passed horses

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going and coming. The automobile when it comes in sight of a turn blows the whistle and goes around very slowly, less than 6 miles an hour, which can be done better with a steamer than the average gas car, and they meet these horses going and coming and don't pay any attention apparently to the danger at all. I have had some little experience with Government mules. We had six on the team last summer. They had been pastured around Cheyenne.

We drove three days across country from Cheyenne. At the first turn on this road we met an automobile. The automobile came to the turn and stopped. The mules crouched. They finally went on. When they made the next turn, they met another automobile. They didn't like it very much, but they went on. About the third time they didn't pay any attention. I am told that since they started this automobile system on two or three roads some of the grades, say 18 per cent and steep on both sides, that they haven't had a single accident.

The SECRETARY. Did you get an estimate as to the difference between the horse-drawn vehicles and the machines entering the park?

Mr MARSHALL. I don't think the horse-drawn vehicle has increased or decreased, but the automobiles have made the increase. The automobiles have that country, and apparently no one objects, and the animals are not afraid. Now, when you come to the Collin Mill Road, with its freight teams and mules, don't those same animals see the automobiles down below? Is there any more reason to believe they would be more frightened on the grade than they are there? And if the animals, two or three or six, start to run away, if you go off 50 feet you might just as well go 500. There are plenty of turn outs on the Collin Mill Road. It is one of the best we have. I am not advocating either one thing or the other. There should be no objection to the automobile when the automobilist knows that if he fails to meet the regulations he will be excluded entirely; he will be cautious and careful. From the experience I had in the proposed Estes Park they are extremely careful; the drivers were particularly careful to stop on each curve and blow the whistle. I don't think any objection to having an automobile stage or truck, whatever you call it, from El Portal right into the Sentinel Hotel; nor do I see any objection to using any certain road—this or the Wawona, Big Oak Flat, or any other. I do not believe it is going to be any more dangerous, Mr. Secretary, than it is to-day; and horses will frighten—I have had them run away myself from a sack of barley, and an automobile doesn't run away from a can of gasoline.

Mr. CURTIS. Will you permit just a word of testimony in support of what Mr. Marshall has just said? Last year I had the pleasure of going through this big canyon, known as the Loveland Canyon, for 20 miles in a large gas car, and we had a very cautious chauffeur, and a portion of the trip was after dark, and we met along that road innumerable horses, teams, and trucks, and people in coaches, and the entire road is so crooked

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that I did not believe there was 50 feet of straight road in the whole canyon, and yet we went there at a fast speed and had no trouble whatever, and I have found that people through that park were heartily in favor of automobiles, and as a man who is interested somewhat in automobiles, having one myself, I think that Loveland Canyon is one of the wildest and wickedest pieces of road I ever went over in my life, and yet we had not the least bit of trouble. The road was so narrow it was just wide enough for the automobile, and yet by cautious travel, which we did that evening, there was no trouble whatever.

Mr. ARANT. Mr. Secretary, I want to say, like my friend, Mr. Marshall, that I am not advocating automobiles only so far as they might be a benefit, but I want to say that in our park, the Crater Lake Park, at the time of admission of automobiles, or the time they commenced running in there, the visitors to the park during the season numbered less than 2,000.

This past season there has been more automobile travel; the number was 5,109 up to the 1st of October, or, I believe, a little later in October, probably the 5th; and as far as accidents are concerned, I am happy to say there hasn't been an accident of any kind from an automobile in the park since automobiles have been running in there. There have been no collisions between persons traveling in coaches or private rigs, horse-drawn vehicles and the automobile people. They respect each other's rights. If an automobile comes out behind a team in one of these narrow places, he sounds the horn and as soon as the team finds a place for the two vehicles to pass he either turns out of the road and lets the automobile pass or stops in the road and lets the automobile go around. This talk I have heard here of excluding automobiles from certain roads or separating them is a new thing to me entirely. We don't pay any attention to it up there and there don't appear to be any necessity for it in that park. I will say that in a way I am not advocating the use of automobiles any further than so far as it is a benefit to the people, but it would undoubtedly cut down the attendance in the park 50 per cent or more to exclude automobiles. Now, the distance from the surrounding towns and railroad stations and abiding places there is too far to Crater Lake Park. Crater Lake, which is the principal object of interest, lies right on the summit of the Cascade Mountains, and is, of course, a little distant from the valleys and towns in the valley; it is 85 miles from Medford and 62 miles from Klamath Falls, the nearest points to the lake. Those are the nearest points and villages, and the people in the town of Klamath Falls, as well as those on the western side, have only Sundays for recreation. They start out early in the morning—Sunday morning, the business men or clerks or the working people—they make the round trip to Crater Lake and back in a day.

The SECRETARY. That is the principal use of the Crater Lake Park? People who come out in the forenoon and go back in the evening?

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Mr. ARANT. Yes, sir; those that are near enough. Of course, those from a greater distance stay overnight or even a longer time.

The SECRETARY. But there are comparatively few who stay a longer time than that?

Mr. ARANT. That is, just during a part of the day?

The SECRETARY. A longer time than overnight?

Mr. ARANT. Yes, sir.

The SECRETARY. This change that was made in the rules up there limiting automobiles to certain hours of the day—was that made on your recommendation?

Mr. ARANT. I believe it was; yes, sir.

The SECRETARY. How did it come about? I understood you to say you saw no reason why the two vehicles could not use the road at the same time.

Mr. ARANT. Well, the experience has taught me that.

The SECRETARY. Up to that time you thought there ought to be a separation?

Mr. ARANT. I believe I was directed by the department to draw up a set of rules under which automobiles might be admitted. Whether that was added to my rules or whether I suggested it I could not say.

The SECRETARY. It was not a matter of particular importance to you at that time or you would remember it.

Mr. ARANT. I can't remember.

The SECRETARY. Was Secretary Ballinger up there himself immediately prior to the adoption of those rules?

Mr. ARANT. He was up there, but without having occasion to look the matter over. I can not remember when he was there, but I believe it was the preceding season—1910, perhaps, or 1909; I couldn't say positively.

The SECRETARY. Well, now, Capt. Whitman, you have heard the expressions of opinion of these gentlemen with regard to their observation and experience. What impression does it make on you?

Capt. WHITMAN. I am still speaking only for my own little park. As regards the Giant Forest Road, it is not a question of familiarity of animals with machines—that is a mere matter of education—but on the Giant Forest Road there are many places where I don't believe an automobile could pass a wagon. I know in driving down, myself, we took every precaution, and the teams coming up are loaded with sleigh bells, so they can be heard. Nevertheless, you come around a sharp point and are confronted with a hay wagon or a heavy wood wagon, and in some cases the teams had to be unhitched and the wagon hauled back. Now, whether the automobile is always in condition to back up if caught, I wouldn't be prepared to say. I am not an automobile driver. I am not familiar with what they do under all conditions and what their possibilities and capabilities are.

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The SECRETARY. Col. Forsyth, you have heard what these gentlemen have to offer in the way of personal observation. What effect does it have on your judgment?

Col. FORSYTH. I still think, Mr. Secretary, that there are features even that I am not prepared to deal with—to give an opinion on. It is a question of engineering. I think that if the roads are made safe, and the question as to what is safe brings out such diversity of opinion, it must be settled by the engineers. My only opposition to the automobile in this park is the safety to human life. Every summer but this one we have had a number of people killed and a larger number maimed, badly injured. The Army hospital over there has been of immense usefulness every summer but this. The motor cycles and bicycles frightened the stage teams. I have seen them do it, and the runaways have been accompanied by loss of life. We do know that perhaps the majority of automobile drivers are careful. You can't pick up a paper but what you read of some chauffeur who is not careful—there is a machine turned over and a man killed. Now, if that happens on level roads, it is going to happen with more deplorable results on mountain roads. You don't have to have the advice of an engineer on that. That is common sense, but I agree with Mr. Marshall that you are just as liable to have your neck broken by being thrown down 50 feet or 500 feet. An automobile owner came to me not very long ago. He said that he felt that he ought to clear his conscience. He had come in with a grievance against the Government. He had a right to come in here with his machine.

The SECRETARY. He thought he had a right.

Col. FORSYTH. He thought he had a right. That was his grievance. He had come in to look over the roads, however. He was taken up on the Big Oak Flat Road. He had been up to Fort Monroe on the Wawona Road. He thought it was only fair to his conscience that he come in and tell me that he wouldn't bring his own machine over either of those roads. If he ever came in the park with the road in the condition it is, it would be in a hired machine. He thought too much of his car to risk it. My attitude on the automobile question is that I don't want to have to haul any dead bodies to our hospital and embalm them and ship them out, nor do I want to have any broken bones set, or anything of that kind. The most careful people of human life and limb that I know are we Army and Navy professional men. It is all right when it comes to killing a man—I don't mind that quite so much as I do when it comes to women and children. Now, one automobile owner came to me and said, " What matters it to the Government if we want to risk our lives? What business is it of the Government? The Government shouldn't care." Sufficient answer to that is to say that the Government does care; but we can go a little further than that and

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say that if the man who wanted to come in in his car knew the danger he was running and he broke his neck, why, all right. I am just as enthusiastic in having everybody see these parks as anybody, but I want them to do it in safety and comfort. I don't believe in enjoying scenery at a risk. I want everybody to come in. Build roads, so that they can come in without being in jeopardy. Now, while I am preaching, I will just go a little further. One of the primal causes of government was the desire of a number of men to shift from individual shoulders to a few selected men the responsibility of looking after the safety of all that were concerened in that organization. That was the very first incentive that brought about government

Now, in connection with all the national parks, the bill setting aside that park either says so explicitly or by implication that the park shall be a place of resort and recreation for the people, a place of benefit and enjoyment for the people for all time. Now, when the Government sets aside a park for that purpose, it takes on itself the obligation of making that park accessible for all the people; that is, possible for all time. Now, that obligation goes with the very establishment of parks, but that obligation is limited. It is overshadowed by this other obligation on the Government to throw around the people every reasonable safeguard to life and limb. Now, that obligation is of greater importance than the other. It overshadows it. It is fundamental. That very same obligation in a different aspect compels our Government to send our Army and Navy to distant lands to protect our lives and people. That is the same obligation resting on us right here, on the Secretary and on myself, in the protection of life and limb here in the park.

Now, in the way of mountain roads, this park is much more dangerous than the Yellowstone Park in the main. The roads here are pretty narrow. This Big Oak Flat Road is only 8 feet wide in perhaps a hundred places in 4 miles, where a rocky cliff rises abruptly on one side and sinks down abruptly on the other. Now, no teams and motor cars can pass each other there, nor are the turnouts sufficiently numerous, so that my position on the automobile question is I want a reasonable safeguard to life and limb, and if that is provided, why nobody will welcome the automobile more than I.

Mr. FRENCH. I am not particularly interested in this argument, but I have been waiting and listening for a proposition that would solve the going over of a road in two different directions with different vehicles and to my mind it has not been set forth. I have had experience in railroad construction and necessarily I have been up against these problems. I will give you my idea. It may be as wildcat an idea to the others as theirs are to me. From my experience with the railroads—they have been laboring from year to year for safety—the first thing is to go to work and get a sufficient roadbed; the next is the service. From 50-pound rails we have now run to 150-pound rails. That is what

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you have got to have in an automobile and wagon road. Now, you have a road here 16 miles long with sufficient places, I think, at intervals, for a double track. Why, if you have a road 16 miles long, why can't you have 3 or 4 or 5 miles, as the road adapts itself, put in a double track as long as you can? Then you don't have to hold teams at one end of the road or the other. Start them each way and drive into those sidetracks at different intervals. Then put up a block system which is operated by the railroads. That lets your teams over the road in each direction at the same time. Now, for the machine that breaks down: Make it obligatory on every machine or wagon that goes through there to carry a switch rope and when the machine has a breakdown make it obligatory on those parties that are in good condition to use those and draw the other machine from the passage. That is the way we do on the railroads.

Mr. WALKER. While I am not vitally interested in any of the involved problems that have been discussed this morning, I am vitally interested in the success of the automobiles in getting into the parks, and listening to the arguments—some from technical sides, some from practical—reminds me of a situation which presents itself every day at the Boston School of Technology. Each class has a problem presented to them for finding out the engineering necessities of a certain bridge. There is no method of engineering by which they can safely go over the bridge that is given them, but each class walks over that bridge every day to school. Now, that is the problem we are confronting in some degree here—the question of our Army engineers, who are necessarily and laudably conservative in everything they do as opposed to the practical, because from the engineering point of view they don't seem feasible, from the practical point of view they are carried out every day. It seems to me that the Army engineers are very conservative in their judgment as to the actual conditions and actual facts—that they might come out of their shell for a while and see the other man's point of view and be a little more lenient than Capt. Whitman's stand. It looks to me as if he is a little too rigid. I am sure, with a little common sense, devoid of engineering, and the ethics of the road, we should come to an early and easier solution of the problem.

The SECRETARY. I am glad you came to the front again because I want to ask you some questions, and first let me say to you that I had at the last conference much the same experience that Mr. Marshall has described to you here to-day, and in the experience I had last summer through some of the very roughest mountain territory in the Northwest and over some of the worst roads I have seen I was impressed with the extent to which the horse and horse-drawn vehicle on one side was adapting itself to the advent of the automobile, and the extent to which the automobilist appreciated the conditions put up to him, both for his own safety and that of other people on the same road. I want to add to that the observation that I made in going on a single road. I went up

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a particular canyon on a pretty good road for a mountain road—I should say just a little better than some of these roads we have had under discussion in the park—not a great deal, but some better—in an automobile that passed a large number of vehicles, some coaches carrying passengers and some ordinary vehicles of the country, driven apparently by people who were simply going on the road to and from the park for their own pleasure or on business from home to the neighboring towns, and we had comparatively little trouble—occasionally a horse indicated a disposition to shy; but the automobilist that I was with was very careful, and while it looked a little skittish once or twice we got by in a way that was very impressive, having the two vehicles operating on the same road.

Coming back, however, I came back with a gentleman who, in my opinion, from such observation as I might discover, knew just as much, if not a little more, about his machine than the man who went in, and we passed a large number of vehicles; but we didn't pass a single one of them that its occupants didn't look until we got safely by as if they might have to get up the side of the precipitous mountain on one side or take a chance of jumping off on the other. I had to interfere once in a while myself to the great surprise of this man, who was thoroughly convinced he was going down this canyon with the greatest care. The difference in distance was only half a mile and just the way the men handled those two machines was as different as night from day. Neither one was careless, neither one had indulged in intoxicants, and yet I was impressed with the difference in the way they handled their respective machines. What is your observation?

Mr. WALKER. There is no regulation in the world that is going to prescribe—that is going at all times to cover that case; it is an individual matter. I could draw a parallel case. I have ridden in stages where the stage driver seemed to be a very dexterous and skillful driver where he has put on his brakes in time. If anything ever gave way we were gone. I have come around the same curve with another man who, when he approached this curve, decreased his speed so that when the time came to put on his brakes he was not in the necessity of using it in such a way as to relieve the possibility of accident 50 per cent. This is a personal equation that you can't deal with by regulations. There is no way you can possibly regulate the use of these stages so that one driver would throw on his brakes at a certain point in such a manner that wouldn't endanger the lives of everyone in that stage.

The SECRETARY. That is perfectly true. The problems on the automobile have not been worked on as many years as they have with the horse and carriage. You had an experience of your own in which you found the machine was lacking in some respects.

Mr. WALKER. Yes, sir; but I had that same experience with wagons.

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The SECRETARY. What do you say as to the increase of danger in the use of automobiles and wagons where you mix the two vehicles on the same road?

Mr. WALKER. That is a difficult question to answer unless we bring to bear in mind some individual situation. It is so general.

The SECRETARY. Take it as a general thing, does the advent of the machine increase the danger in your opinion?

Mr. WALKER. Generally speaking, having in mind the increased amount of travel on the roads generally, the proportion of accidents is no greater at this day and age with the automobile and the team on the road than it was prior to the coming of the automobile. There was an intermediate period when automobiles were new, and, as our friend from Crater Lake says, it was a wonder to see two at Crater Lake. During that period there was a proportionately greater danger than at the period before they came or at this present period, but we are now at a point where the wonder is past. I say it is possible to go down this road past every team with the exception of the stage teams and not have any trouble.

Now, there is a reason for that. Stage men get young horses. They get them because they have spirit. They break them in here. Perhaps some of them have never traveled the road in any other place. They are not brought in contact with any other place, therefore they present an element which is very much like the case of the automobile and team 6, 8, or 10 years ago. But this is a condition that will have to be overcome. In order to overcome that in a park where it does exist, automobiles should go in under restriction until the horses are adapted to those conditions. There is an element that few people here realize. If it had rained heavily last night and we had automobiles, a dozen of them, in the floor of the valley, I venture to say that not half of them could get out this morning. That is a question for automobilists to consider, and that is quite apparent because there is a heavy dust condition on that one road—on the Big Oak Flat Road.

The SECRETARY. Is that the only condition under which you think we could not use that road?

Mr. WALKER. Oh, no; I spoke of the Wawona Road because I have favored it from the very start, believing it would serve to accomplish good to the greatest number of automobilists. It makes it possible for us to have an entering wedge into this valley. I have convinced just such conservative men as Col. Forsyth and yourself that it would sooner or later be a practicable thing to do. I have favored the Wawona Road because it gives us an avenue to come to Glacier Point. The last 4 miles from Inspiration Point down present very few opportunities for the passage of teams. It is a precipitous grade and a dangerous one and I fully believe before automobiles are allowed to go there, something should be done, but not that automobiles might go and come for a season

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or two without accident, but I do not believe the department is in position to make of little consequence the existing condition of the road. I believe it is a condition they must take notice of and I heartily agree with Col. Forsyth in his present refusal to concede that automobilists can go down that last 4 miles. He does not believe they can go so far; that is where we differ.

The SECRETARY. I do not understand that to be his position. I understand that before they come that far he thinks that the road should be improved and put in condition——

Mr. WALKER. That is where we differ. I believe automobiles can come to Inspiration Point under restrictions with safety. It is possible for teams to pass in nearly every place up to that point. I have answered your question as to the proposition of accidents to-day as compared with the number of accidents that existed before the automobile came.

The SECRETARY. You told me that the percentage had not increased, in your opinion.

Mr. WALKER. I believe not.

The SECRETARY. And you think that that is an answer to my question?

Mr. WALKER. If it is not, if you will frame it so I can understand it I will try to answer in the same way.

The SECRETARY. Of course, you know what many so-called statistics are and how they are compiled. I would have to see them and know a little more about them than either of us know at the present time. I doubt the accuracy of the statement. I travel a great deal in a machine. I have a very large number of friends who have machines, and I think I am safe in saying that it is the opinion of the overwhelming majority of them that the percentage of accidents has increased due to the machine, at the present time. They are all equally confident that that will change and that it has changed very materially, but you would have to present much more reliable statistics than are available, so far as I know, before I would change my present opinion that in the present condition of things the automobile has increased the number of accidents.

Mr. WALKER. I didn't apparently understand your question. I agree with you that the number of accidents has increased in recent years, but the accidents are to the automobiles and not to those in the horse-drawn vehicles.

The SECRETARY. I wish that were true; but I could give you a long list on the other side. Unfortunately, it is not altogether true. Mr. Myers, have you statistics on hand—can't you help me with them?

Mr. MYERS. I didn't help catch this bear.

Mr. WALKER. Here is a percentage that is in favor of the automobilist.

Mr. MYERS. I have understood, Mr. Secretary—of course, it is a question whether the Secretary will take my statistics—there were more people killed last year by reason of accidents—by horse accidents, or

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vehicles drawn by horses—than there were on the railroads of the United States.

The SECRETARY. That may be. I don't know that it has anything to do with the case.

Mr. MYERS. There was a greater percentage of accidents by horse vehicles than by automobiles.

The SECRETARY. That still wouldn't affect the case.

Mr. MYERS. As near as I remember the case—I am not very much interested in the automobile case; I had a horse run away with me the other day—I would say from my observation that the increase in mortality or the increase in accidents as considered with the increase in the use of the automobile has not increased.

The SECRETARY. Once again, I don't think that comes within reach of the question. Of course, there is a vast increase in traffic due to the use of the automobile. Now, if you add that to the horse-drawn vehicles and say that the percentage of all the accidents is reduced, it may be perfectly true, but the question is whether the automobile has increased the total number of accidents.

Mr. MYERS. Why, certainly.

The SECRETARY. And the question is also whether or not it has increased it in such a way as to add to the danger of the person who is traveling in the horse-drawn vehicle.

Mr. MYERS. I don't think it has.

The SECRETARY. Where are the statistics upon that point? There are a lot of people traveling in automobiles now that didn't travel at all before; there are a great many more traveling because the automobile is in existence and that is an addition to our total travel, and it may be that the percentage of accidents is less than with the horse, and it may be that the automobile will ultimately supplant the horse. The question now is whether the percentage of accidents in horse-drawn vehicles has or has not been increased by the advent of the automobile—which is still not answered by any statistics or facts we have gotten so far.

Mr. MYERS. From that standpoint they have increased, because the use of the horse has decreased so rapidly.

The SECRETARY. Still, that does not touch the question. What we are getting at is this: The question in which we are interested is whether or not the introduction of the automobile in these park roads is going to increase the danger to horse-drawn vehicles, so that even if thereafter the travel by horse-drawn vehicles is decreased 50 per cent the remaining 50 per cent would have a greater chance of accident than before?

Mr. WALKER. You made the question very general in the first place. I asked you to be specific and bring some individual instance or experience.

The SECRETARY. I don't think it would be instructive to take a specific instance. What I want is the question—I will try to make it clear now—Does the advent of the automobile increase the percentage of

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danger to people who still persist in using that outgrown animal, the horse?

Mr. WALKER. In general, I would say no.

The SECRETARY. My impression is to the contrary. If you have any facts or information that you think would correct that impression, I would be very glad to have them.

Mr. WALKER. You asked for an opinion, not for statistics.

The SECRETARY. Your opinion must necessarily be based on something.

Mr. WALKER. I can only give you an opinion, since that is all you asked for.

The SECRETARY. I am now asking for facts: On what do you base your opinion?

Mr. WALKER. I have ridden in an automobile throughout the country for a number of years. It is a hobby of mine. I don't confine myself to any particular locality, and I drive a great deal, and I say that to-day the element of danger due to the operation of automobiles generally is no greater to the horse owner in proportion to the amount of travel on the roads than it would have been at a time when all the people on the roads were driving teams. To-day the element of danger to the horse-drawn vehicle is no greater than it would have been had an equal number of people been in transit in wagons only.

The SECRETARY. That is what you judge from, your observation?

Mr. WALKER. Yes, sir.

The SECRETARY. I am very glad to have your observation. My observation, however, does not accord with that. It seems to me perfectly apparent that the automobile has added a new danger to such vehicles as use horses that did not exist before.

Mr. WALKER. Yes, sir; it has.

The SECRETARY. To meet that danger, do you think, or do you not, that increased width of roads and that sort of thing is essential?

Mr. WALKER. They are not necessarily essential, but they would aid materially in an endeavor to reduce any element of danger.

The SECRETARY. Then isn't this an engineering question, to be judged in a sane and reasonable way, going over the roads and getting the exact facts as to whether or not their condition as to width, surface, and grade is such as to justify putting the automobile in and what, if any, changes we ought to make?

Mr. WALKER. I would like to call your attention to what we have in engineering—a term known as the "factor of safety." That belongs in engineering as a fundamental principle. I only ask the engineers to be a little more careful in the use of the factor of safety.

The SECRETARY. You mean a little less rigid?

Mr. WALKER. A little less rigidity in the use of the factor of safety, and a little more careful in its use, lest they absolutely debar us by reason

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of such conditions from traveling over these roads with our machines by asking Congress for so much money that we won't get it. That is all.

The SECRETARY. You have no quarrel with me on that.

Mr. ARANT. One day this season we had 39 automobiles in the Crater Lake Park. Now, this whole subject is new. We are new, but we have had several years' experience in Crater Lake Park in running automobiles and teams on the same road. We have never yet had a complaint or accident that I have heard of. I have myself, in one of these machines, met a team on a narrow road at a sharp turn, and we backed up the hill several hundred yards to a point were we could pass. That is always done, so far as I know. Another point on this same proposition to show that we work harmoniously—in a region where they raise wild horses and put them in the harness while they are young, and it is astonishing how they are afraid of a piece of wood at first, but half a dozen times and they are not afraid.

The SECRETARY. I think we want to hear from Mr. Colby.

Mr. COLBY. I am glad to have the opportunity of speaking a few words before this conference is over. We are glad to meet you here face to face. We have had considerable correspondence with you, but the opportunity presented of saying a few words directly, I think every one will agree, amounts to a great deal more. I am going to say a little for the club I represent, the Sierra Club, and also other mountain clubs, and clubs of a similar sort, and the relation they bear to the national park. I mentioned this to a gentleman recently, and he said, "What, are you going to blow your own horn?" I said, "Yes; I am going to blow it loud but not long," because I want the Secretary to take away a definite understanding of the relation the clubs do bear to national parks. We have been been working here for a great many years on park problems. The Sierra Club is probably as near a child of this national park as anything could possibly be. We were born as a result of that endeavor, and the publicity which John Muir and those who had foresight enough to see that this park was essential and that its preservation should take place before private monopoly had control of it and put it in such a condition that it would be impossible to include it in the national playground that resulted in its establishment.

Mr. Secretary, I don't think you would be sitting in that chair to-day if it were not for our club. The Federal Government would not be in this valley to-day if it were not for our club. We were the main instrument in bringing about the recession of the valley to the Federal Government. Mr. Muir and others of us saw it was not being properly taken care of, included as it was in the greater national park which our members had gotten established through the publicity they created and the power they brought to bear on Congress. The argument was that it was a dual government existing here, and the conflict was so great we rose up and said the Yosemite Valley should be receded to the Federal Government. We

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were attacked most severely. We suffered all kinds of abuse from certain sources. We managed to convince almost everyone who was open-minded that that was the right thing to do, and because we insisted upon it—Mr. Muir and I went to the California Legislature lobbying, but we lobbied in a fair, open manner—were willing to tell anybody what we were there for and what we were going to do, and we convinced enough legislators, with the assistance we had from different parts of the State, that it was necessary to turn this valley back to the Federal Government, where it properly belonged. Not only is this park national, but it is international in character.

This park is the only one of its particular kind in the world, and while we are here for a few years, yet we owe a duty to the whole world and we will have that international mind that President Butler spoke of at the late Mohawk conference, where he said we should have an open mind and realize we are living in this world with all the different nations existing side by side and that we owe a duty to them all, and it is the same way with this park and this valley and everything that is in this park. We should have in view the rights of the people which the whole world have in coming here. Now, we have done other things along the same lines. I simply have given that for an illustration. Whenever an appropriation for the Yosemite comes up we try in any way we possibly can to bring to bear upon Congressmen—we influence our own Congressmen strongest, and they are certainly of that frame of mind; but we have tried to bring to bear upon the appropriations—and though Senator Curtin believes he was instrumental in getting that extra $30,000 for the Yosemite Park this year, we got our board of trade and our chamber of commerce to telegraph to our Congressmen and as many others as we could reach, and got our friends in the East to do the same thing. I think we had some small part in securing that $30,000. We are familiar with the whole Sierra from one end to the other—all these parks. We have 1,500 members now. Their families and friends feel our club is the club to which they can appeal when anything goes wrong. If the trails need to be put into condition or there is a part of the mountain region that requires improvement, they call upon us first to try to help them; so, in a way, we are an instrument standing between the Government and the people.

Out here locally we occupy that peculiar position which I can best illustrate by a brief story. There was a graduate of Yale came out West. He wanted a little California western life and thought it would be a good idea to live on a farm for a year or so. So he called on a farmer to whom he was directed for a position. The farmer said, All right. See those sheep out there on the hill slopes? Go out there and watch those sheep and drive them into this corral this evening." So he went out, and when evening came around the fellow didn't appear. The farmer got a little scared and a little later, along toward 8, it was pitch dark, he took his lantern and went out toward the corral. He found the fellow out

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there in a very exhausted condition, his tongue hanging out of his mouth. The farmer asked what the trouble was and he said, "Those confounded sheep; I can get those in the corral all right, but I can't get in myself. I have put lots in the corral, but there are a lot more out on the hill." There in one corner of the corral, huddled together, they found a half a dozen jackrabbits. It points this proposition, that we out here approach the actual conditions which exist because we are on the ground, and we are in a position to present those facts and try to do it to the best of our ability. In our publication—and ours is the only publication that takes the same interest and pays the same attention to national parks—we publish all we can, everything the Secretary of the Interior says, every word of wisdom that drops from his lips, we try to catch and publish in this magazine; also the different park superintendents.

The SECRETARY. Do you spend as much each year as the gentleman spent on the road to Coulterville?

Mr. COLBY. A good deal more than that. Those publications reach a great deal further with a small expenditure. We are trying to educate the people of this country with relation to national parks. If it had not been for us Yosemite recession would not have occurred. Mr. Muir was the great controlling factor, but he is the president of our club and it was only through the instrumentality of our club and the literature we published and spread abroad that we were able to educate the people and make them realize it was the proper thing to do, and, as I think, time has proven it is justified, although we are still subjected to criticism. Senator Curtin is confident that if this valley had remained in the control of the State that with his power in the State legislature and the influence of the automobilists in the State legislature that he could have put automobiles in the floor of this valley at any moment. We are blamed because automobile men are kept out. We hope they will be able to come in when the time comes, because we think the automobile adds a great zest to travel and we are primarily interested in the increase of travel to these parks.

The SECRETARY. You represent the Sierra Club, and I see Mr. Muir is here. You have personally been over this valley a great many times. You are familiar with these roads. You say that the position of the Sierra Club is that the automobile ought to be admitted when the proper time comes. Do you think the time has come?

Mr. COLBY. I think it is very close at hand. I feel, as far as the Glacier Point proposition is concerned, that automobiles should be allowed to go as far as Glacier Point with perhaps that thousand dollar expenditure, and as far as coming down into the valley is concerned, that we should rely upon engineering reports, because naturally when it comes to turnouts and the erection of barriers and so on to prevent the machines from going over, you should exercise every precaution, but with the construction of these turnouts and the construction of these walls in the most dan-

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gerous places automobiles could be safely allowed to come to this valley at the present time.

The SECRETARY. Another fundamental question is also involved. What do you think of the joint use of the roads by automobiles and horses as compared with the countersuggestions as to a separate road?

Mr. COLBY. I believe in joint use. The cost of construction of a separate road is too great, and it is an obstacle which we can not overcome. I think the testimony given here by Mr. Marshall and Mr. Curtis and by yourself regarding these difficult mountain roads over which you have ridden, and also the Kings River Road, over which an automobile stage climbs daily, illustrates it. If we take parallel conditions we don't find accidents. We must take parallel conditions. We find the same conditions on Market Street if a driver gets drunk or his machine gets wrecked as we do anywhere in the mountains. It doesn't matter where he is. I think I have about covered what I have to say—maybe a word or two more.

We want to cooperate in every way possible with the Interior Department. I don't know when I had a feeling of greater pleasure than when I received the communication from Mr. Ucker and the publications of the department, which show the department was taking an active interest in these parks and was intent upon seeing that the people realized what they had to enjoy and that they were taking a share of the burden which we had assumed and which we were trying to bring about in our publications by spreading the information all over the world. We send to every club in foreign countries as well as in this country. The time is so short I will eliminate most of what I intended to say and simply close by stating that while we may seem impractical to some, and I wish the Forest Service men were here, for, while some of them are members of our club and we work in great harmony, I think they have the idea that we are too great idealists and want to preserve everything if we can—that we would take the whole world and shut the Forest Service out. We are just as jealous of allowing territory to be included in national parks which should not be included as we are in including territory which should be preserved in national parks, because we realize that all territory which should not be included in a national park weakens the park when there is reason for it being outside.

We wish to make our position as impregnable as possible. In this matter of extension of national parks we certainly are going to be as cautious as anyone could be in examining the reasons for such extension. We had the very great good fortune the other day of giving a dinner to Ambassador Bryce on his way through San Francisco, returning from Australia, and it was one of the most enjoyable dinners I ever attended. He is president of the English Alpine Club, and is as interested in the natural wonder lands as anyone in the world. He told us that he felt that if we could educate our children to love the things of nature, teach

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them what nature has to teach, take them out there to see that they understood the trees and flowers and plants, and then, as they grew older, to take them up in the mountains and make them mountain climbers and lovers of the mountains and these wonderful national parks, that that would do more good than all the statutes the legislature could pass in creating a spirit of morality and in raising the moral tone of this country.

The SECRETARY. Mr. Colby, I may say that if on account of the shortness of time you have been compelled to omit anything, that this will be written up and revised and you may add such matters as you desire and as would be appropriate.

Mr. COLBY. There is one point; our club has been in a way the guardian of these parks—the self-appointed guardian, as it were—because we feel that the Federal Government has need of our help, and we are here to watch for any encroachments; and let me say that since the park was created, if it had not been for the watchfulness of our club at times that this park would have been torn to tatters and very little learned as to this valley.

Mr. PARSONS. Mr. Secretary, ladies, and gentlemen, I am representing the mountaineers and also the Sierra Club. I have a little further to add to what Mr. Colby and Mr. Muir have already said. What they have said has perfectly and completely set forth the attitude of these clubs. There are, however, a few concrete suggestions that have occurred to me. I have been waiting since the beginning of this meeting for a certain class and their opportunities and rights to be mentioned. We are discussing at great length the automobilists. We have been discussing the ordinary traveler, who has money to come and go; but nobody has said a word for the shopgirl, working for $8 or $10 or $12 a week, and the clerk who may get $12 or $15 a week, and has a beggarly week or 10 days or less.

Now, these parks ought to be open to them. They can be opened to them easily on certain conditions. If arrangements were made whereby the transportation companies, on dates of holidays, and on proper occasions, should give excursion rates to that class of people, and if the concessioners in the valley who have the hotel concessions were required as a part of their concession and a consideration for such concession, to place in the Little Yosemite and the Tuolumne Meadows, say, at first, and later on by Lake Washburn and Lake Tenaya, chalets where ordinary meals of the plainest and most moderate expense could be provided, then anyone of meager means could get in here for a week end or a few days, with a blanket, and enjoy this magnificent region and have a grand holiday and go home having had a magnificent outing. Those things are done in foreign countries. Germany and Austria have an organization of 125,000, to say nothing of disorganized walkers, and France has over 200,000.

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Mr. MARTIN. If you will permit me just a moment in order that there may be spread on the minutes of this conference an expression of the desire of Seattle and Tacoma that this conference next year be held in the Rainier National Park. I quite appreciate that this conference can not settle the matter at this time. We feel, however, that in logic and the geography of things that Rainier National Park is entitled to the next meeting, and further than that, Mr. Secretary, in the utmost frankness, we want to say that we want the meeting because we need the good that it can do. The situation is much the same that was presented to me in a visit to Washington at one time in a remark which Speaker Reed made. We went to secure an appropriation for one of our expositions and we were very much afraid of Mr. Reed, and a small committee of us were sent to meet and conquer him first. He heard our story, the desire for an appropriation, and very much to our surprise he said, "Gentlemen, I am with you, and I will give you my help, and I will say this, that you are the first committee that I have ever seen here in Washington from the Southern States, coming here in an appeal in your 'interests.' Others have come here always in an appeal for their 'rights.'"

Now, Mr. Secretary, Seattle and Tacoma have been quarreling a long time over their "rights." Now, sir, we have come together and we propose to present what we believe to be our interests in the matter and to present them solidly. We have heretofore been in that position that even our own Congressmen shied away from actual support because they were afraid of offending. Now, we are together, and since we are together and present this solid working force, we appeal to the department to give us this opportunity of closer touch and better information with large conditions. We hope it will be possible next year for the conference to meet in the Rainier National Park.

Mr. STEEL. Mr. Secretary, I would like to add, for the city of Portland, for the city of Medford, and for Crater Lake, a good hearty second to this invitation.

The SECRETARY. Well, now, some time ago, through the generosity of an individual, there was something that approached a fitting recognition of the work and life of the distinguished member of the Sierra Club who addressed us yesterday, in the creation of the Muir Woods National Monument, and perhaps, Mr. Dezendorf has something to tell us about that particular reservation or national monument.

Mr. DEZENDORF. Mr. Secretary, it is my honor to have charge of the national monument which it was deemed wise to name after the distinguished gentleman, the president of the Sierra Club, Mr. John Muir. This monument is situated between a broad expanse of the Pacific Ocean and the Golden Gate City, which welcomes the world to the Panama-Pacific Exposition in 1915. It has been my fortune or misfortune to have had charge in the past of the national monuments in the State of Arizona, and while we have not had any appropriation from Con-

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gress for the protection of the national monuments, yet we are expected to do so, and I fail to see why Congress can not understand that it is necessary to have appropriations to protect from destruction or depredation the beauties of the national monuments as well as the parks. I can see no distinction between the two, unless it is that the national monuments are so wonderful and so beautiful that they feel they can not destroy them. The beauties of this park and the others have been described here, but the Grand Canyon of Arizona is beyond description. The tongue of man can not describe it properly. The national monument, the Petrified Forest of Arizona, contains the oldest dead, but once alive things that exist, the petrified trees, which are millions of years old, as I understand from Mr. Muir, who has inspected them, and the Muir Woods National Monument contains some of the oldest living and most beautiful things in the world. I refer to the majestic trees there—the redwoods. But from actual personal experience it is now impossible to properly protect these beautiful national monuments, and I hope Congress will see the necessity of providing for the protection of these monuments at an early date. I thank you and invite you to hold the meeting in 1915 in the Muir Woods National Monument near the exposition city.

The SECRETARY. Now is there anything further that any person wishes to call to my attention before we adjourn?

Mr. PILLSBURY. Just a word, Mr. Secretary. It has only been my pleasure to visit four of these national parks. I would very much like to see some of the others. Next to that I would like to see pictures of them. I was greatly entertained by seeing some of the Yellowstone. I offer as a suggestion that the different ones bring pictures of their parks that we may all gather what information we can of the things we are never to see ourselves.

The SECRETARY. That brings to my mind a suggestion that possibly has some value. I don't know. It is, that there ought to be in the different park hotels collections of pictures of the other parks; advertise the other parks that they in turn advertise you. Perhaps that will be of some value.

Mr. MCSTAY. I would like to just emphasize slightly what Mr. Walker said in regard to the technical side of this proposition. I have the greatest admiration and respect for the Army officer and the Army engineer. Is it fair to take the attitude and position of our good friend, Col. Forsyth, and expect him to absolutely forego his lifelong association with the horse? Is it a fair proposition? Is there not a middle ground that is fair to all of us?

The SECRETARY. Let me try to make clear to you again that I do not intend, necessarily, to follow the advice of Col. Forsyth or Capt. Whitman. I intend to do what I said before. I intend to get from your engineer his report as soon as I can get it and I intend to have Col. For-

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syth and his engineers check it, and then I intend under my official obligation to decide as between any points of difference which may then still exist what I think should be done. If it is necessary to enable me to decide it intelligently to have some one else examine it who is not representing either you or the Army engineers, this will be done. What I am after is the facts, and I am going to be just as critical in examination of the gentlemen opposed to the automobile as I have been in examining those in favor of them.

Mr. McSTAY. The Automobile Club of Southern California, when the Secretary gets to the certain point where his hands are tied—it is going to take money—let me tell you that we are a live organization—not only our southern California people, but California is full of live organizations who are in a position to assist the Secretary in securing these funds, which are absolutely necessary. You put the question to us or made the statement that it would probably be necessary for that $40,000 road. I understand Capt. Whitman's position. Capt. Whitman knows that that lower road is the natural, practical, scenic road. He knows that the expenditure of $40,000 will open up the highest grades of the mountains of the Sequoia Park and he doesn't want to temporize. He wants the proper road opened. I believe he has got the proposition, and I want to say that if the Department of the Interior will avail itself of what assistance we can give in securing the necessary legislation, we will be very glad to take it up good and strong.

The SECRETARY. Don't use that "if." The department will welcome your assistance. I said in the beginning and all the way through that that is what we want. Get busy.

With that we will adjourn.

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PROCEEDINGS

OF THE

NATIONAL PARK CONFERENCE

HELD AT

BERKELEY, CALIFORNIA
MARCH 11, 12, AND 13

1915

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PROCEEDINGS OF THE NATIONAL PARK CONFERENCE HELD AT BERKELEY, CAL., MARCH 11, 12, AND 13, 1915.

INTRODUCTION.

On March 10, 11, 12 there was held at Berkeley, Cal., the third conference of the department officials and other persons interested in the development and administration of the national parks. Two previous conferences have been held, one at Yellowstone National Park on September 11 and 12, 1911, and one at Yosemite National Park on October 14, 15, and 16, 1912. There were present at the Berkeley conference the superintendents of the various parks, the principal Washington officials of the Department of the Interior who handle national-park matters, and representatives of the concessioners, of the transportation companies tributary to the parks, and of independent organizations that have been interested in the problems of park administration. All persons holding concessions in the national parks were invited to be present and all of the railroads tributary to the parks were invited to send representatives. Every important interest connected with the parks, both on the side of the Government and on the side of the concessioners and railroads, was adequately represented. The purpose of the conference was to consider all the questions that arise in the administration of these reservations in order that the department might be able to make such changes in the regulations and to foster such development as might be for the best interest of the public. It should be distinctly understood that the views herein expressed are those of the individuals presenting them, and that the department gives no official sanction to the facts stated or to the recommendations made.

The meetings on the 11th and 12th were held in California Hall of the University of California. The meeting on the 13th was held at the Southern Pacific Auditorium, on the grounds of the Panama-Pacific International Exposition. The department desires to express its appreciation for the courtesies extended by the authorities of the University of California, by the members of the Sigma Chi Fraternity, and by the officials of the Panama-Pacific International Exposition.

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PERSONS ATTENDING THE CONFERENCE.

W. B. Acker, assistant attorney, Department of the Interior, Washington, D. C.

Horace M. Albright, secretary to Stephen T. Mather, Washington, D. C.

T. Warren Allen, Chief of Division of National Park Roads, Office of Public Roads, Washington, D. C.

Arthur Arlett, representing the governor of California, Berkeley, Cal.

A. G. Batchelder, chairman executive board, American Automobile Association, Washington, D. C.

Henry G. Bates, Pacific Telephone & Telegraph Co, San Francisco, Cal.

Thomas W. Brazell, supervisor Wind Cave, National Park, Wind Cave (via Hot Springs), S. Dak.

L. M. Brett, acting superintendent Yellowstone National Park, Yellowstone Park, Wyo.

Chester B. Campbell, custodian Petrified Forest National Monument, Adamana, Ariz.

John H. Carroll, general attorney C., B. & Q. R. R., representing Great Northern Railway and Glacier Park Hotel Co., St. Louis, Mo.

A. D. Charlton, assistant general passenger agent Northern Pacific, Portland, Oreg.

Denver S. Church, Congressman seventh district California, Fresno, Cal.

William E. Colby, secretary Sierra Club, San Francisco, Cal.

David A. Curry, Yosemite, Cal.

W. T. S. Curtis, representing certain Hot Springs lessees, Washington, D. C.

Mark Daniels, general superintendent and landscape engineer of National Parks, San Francisco, Cal.

A. B. Davis, San Francisco, Cal.

George R. Davis, geographer, United States Geological Survey, Department of the Interior, Sacramento, Cal.

Coert Du Bois, district forester, United States Forest Service, Department of Agriculture, San Francisco, Cal.

A. H. Eaton, manager The Kiser Co., Portland, Oreg.

H. W. Edelson, Pacific Telephone & Telegraph Co., San Francisco, Cal.

J. Arthur Elston, Congressman sixth district California, Berkeley, Cal.

Roe Emery, Glacier Park Transportation Co., care of The White Co., Cleveland, Ohio.

Chas. S. Fee, passenger traffic manager Southern Pacific Co., San Francisco, Cal.

Amos A. Fries, Corps of Engineers, engineer officer in charge of road construction, Yellowstone National Park, Yellowstone, Wyo.

Walter Fry, superintendent Sequoia National Park, Three Rivers, Cal.

Howard Greenley, architect, New York City.

F. L. Hanna, general agent Santa Fe System, San Francisco, Cal.

Ford Harvey, Santa Fe System, Kansas City, Mo.

George Hayworth, Chief of Field Division, General Land Office, Department of the Interior, San Francisco, Cal.

F. J. Haynes, president Yellowstone Western Stage Co., St. Paul, Minn.

J. R. Hickey, vice president Yellowstone Western Stage Co., St. Paul, Minn.

A. D. Hopkins, in charge forest insect investigations, Bureau of Entomology, Department of Agriculture, Washington, D. C.

W. L. Jepson, associate professor of dendrology, University of California, Berkeley, Cal.

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Joseph N. Le Conte, president Sierra Club, Berkeley, Cal.

O. W. Lehmer, general manager Yosemite Valley Railroad, Merced, Cal.

R. B. Marshall, Chief Geographer United States Geological Survey, Department of the Interior, Washington, D. C.

T. H. Martin, secretary Tacoma Chamber of Commerce, Tacoma, Wash.

Stephen T. Mather, assistant to the Secretary of the Interior, Washington, D. C.

C. P. Meinecke, Office of Forest Pathology, Bureau of Plant Industry, Department of Agriculture, Washington, D. C.

Enos Mills, Estes Park, Colo.

Guy E. Mitchell, Chief Executive Division, United States Geological Survey, Department of the Interior, Washington, D. C.

James K. Moffit, regent University of California, San Francisco, Cal.

H. D. McGlashan, district engineer, United States Geological Survey, Department of the Interior, San Francisco, Cal.

John Otto, custodian Colorado National Monument, Grand Junction, Colo.

W. P. Parks, superintendent Hot Springs Reservation, Hot Springs, Ark.

Mrs. E. T. Parsons, Berkeley, Cal.

A. F. Potter, Associate Forester, United States Forest Service, Department of Agriculture, Washington, D. C.

O. R. Prien, chief ranger, Yosemite National Park, Yosemite, Cal.

S. F. Ralston, supervisor Glacier National Park, Belton, Mont.

John L. Reese, Ashford, Wash.

Thomas Rickner, superintendent Mesa Verde National Park, Mancos, Colo.

Richard Schaffer, representing E. Lounsbury & Co., Yosemite, Cal.

W. Gillette Scott, executive secretary Inyo Good Roads Club, San Francisco, Cal.

W. M. Sell, sr., Raymond, Cal.

W. M. Sell, jr., Yosemite, Cal.

John J. Sheehan, supervisor Mount Rainier National Park, Ashford, Wash.

David A. Sherfey, resident engineer Yosemite National Park, Yosemite, Cal.

Mrs. John D. Sherman, General Federation of Women's Clubs and chairman of conservation department, Chicago, Ill.

R. A Sneed, superintendent Platt National Park, Sulphur, Okla.

Gabriel Sovulewski, supervisor Yosemite National Park, Yosemite, Cal.

Will G. Steel, superintendent Crater Lake National Park, Medford, Oreg.

J. J. Sullivan, entomological ranger, Bureau of Entomology, Department of Agriculture, Washington, D. C.

Thomas Thorkildsen, Los Angeles, Cal.

W. D. Thornton, Yosemite, Cal.

P. J. Walker, president California Automobile Association, San Francisco, Cal.

John Weightman, Kalispell, Mont.

Benjamin Ide Wheeler, president University of California, Berkeley, Cal.

George Whittaker, Yellowstone Park, Wyo.

John H. Williams, Tacoma, Wash.

Robert S. Yard, Department of the Interior, Washington, D. C.

Richard R. Young, assistant to the general superintendent of national parks, San Francisco, Cal.

Charles M. Ziebach, superintendent Sullys Hill Park, Fort Totten, N. Dak.

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MORNING SESSION, MARCH 11.

The conference was called to order at 10 o'clock a. m. by Mr. James K. Moffit.

Mr. JAMES K. MOFFITT.

Before the more formal address of welcome, I have been asked to greet you on behalf of the board of regents of the university, and I do most heartily. We feel that it is most fitting to have you meet here on our campus at Berkeley, and this great university in its academic work is indeed your colaborer in all of the sciences—engineering, botany, geology, forestry, and entomology. But it is only as far as the university succeeds in coordinating and standardizing these many activities, in so far as she is able to create standards, achievement, and research, that she believes that she fulfills her mission as a teacher, as a servant of the State and the Nation. On another side, too, we claim kinship with you. In the earliest days of the university, those days that I think we can name best by calling them the days of Prof. Joseph Le Conte, this university has been concerned with the love of the mountains, the mountain lakes, and the mountain parks of this glorious State. We feel justified that from the university, as the center, has gone out the stimulus to the people of the State that has made the people as a whole love the outdoor mountain life of the State in such measure, a love that has found practical, forceful expression in these organizations of later years, like the Sierra Club of California.

I do not wish to take any thunder from the speakers that come after me, but I can not help calling attention to the happy occasion of this meeting. Now, your honored Secretary of the Interior, Hon. Franklin K. Lane, his former assistant, now one of the members of the Federal Reserve Board, Mr. Miller, and the present assistant in charge of national parks, are all sons of the University of California.

It is my great pleasure and privilege to have known these men and to have been a fellow student with them here at Berkeley. I now take pleasure in introducing to you the head of our university, President Benjamin Ide Wheeler, who will formally welcome you to the campus and to the university.

Dr. BENJAMIN IDE WHEELER, President of the University of California.

I am glad to see you here. I am here to give the formal welcome. which means the cold welcome, I suppose, the formal and the cold being of about the same value. What I want in this address of

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welcome is that it shall be brief as possible. We have attended conferences and teachers' institutes in Fresno and some other places down the valley, where they have talked to us for half a day welcoming us to what they call "Our city." There is no need of my trifling with you at all in any such way. You are here for serious business, as serious men, and you know that I am glad that you are here and that this place is at your disposal. If there is anything we can do here for you, it shall be done.

It is not here alone that you are welcome. You are welcome to the great heart of the University of California, spread all throughout this State. This university is the chief pride of this State. If you say anything against it, you will be drummed out of the State. You better not say anything against it until you are safely over the Reno frontier. The State knows perfectly well that through all its attempts, failures, and partial successes there is one thing that it has received credit for, certainly, unquestionably, and that is the university. It is the chief pride of the State deservedly. It is a mass of scattered buildings. You see the new in the form of bright, white granite rising upward from the midst of the older buildings. It has been obliged to provide itself with room here because it has been growing very rapidly. It has outgrown utterly its old equipment. In a dozen years it has changed from what you would call a small college to a university assuming to give instruction in all the various branches of science.

It is widely differentiated. It exists not alone here at Berkeley. It has a biological station, for instance, at La Jolla in San Diego. It has a great and rapidly developing station at Riverside for the study of citrus fruits, their growth and diseases; there is also located there what we call the graduate course in semitropical agriculture. At Santa Monica there is a forestry station. Coming up toward the north at Fresno we have a farm of fifty-five hundred acres that was given to us for agricultural education. It is not perfectly clear how we shall handle that in the future. It is used in part already as an experiment station. Sometime it will be the site of a branch of some kind for agricultural education. The Lick Observatory on Mount Hamilton is the graduate department in astronomy of this university. It was placed in our hands by the State years ago. The State now supports it. It bears the name of Lick because Lick provided it with appliances and a telescope.

At Davis, 25 minutes out of San Francisco, we have a farm school and a place where our agricultural students can have about 6 months of their course for the study in particular in the subjects that can be only taught in the presence of a farm with its equipment. Over in the city we have all sorts of institutions, a school of pharmacy, a

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school of dentistry, a school of law, and a school of medicine. That, particularly, in recent years has developed greatly, and has a strong foundation upon modern requirements in medical education. We are expending about $200,000 a year as a subsidy for the school of medicine. We are spending $500,000 a year, a little over, for agricultural education and research. This is an institution that can hardly tell what its range is without referring to numbers, and I know how delusive numbers are.

Here on the grounds of the university you will see floating about in all parts hundreds of students. Look into the library building between hours and you will find four or five hundred students sitting there reading. There are fifty-three hundred students right on this campus now. For instance, over yonder in North Hall, you will find at this particular hour eighteen hundred students in the classrooms. There are fifty-three hundred of them in attendance at the university proper. We have what we call a graduate school and an undergraduate course. It is the largest body of undergraduate students anywhere in the United States by a considerable amount. Our graduate school numbers 700. Taking it all together, the number of students we are dealing with, counting our summer sessions, and the different persons that are involved, are over 9,000. Our number of students this year may be said to be slightly over 9,000. We are urging a further agricultural extension course, and our regular course in the university extends to about 75,000 people here in this State. That is our range so far as figures will show it. Wherever the university is we welcome you to it. With all of its purposes and with all of its outlook, I welcome you to it. I know perfectly well that we have your sympathy, and we are trying to do for all what you are trying to do.

The university is a great deal bigger thing than it used to be. The concept of the university has grown in years enormously. We are no longer training callow boys who are spending four years of rollicking. We are no longer undertaking to create a few persons who shall regard themselves as gentlemen, members of the four leading professions; but we are engaged in working for the community and are trying to bring to that community succor and help according to its needs. That is the movement everywhere. Whatever we are trying to do to-day, we shall try to do more somewhere else a few years hence, because, in the adaption of education to the needs of human life and the needs of society, great things take place all the time. We can hardly keep up with progress. We are undertaking to do for these students that come to us what it seems to us best to do under the circumstances, and there is spread abroad throughout all of this student body an atmosphere of willingness and a desire to help. We are a cooperative household, and what we

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are trying to do is for all. We are trying to do the best we know how. We give you all a hearty welcome here.

MR. MOFFITT.

The name of Stephen T. Mather is not a new one to us here in Berkeley or in California. Mr. Mather's business activities have taken him for many years to Chicago, but, as in many cases, absence from California has only brought closer to him its needs and has brought him more closely in touch with those who have had the activities of the State in charge. The University of California, the alumni, and the students who have passed through Chicago going East and coming West have had no stronger friend than the Hon. Stephen T. Mather. He has been a man you always felt ready to call upon for counsel and aid. It was a source of great gratification when he, through his love for the mountains, coming here year after year and making extended trips throughout the Sierras of this State, consented to enter the national service.

I now take pleasure in introducing Mr. Stephen T. Mather, Assistant to the Secretary of the Interior, in charge of national parks of the United States.

STEPHEN T. MATHER, Assistant to the Secretary of the Interior.

When I asked Secretary Lane if I could hold a conference of the park superintendents, of which two had already been held in previous years, 1911 and 1912, my thought naturally turned here to Berkeley. I felt that here was the place, especially this year, with the thoughts of the country on the great exposition, to hold this conference, and that this would be the natural place for all of the superintendents to come. When I telegraphed out here and asked permission of President Wheeler to use one of the university buildings, or one of the halls for this purpose, he responded most heartily. I want to now publicly thank him for giving us this opportunity to meet here. I would like to tell all of you a little bit more about the atmosphere of this wonderful institution. I want to thank also the members of my own fraternity, who so willingly threw open their house as an abiding place for our superintendents, supervisors, and members of the official party from Washington. It has been said that the fraternity lives unto itself. I think this little incident alone is proof of the fact that the college fraternity has broadened out, not only in university life but in public life generally. The boys in this case gave up their house and went elsewhere, and gave us the opportunity to have that peculiar home life that otherwise we could not enjoy.

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We expect as we meet there day after day and have our meals together around the board, to develop that same fraternity life, and make a fraternity that will be of value to us personally and to the Nation as a whole.

I want to read a telegram which I have just received from my honored chief, Secretary of the Interior Franklin K. Lane:

Please convey my heartiest greetings to the members of the conference. I feel that this opportunity for the exchange of ideas and suggestions will be of great benefit in our effort toward betterment of the national park service, and I have great hopes that the result will be to make the service much more efficient and to make our wonder places more truly national playgrounds and more easily accessible to all our people.

I have another telegram from the American Civic Association:

The American Civic Association sends hearty greetings to the national park conference, with earnest wishes for sessions of great profit to the Nation in the larger administration and exploitation of the great scenic area set aside for national recreation. We stand ready to assist in all movements that will encourage a larger use of our parks by the people of all the States of the Union. Let us make them service parks in every respect.

It is with some diffidence that I come before a conference of this kind, before these superintendents, many of whom are long in years of service in their work, and particularly in view of the fact that I have only been a little over a month in the national service. The only excuse that I can plead is that I have had some interest and love for all of the parks, and had visited some of them before I assumed the duties of my office. And I am now trying to make an extensive study of the tremendous problems that have been coming before me. All of the problems that are arising are intensely interesting. Each day brings up something new and in delving back through the national-park records in the Department of the Interior many interesting propositions are brought to light, nearly all of which offer opportunities for constructive work.

I have been very fortunate in this work in having the very hearty support of all my associates in the department. I am just realizing for the first time what a wonderful fund of information there is right there in Washington that has been gathered from all over the country. The United States Geological Survey, which is doing the great work of mapping out our whole country, has many men who come in during the winter months from all over the country. If I want to find out something about Mount Rainier (and Mount Rainier is a wonderful spot in itself, and no man knows it more thoroughly than does John H. Williams, who has written that great story about it), I can call on one man who has done the topographical work on the north side, others who have done it on the south side, the west or east sides, and get the information that I want.

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When the question arose of installing a power plant near one of the lakes in Glacier National Park members of the Geological Survey were ready to furnish me with a report on the amount of water available as a result of stream measurements made through a long period of years, besides giving me a clear idea of the proposed site of the plant. Again, through the Bureau of Entomology of the Department of Agriculture, I could learn in what portions of our own Yosemite dangerous insect pests were attacking the forests, and so I might go on reciting case after case where I have been able to obtain information from other bureaus of the various executive departments which has aided me in my administration of the national-park system.

My own enthusiasm has also been kindled by the interesting material which has come to me from the employees of the department, several of whom have been working on nation-park problems under half a dozen different Secretaries.

The Secretary of the Interior directly administers the parks. The Secretary is personally responsible; but so many different duties devolve upon him that it is hard for him to find time to devote to the parks. As Assistant to the Secretary he has delegated me to those duties which it is physically impossible for him to perform. He can not undertake them in addition to the other tremendous problems that are pressing in on him.

I have had some thoughts in regard to the future of the parks, and I am trying to meet the problems as they come up. But I realize that we must all work together, whether it be our own officials representing the Government, the concessionaries, or the railroads that are reaching the parks. The parks must be, of course, much better known that they are to-day if they are going to be the true playgrounds of the people that we want them to be. There is much that can be done in making them better known. There are many ways in which they can be brought home to the great mass of eastern people. Something along that line has already been done. We are fortunate in having, outside of the Government itself, a great many people who are giving freely of their time and energy to this end. Three or four of the leading lecturers of the country are taking for their themes the national parks, and several powerful organizations, particularly the General Federation of Women's Clubs, are devoting their time and energy unselfishly to the end that these great playgrounds shall be made better known to all the people.

I am sure that the Government is going to have, through such persons as these, a tremendous amount of help. These people, just from their love of the mountains and the open country, are willing to give much of their time and attention to this matter, and can do a great deal of good. I know of one man alone who has given practically half of his time in a most disinterested way to make our parks bet-

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ter known. There have been writers in the leading magazines and weeklies who have given their personal attention to stirring people up to the possibilities of these parks and have given first-hand information regarding them. That work has already borne fruit. In this connection I want to specially mention Mrs. John Dickinson Sherman, chairman of the conservation committee of the General Federation of Women's Clubs, who has worked unceasingly on behalf of the parks for several months. The pamphlet she has issued on national parks is extremely valuable, and the work she has done has already reflected itself in the way of activity in the different State organizations of women's clubs. A man from Boston has written me that he has had so much success with national-park lectures that he confines himself largely to this topic instead of devoting his time to different subjects. I think it is the duty of all who are in the Government service to do their part toward turning the thoughts of people in their direction. To the superintendent comes a great burden of responsibility, because it is largely his duty to see that every tourist goes away from the park in the right frame of mind.

The Secretary himself has made it very clear that the question of creature comforts is important in our parks. Scenery is a splendid thing when it is viewed by a man who is in a contented frame of mind. Give him a poor breakfast after he has had a bad night's sleep, and he will not care how fine your scenery is. He is not going to enjoy it.

Now this is only desultory sort of talk. I have not had any time to prepare a set speech. Our little official party since it started from Washington has been on the go every minute.

It may be of interest to you to know that the next man who is to speak to you is an enthusiastic member of the Sierra Club, a great lover of the parks, and a man whom we are sure, when he gets down to Washington, will be of very great service to us in the Halls of Congress; a man whom we are going to call on frequently when it comes to the solution of national park problems. There are many things we have coming up in Congress. During the short time that I have been in the office I have had to make two or three visits to Congress in connection with park problems; and it was pretty strenuous work. When Hon. J. Arthur Elston comes down there we are going to keep in close touch with him. I now have the pleasure of introducing him to you. He will speak to you on the value of our national parks.

HON. J. ARTHUR ELSTON.

Mr. Secretary, ladies, and gentlemen, Mr. Mather has put me to some slight disadvantage by his announcement of my subject. I feel very much like the prisoner who came up before the judge, who asked

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him, "Why did you hit that little man?" The prisoner replied, "Judge, suppose I called you a big Irish slob?" The judge says, "I am not." "Suppose I called you a German slob?" The judge replied, "I am not a German slob." "Then, suppose I call you the kind of a slob that you are?" I feel somewhat as if the name of that man might be applied to me, but I might be able to get out of it something like the prisoner did in a certain case that I read of. The attorney for the defendant pleaded very strenuously for him. He said, "Your Honor, this man only put his hand through the window and took the jewels out of the case. It was the man's hand that committed the offense, and you can not blame the ego for what a mere limb did." The judge scratched his head and said, "I think you are correct about that; I do not believe the man ought to be blamed for what he did, so I will sentence the hand and the arm to State's prison for 10 years. Will that be all right?" Thereupon the prisoner unscrewed his wooden arm and hand and left the court room a free man.

I am not going to make any extensive comment upon a subject about which you know a great deal more than I. I merely want to say that I am most happy to greet you here in Berkeley. President Wheeler has given you a welcome to the university, and I welcome you to a place which has a peculiarly sympathetic atmosphere. This is the place where John Muir, once, I suppose, the greatest exponent of national parks, made his headquarters. This is where he had his particular group of intimate friends. This is where William Keith pictured all of the beauties of one of our national parks, and the great natural landscapes all over this coast. Here we have had Prof. Joseph Le Conte, who has made pathways over some of the most inaccessible mountain regions in California. Here we have William Colby, who is a member of a unique organization which has advertised the mountains of this State and the United States to a degree that no other agency has done. The Sierra Club has done a great deal to bring to the attention of the public the natural beauty spots of this State and other places on the Pacific coast. It has been a great agency for the dissemination of information regarding our national parks and places of beauty. Perhaps it might be said that the Sierra Club is the foundation of the idea for the establishment of national parks themselves.

I have not had very much to do with going about in your national parks, but I have always been a great lover of the out of doors; and it has been my great pleasure to learn from many intimate friends of these national parks the laws that create them, and matters of that kind, with which I am not very familiar; but I want to tell you right now that, as far as lies in me, as far as lies in the power of any first-term Congressman—you who have read Mark Twain a great deal

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know what he says about a man of that kind—I will do the very best I can for the furtherance of those things that you are striving for now; I will do all that I can to help you along. I hope to collaborate with Secretary Mather in any program that he has, because I realize that a Congressman can look to him as the possessor of first-hand information on all problems relating to national parks. If I went to anybody for information or for guidance in this matter, the first person I would go to would be Mr. Lane, or Mr. Mark Daniels, both of whom are close to me, and we are proud of both of them.

That is about all I have to say to-day. I can not instruct you in subjects about which you know more than I do. I believe that this conference will result in great benefits along the line that Mr. Mather just spoke—that is, the publicity line. I believe it will be a great day for the national parks when they are brought to the attention of all of the people, who will be taught to know that they are their playgrounds and that they can go there and enjoy them. I think that one of the greatest benefits to come from this conference will be to give that publicity to the people of this country. I thank you very much.

Assistant to the Secretary Mather.

I will say that from our congressional delegation from California we have already received valuable support for problems regarding national parks. Congressman Church is enthusiastic and is much interested in national parks; Congressman Raker has helped us materially on questions that have come up, and Congressman Kent, particularly, has also helped us in two or three vital matters at a time when a great deal of work had to be done. I feel sure that we have in Congressman Elston a man who will be of just as much help to us.

I consider myself most particularly fortunate in having come into the office with a general superintendent and landscape engineer in charge such as Mr. Mark Daniels. This was a new office which was created only last year by Secretary Lane. In fact, I believe my predecessor, Dr. Miller, was the one who first suggested the idea to Secretary Lane of having Mr. Daniels act in taking up this important work. There have been many plans suggested for a park bureau in times past, and much agitation has taken place before Congress for a park bureau; from the start already made we are pretty well along toward an organization of this character.

Mr. Mark Daniels first took up his work of handling the Yosemite National Park at the munificent salary of $10 a year. He took it up

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at a time when it was a pretty difficult problem to handle, just when the Army was retiring from the park, and when it was necessary to substitute a civil administration for it. Since that time he has taken up this position of general superintendent and has applied himself to the work very enthusiastically. It was impossible under the law to have him in Washington, so he is located here in San Francisco. He is out here in San Francisco in close touch with many of the national parks, very much more so than he would be probably in any other State.

He certainly is in very close touch with all of the parks on the Pacific slope. In fact, all our parks are western parks. The new Rocky Mountain National Park just created by act of Congress in January is the most easterly of the greater parks. It is only 30 hours from Chicago, and therefore nearer to the Eastern States than any other park we now have.

I am going to call on Mr. Daniels to tell us something about national-park development as he has already seen it and as he sees it looking into the future, because he is one of those men of business who is also an idealist and interested for the future. He deals with these problems not only for the present generation, but for future generations.

MR. MARK DANIELS, GENERAL SUPERINTENDENT AND LANDSCAPE ENGINEER.

Before I enter into any discussion of the problems regarding the parks or a plan of a campaign for developing them, I would like to say a little something about the parks in general.

It seems to me rather a strange thing that the parks, like all other things which involve idealism or estheticism, are constantly being challenged for an excuse for their existence, while at the same time hundreds of things less worthy are stalking the land. The parks have two justifications: One is esthetic, and, strange as it may seem to those who have been constantly crying for an abandonment of the expenditure of money for their support, there is an economic justification. Economics and esthetics really go hand in hand. They are so intimately related that it is impossible to disassociate them, which is the mistake that is so commonly made by those who hold the purse strings. The economists during the period of the Cameralists in Germany repeatedly stated that the economical development of a country was very well measured by its esthetic development. The development of the arts, the development of social sciences, is a good measure of the development of economics. As a specific instance of the economic value of our national parks I would like

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to point out something which perhaps you have heard a great many times, that there are four hundred to six hundred million dollars which go to Europe, being spent by American tourists in Europe for the purpose of seeing scenery. Mr. Horsburgh, of the Southern Pacific, several years ago, spent several months making an investigation of the amount of money that goes to Europe for tourist travel, and he told me that it was not less than $500,000,000. If it were not for the fact that the European has developed the capacity and facility for catering to such a point that it has become with him an art, European resorts would not be so popular, and yet they are very inferior to what can be seen at home for less money. The amount of money that leaves this country by tourist travel is all in coin—it is in cash. I read not long ago an article on the gold reserve, and in it it was clearly pointed out that the tourist travel from the United States very materially affects the gold reserve of this country, due to the fact that money taken out is all in coin. It is not in the form of an exchange. In purchasing scenery from the European we are not spending money there which will be turned back to us in the form of an exchange trip from the European, because the European very seldom comes to this country for scenery.

The parks in general, I think, should be classified so as to properly work out an administrative and development scheme. We are constantly having applications submitted in Washington for the creation of national parks out of areas which are in no way national in their interests. We have city and county parks, State parks, and National parks. Without discussing the characteristics which apply to any of these in their particular category, I might say that national parks should not be created except in those areas where there are features of national interest and where there are bits of scenery or natural phenomena which would attract people from different parts of the country. The function of our parks, either city and county, State or National, is the supplying of playgrounds or recreation grounds to people, furnishing the mental as well as the physical stimulus to tired and exhausted workers. I think the most important feature in the national parks is the educational one. I think that is the one thing that makes a distinction between city and county, State and National parks. In a national park the scenery or natural phenomena is of such a character as to be largely educational. I am sure that no one can go through Yellowstone National Park after hearing the roar of the Hot Springs and seeing the paint pots without feeling that his education has been materially augmented. Nor can he leave Yosemite, after spending enough time in there to see what glacial action was, to see the highest waterfall in the world, the greatest trees in the world, without feeling that his mental horizon has been broadened materially.

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If our national parks are ever going to be a success, or if we are going to put them to the use for which they were set aside, in other words, if they are going to bring in dividends, not only in money, but in health, happiness, and increased intelligence, they must certainly be visited by the people; therefore, the first problem to be considered in their development is how shall we get the people to the parks. There are three conditions which determine tourist travel. One is transportation facilities, the second is publicity, and the third is accommodations. We will never get tourists into our parks unless the tourists know that there are parks; therefore, we must have some method of disseminating information. After they get that information they will not go unless there are adequate transporation facilities and good accommodations at the park. The tourists, 99 per cent of them, at least, travel on the line of least resistance. They go where the transportation facilities are good and where the accommodations are good. I venture to say that 75 per cent of them would travel 5,000 miles to stop at a mildly interesting park that had excellent accommodations and transportation, which was first class, rather than to travel 500 miles to a park full of natural wonders which was almost inaccessible and where one could not get accommodations except a cot under a pine tree and a diet of bacon and beans. The reason that Switzerland has attracted the tourists of the world so much is not only the fact that she has magnificent scenery, but she has advertised it and she is inhabited by a race of innkeepers. It is possible to go to Switzerland and stop at chalets throughout the entire country where the accommodations are good and the food is excellent; so that people from the surrounding countries can go to Switzerland for a very small sum of money and spend their vacations there. We have mountain scenery in the State of California which, in the opinion of many people who have traveled in many places, is superior to the scenery of Switzerland, and yet if you wish to see it it will cost you from $300 to $750, a sum that is entirely out of the reach of a vast majority of people who would like to go.

Therefore we must have some plan for the development of the accommodations in our parks. The Secretary has taken up the question of organizing an efficient bureau of information. The bureau of information will be operated in such a way as to disseminate that information we wish to go into the hands of the people. He is also taking steps to improve the transportation facilities to the parks. My particular function in this work is the development of the parks themselves. What is now under consideration is the business of establishing three classifications of accommodations in the parks: (1) The hotel or the mountain chalet, where the tourist sleeps and dines; (2) the permanent camp, where

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the tourist sleeps in a tent and eats in a dining room; and (3) the camp where the tourist sleeps in a tent which he rents for the night and where he cooks his own food. I want to point out some of the advantages of having these three different kinds of accommodations. There are people in the Eastern States, where the population is densest, who would like to come to these mountains and our parks, nearly all of which are over a thousand miles from their homes. These people go to the office of the railroad company and find out the cost of a railroad ticket; then they begin to investigate what it will cost them when they get into the parks. That is where they have to stop. They can not afford to pay $8 a day. If we had these three types of accommodations—the hotel which gives a room and board, the camp which furnishes a tent and dining room, and the camp which also furnishes a tent with a stove and furniture, so that the tourist can purchase his commodities and food at the village store—we would reach almost every class of possible tourists.

I discussed this matter in Glacier National Park with Mr. Hill, of the Great Northern Railway. That road tried it out and rented a tepee to tourists at the rate of 50 cents a night. A few hundred feet from the camp was a store in which the tourists could purchase 5 cents worth of coffee, 5 cents worth of bacon, and a few slices of bread. Every one of these camps was filled—every one of them. There were people who came to that park who got their board and lodging for 85 cents a day. Think of what that would mean if you could get it advertised throughout the East. The school-teacher of the Atlantic coast, whose dream for years and years has been of a visit to the Yellowstone National Park, the Yosemite Valley, Mount Rainier, or Crater Lake, would be able to come out here at a cost here of 85 cents a day, which would be cheaper than she could live at home. So, then, there is some possibility of saving to some extent on the transportation. I have heard from Europeans many a time that the reason they go to Switzerland is because they can plan their vacations there cheaper than they can live in their own country, and thereby save a part of the cost of their transportation.

There is a fourth class of tourist for whom accommodations are necessary—the tourist who comes in with his own camp. He takes his own camp. He does his own cooking and he takes his own horses. If he is wise, he takes them right on through the mountains. In the Yosemite Valley there are times when there are five or six thousand people congregated at one time. That community ceases to be a camp; it becomes a village. It can no longer be administered or looked upon in the light of a camp. It has its municipal problems. There are many incorporated cities in this State and in the United States that do not have 5,000 in population. This village has the

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population of a municipality. It must have a sanitary system, a water-supply system, a telephone system, an electric light system, and a system of patroling. There is no instance in the United States of any village that grew to any size without some forethought, without some planning, that did not turn out to be an ugly repellent object. For that reason, if for no other, it is absolutely essential that we take care of the villages in these various parks.

If these three departments are going to be thoroughly developed, it will undoubtedly result in an attendance to the national parks which will probably be four or five times what it has been in the past. That means that Yosemite Valley will have within the next 5 or 10 years, at certain seasons of the year, on the floor of the valley from 10,000 to 15,000 people at one time. That brings it almost into the category of cities. There is no doubt that Glacier National Park, which in four years has developed in its attendance from 2,500 to 15,000 per annum, will in the very near future be in a condition which will absolutely demand some sort of a civic plan in order to properly take care of the people who visit it. The Great Northern Railway estimates that there will be 35,000 people in the park this year, so Yellowstone Park ought to receive more than 35,000. Yellowstone Park will probably take in 40,000 or 50,000 this year. I merely mention this to point out the inevitableness of creating villages in the parks. Our plans are now being drawn to accommodate villages of populations which have been determined or predicated upon the development of growth curves. We have plotted out the attendance at each park, and plotted the maximum population each year, and from that we get a sort of a practical or sensible guess as to what the population may be at some future time.

We have now planned a village for the Yosemite Valley and are working on the village for the Crater Lake National Park, and we expect this spring to take up a village plan for Mount Rainier and Glacier Parks. If a plan for the physical development of any area, as well as a national park, is to be in any way successful or practical or efficient, it has got to be functional. In other words, it must be so drawn that it suits the various conditions—not only the topographical features, but all the physical conditions. Therefore, before we could plan the villages it was first necessary to make a very careful and thorough study of the parks and determine from which direction the majority of the travel would come, at what angles the tourist roads came into the park, whether any of them could be used, and from what central point the larger portion of the park could be seen and visited with the least amount of travel. We have completed a preliminary study for five parks—Sequoia, Yosemite, Crater Lake, Mount Rainier, and Glacier. We have complete preliminary studies

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for those. We have complete village plans for the Yosemite Valley, including a study of the architectural character of every building that shall go into the village for the next 10 years.

The building locations are carefully thought out. They are selected and the type of architecture is determined in the light of a careful study of the best arrangement of the buildings and for picturesqueness. We are now engaged on Crater Lake buildings, and will finish the villages for the five parks, for which we have already complete preliminary studies, probably by the end of this coming season.

This work is all very well on paper; it is very interesting and very fascinating, and it may probably take us a long time to get sufficient money from the Government. The only thing that makes it worth while is the hope, or the assurance, that some day, if not in the immediate future, these plans will be executed according to their design. We can not get a sufficient appropriation at present from Congress to develop these plans and put them on the ground as they should be, therefore we are working for an increase in attendance which will give us a justification for a demand upon Congress to increase the appropriations that are necessary to enable us to complete these things. The whole problem then resolves itself into the necessity for support and for attendance on the part of the people. When Secretary Lane first began to consider these plans things looked rather hopeless, but now they have begun to brighten up. In order to get the results we wanted we needed a publicity expert. We needed a good man. The Secretary of the Interior is occupied with problems that are of such magnitude that the importance of the parks dwarfs to insignificance. It was known that he would not be able to give it his personal attention, so when it was announced that Mr. Stephen T. Mather had been appointed Assistant to the Secretary I think a sigh of relief went up from every man who has any interest in the national parks. In the short time that Secretary Mather has been connected with the parks I have begun to see that the clouds are opening and that we will have all of this work well under way, and we will have sufficient construction done by the end of this year to justify our going before Congress with a demand for an appropriation which can not be denied.

Assistant to the Secretary Mather.

This evening, in this same hall, we will have a talk by Mr. R. B. Marshall, chief geographer of the United States Geological Survey; also by Mr. Enos Mills who was instrumental in bringing about the creation of the Rocky Mountain National Park. The meeting this afternoon will be in the Chemistry Building at half past 2.

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It probably will not be a long session. To-morrow evening we are to have a reception under the auspicies of the ladies of the Sierra Club at the Sigma Chi Fraternity House at 2345 College Avenue. To-morrow General Superintendent Daniels will preside over the conference and we will have talks from those in charge of the different parks, giving some of their experiences. The conference will be very valuable to all of us. Saturday will be national park day at the exposition. Some of our best addresses are to be saved for that day. We will be received by the president of the exposition, and we hope to make some impression upon visitors to the exposition through the fact that the day is set aside as national park day.

We have a little time left of the morning session, so I will call upon Mr. Ford Harvey to speak now. The work that we have before us regarding these parks and their proper management is most interesting. It will be particularly interesting to have Mr. Harvey speak to us on account of the many years of experience he has had with the Santa Fe Railroad Co. I have traveled over the Santa Fe road for many years and stopped at all of its various caravansaries. The Swiss have learned the art, as we know, of caring for people. It is in the blood, perhaps. Their fathers and grandfathers before them have been innkeepers. They have learned to realize that the comfort and pleasure of their guests are always deserving of their primary consideration, money making being only incidental. I think this applies to the Harvey system. Mr. Harvey's father started this wonderful development, and Mr. Ford Harvey has advanced it. I want Mr. Harvey to tell us just what he thinks of some of the problems that we have before us.

Mr. Ford Harvey.

Gentlemen, you are not to blame for what you are about to suffer; neither am I. When honored by your chairman with an invitation to address you, I replied by letter that I was totally inexperienced in speaking and could not talk. His response was a telegram reading:

Many thanks. Appreciate your willingness to speak.

I have had no experience in hotels in national parks, and for that reason I can advise freely. My observation is that the man without experience can give most often the best advice. For 10 years we have operated the Hotel El Tovar at the Grand Canyon of Arizona. The Grand Canyon is not a national park, but it ought to be, and I hope it soon will be. For that reason it is a fact that I have had no experience in hotels in national parks except as a guest. I think Mr. Childs would be much better fitted to address you on this subject than I am. Mr. Childs is a smart fellow, as well as a good fellow, and doubtless would be able to make himself understood.

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I am doubtful as to the lines my discussion should proceed on, having had no opportunity to talk with anyone about it, but the detail of hotel operation is much the same everywhere, and I will not undertake to discuss it.

I was much impressed with Mr. Daniels's remarks. In fact, he covered the subjects probably as well as anyone could. I have contributed to hotels on several occasions. The situation is entirely different abroad from what it is here, as Mr. Daniels has remarked. I do not remember any national parks on the other side. The whole of Switzerland and all of northern Italy is a park, and apparently there are hotels there that have been centuries in development. Our propositions are practically embryonic. Mr. Daniels is quite right about the scenery. There is no such scenery abroad as we have. There is no Yosemite, and no Yellowstone; there is no Grand Canyon; but everything is done for your entertainment—everything of that kind is studied to bring about your enjoyment. Here those things are absent. I think California is making probably the greatest step of any of the States toward overcoming the roads difficulty. California will get her reward.

Your hotels are a different proposition. I think, Mr. Chairman, that one great mistake in regard to national parks is to consider these various factors of service as concessions. They really are more. They should be there more as agents than as concessioners. The difficulty is that as a general proposition in our parks to-day the man who is operating the accommodation for the service of the public is regarded as if he was there simply to make as much money as he could out of it. He must be watched. As long as that attitude is held trouble will arise that you will never be able to get entirely away from. Our proposition is in the development stage. I can only speak of my own experience.

There is one feature that impressed me when Mr. Daniels was making his talk. A good hotel is a good hotel wherever operated, just as a good man is a good man wherever you find him; and anyone who has anything to do with the operation or ownership of hotels knows how much the man has to do with its success or failure. I think that is probably so of any business, but it seems to me to be more so in the case of a hotel—regardless of the fact that after a man has made a failure of everything else he usually thinks he can run a hotel. The personal element is recognized in the hotel business. The first thing, therefore, in the problem is the man. He must be a man who commands your entire confidence; but let me say right here that I have no aspiration, nor any expectation, regarding hotels in national parks except that of the enjoyment of them. What I now say here is to be considered entirely impersonal, and I hope you will all take what I say that way.

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In my opinion the hotels in each national park should be in one man's hands; he should not be there simply with a license to get as much money as possible, but should have a definite obligation and responsibility in the way of satisfactory service. It is no small undertaking to do this properly. All classes of people visit our national parks. That is what they are for. Many do not care what they spend, or do not care what it costs if they get what they want. Others are not so particular what they get if it does not cost too much. They must all be taken care of if the arrangement is to be successful. The initiative skill and the capital are required. They must be compensated either directly or indirectly.

In the past much development has been done by those whose interests have been served indirectly, like the railroads. The railroads have not all been satisfied with the results. Necessarily the investment must be large and the organization adequate; no good man or concern will go into it unless the conditions are all right. The Government is the proprietor and must control. It is entitled to and should require every assurance as to the nature and extent of the accommodations, the character of the service, the charges, and all those fundamental conditions surrounding the service of the public; but, on the other hand, the arrangement should be mutual, and when its agent, who is required to do these things, does them in a broad and satisfactory way, he must have the full cooperation of the Government and must be afforded protection from competition not subjected to the same conditions or requirements.

I firmly believe that this service, to be satisfactory or successful, must be a regulated monopoly, at least for some years to come, and, while there are many other details to be considered, if the principle is accepted as correct, they are not difficult of adjustment. I think it lies at the bottom of the whole proposition. I feel that I have not enlightened you very much, but I thank you.

ASSISTANT TO THE SECRETARY MATHER.

After what Mr. Harvey has told us the solution of that problem seems somewhat simplified; but I do not know that I am prepared to go quite as far as Mr. Harvey. I do not know whether I understood Mr. Harvey to mean that the hotels in all of the parks should be under one management or not, but I will go with him as far as this: I think that the hotels in any one park should be under one management.

MR. HARVEY.

That is my idea, and in saying that I am speaking out of my own training and education. That is the principle I have been working on all of my life, and that is all I know along that line.

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ASSISTANT TO THE SECRETARY MATHER.

It has worked out in your case very successfully. You have control all along the line in every form of service; whether the hotel or the restaurant service, it is all in one hand. You carry on your operations in a more efficient and economical way than by any other system.

Mr. HARVEY.

That is the idea, exactly.

ASSISTANT TO THE SECRETARY MATHER.

I do not know as I would care to mention publicly what has been in my mind in connection with the concessioners, but I will agree with Mr. Harvey that perhaps the word "concession" is not a proper one. It is true that the Government should see that the agent is of the very highest character. The concessioner going into the park with a broad privilege should, in the first place, have the interest on his investment thoroughly protected. He should have his operating expenses deducted, and then the profits should be divided, possibly 50 per cent to the Government and 50 per cent to the concessioner. That is the proposition I have had in mind, but whether it is practical or not remains to be seen. It may be tried out in some of the parks. This will close the session for this morning.

AFTERNOON SESSION, MARCH 11.

ASSISTANT TO THE SECRETARY MATHER.

I will now call the meeting to order for the afternoon session. I want to say that the Department of the Interior has been cooperating with the Department of Agriculture along the lines of road building. Mr. T. Warren Allen, who is in the Office of the Public Roads of the United States Department of Agriculture, has been doing some work, both in Sequoia National Park and in the Yosemite Valley, in the way of surveying. I am going to ask him to tell us about the work that he has done and some of the deductions that he has drawn from it.

Mr. T. WARREN ALLEN.

Mr. Secretary and gentlemen, unfortunately I am not much of a speaker, so I will read what I have to say here to you.

I am very glad indeed that I was able to come to this meeting, and I wish to say to you that the development of our national parks is a subject of much interest to me. During the last two years I have spent considerable time in Glacier, Rainier, Sequoia, and Yosemite National Parks, and during the last 12 months, in accordance with s

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cooperative agreement between the Assistant to the Secretary of the Interior and the Director of the Office of Public Roads, I have been engaged in making surveys and preparing plans for roads in the Glacier, Sequoia, and Yosemite National Parks.

In order that the parks may be made readily accessible to all of the people there must be roads in abundance constructed in and through them. The problem in each park is a different one, but in genéral the first roads which should be built are the ones providing ways for all of the people to get into the parks. These entrance ways should have the greatest attention, and should be so located and constructed as to be available for use as early in the spring and as late in the fall as visitors are able to enjoy the advantages conferred by a visit. They should be such that all who wish to visit the parks may do so whether they wish to go on foot, horseback, or by vehicle. The full purpose for which the parks were created will not be attained until they are made, as nearly as possible, accessible alike to the poor and to the rich.

When entrance roads have been provided attention must be given to the interior development. Roads and trails must be constructed from the main system to the points of interest, and accommodations arranged for the care of those who will visit the parks in great numbers when the ways are made smooth.

The Office of Public Roads is also at work, in cooperation with the Forest Service, on road development within the national forests. The location of roads in large park and forest areas has rarely been given proper consideration, and, in view of the large number of undeveloped tracts of this sort within the United States, it would seem that a short general discussion of methods and manner of treatment necessitated by the multitudinous problems would be acceptable.

The problems encountered within the park areas are very similar, though not altogether identical with those encountered within the forests. The development of road systems within the parks and forests is necessary in order that these tracts may not be obstacles blocking the free movement of traffic between adjoining areas; in order to facilitate the preservation and reproduction of forest growth; and to aid in the proper development of the areas both as revenue producers and as attractions to those seeking rest and recreation. Unquestionably the use of mature forest growth for the production of revenue is in its infancy. There are no places where so great relaxation of overtired bodies and brains may be obtained as in the woods, and it should be our endeavor to make them readily accessible to all. The time is not far distant when the benefits to be derived will be better appreciated and when that time comes the road and trail systems should be ready and adequate for the safe accommodation of myriads.

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It will usually be found in each case that a system of roads may be devised which will accommodate all classes of traffic which may seek its use. The arrangement of the road system to facilitate the traffic of adjoining areas will also operate to facilitate traffic between the park or forest and these adjoining areas. The maximum of usefulness and benefit requires preservation and reproduction, which may be successful only if it is possible to reach all points readily. Roads to subserve commercial interests may be so built as to harmonize with the natural features and, without undue extension or circumlocution, make accessible the features of natural beauty. The road as such should be inconspicuous. The cost need usually be no more to construct a road which shall be an harmonious feature of the landscape, though the preliminary study may cost a little more.

The primary considerations to be borne in mind in the selection of routes, in addition to the topographical features, are: Lines which through traffic and traffic of adjoining areas would follow in crossing the park or forest if there were no obstacles, points within the area suitable or required for the location of fire lookouts, portions covered with valuable salable mature timber, hotel and camping sites, and features of beauty.

Having the above information properly recorded, the next step is to lay out the main road on a topographical map, if available, having in mind all the influential considerations. The main system will, of course, lead to the park or forest boundary, and in order that a suitable connection may be made with the outside highway system, sufficient study should be made of this phase of the problem, to avoid complications along this line, either present or future. It may be that the proper outlet is unconstructed and the necessity exists for arranging for its construction by the proper authorities. An inside system without proper outlet would, to say the least, be unfortunate. The main system must be so laid out that it may be constructed with very light grades. It must be direct, but directness should usually be sacrificed to grades, bearing in mind, however, that unless reasonable directness is attained it will be difficult to prevent travelers from taking the more direct routes and making short cuts; this is especially true in trail construction. It will usually be possible to indicate on the contour map the proposed branches of the system, but before deciding definitely it will be necessary to take the map and go over the ground to determine whether the route is feasible; it may be that a layout which seems desirable and which appears possible when marked out on the map may not fit the ground; it may be that the paper location should be varied to permit a view of a beautiful waterfall, to get an attractive water, sky, or landscape effect; it may be found that these effects may be introduced when absent, and the road location should be made with such objects in

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view. A proper development may necessitate the construction of hotels and rest houses, the designation of camping sites and, perhaps, of village sites. These points should all receive due consideration.

In staking out, the stakes should be marked in such a way that the location shall be visible from points some distance away. The proposed roadway should then be carefully studied from selected points, both upon the roadway site and at a distance from it, in order to determine if there may not be made changes which shall add to the attractiveness of the views which may be obtained by travelers or to insure that the roadway may have an harmonious setting when viewed from the outside. It will be necessary, in order to make sure of not missing attractive views which might be brought out by a little change, to occasionally climb a tree along the route and study the possibilities from such vantage point. It may be advisable for some reasons to locate the road through an open or bare spot. Such places should not be avoided on account of unattractiveness until a study has been made to determine whether the unattractiveness may not be eliminated by a judicious planting of trees and shrubs or possibly by the introduction of a small lake or pond. No pains should be spared to insure the best possible solution at all points, keeping in mind the possibility of such a location as will preclude relocation after the road has been built.

The main system being definitely decided upon, the final survey should be begun and at the same time the preliminary investigation of the remainder of the system be taken up and proceeded with. The work of making the final survey and preparing plans and estimates is not very different from that required for the average country highway. Center-line stakes should be accurately placed at each 100-foot station and cross sections taken at each for such widths on each side as may be necessary in order to accurately estimate the yardage of material which must be moved. I shall not go into the details of the necessary survey work. It would be tiresome to you and serve no useful purpose at this time.

Preparation of the plans follows the survey, and the rough draft should be made as fast as the survey proceeds. This may usually be done without delaying the survey work, but should be done anyhow, as the working up and plotting of the notes may disclose the necessity for additional information, and with the survey party on the ground this information may be easily and cheaply secured.

As soon as a short section of these rough plans has been completed it should be taken out on the road and a close inspection made at all points to see how it fits the ground. At points where there are cuts or fills of any importance proposed, culverts to be built, and ditches dug, consideration should be given to the resulting scenic or landscape effects likely to be produced, and full notes made on the plans

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of changes beneficial to this or to other features. If the plans are gotten up as outlined above when the survey has been completed, the rough plans will also be finished and the final plans may be made up and estimates and specifications prepared with little trouble. The final plans will be little more than an elaboration of the results of the rough plans. The final plans should be on sheets of tracing cloth of suitable size and show the same information as the plans for any highway project. If the proposed road is of considerable length, it should be divided when making up the final plans into sections of from 6 to 8 miles each. Every piece of necessary work should be shown on the plans. The plans are to be supplemented and explained by specifications, and these should be a clear and unequivocal exposition of the methods to be used in carrying out the work to be done. The specifications should be drawn with the same care and attention to details whether the work is to be done by contract or otherwise. If the work is to be done by contract, the contractor looks to the specifications for a determination of quality. All evasions and all misleading and ambiguous statements should be avoided. Such statements and statements of requirements which are impossible to carry out as well as of those which it is not the intention to enforce serve the purpose of increasing the contractor's bid prices. As closely as possible the details of the methods to be used in carrying out the work to be done should be outlined in the specifications and in the order in which the work should be prosecuted.

The estimate should cover in detail everything to be done, from the necessary clearing to the final smoothing up of the completed work. The most painstaking care must be taken in making it up in order that there may be no misapprehension as to the total cost and the amount of money which must be provided to carry the work to successful completion.

In relation to road types for park use I shall say little. The money available will settle that for the present, but no matter which type is at first selected, the design should be such as to enable an economical change to a higher type when such change becomes desirable.

The earth road has its use and will continue as a very important part of our road system indefinitely. It is suitable for light traffic only, and has no life except it be constantly maintained. During certain seasons of the year and when carefully maintained it gives a good account of itself. I believe there are possibilities in the earth road that have not yet been developed. At one time I began a series of earth-road experiments, but I was unable to continue them for a sufficient length of time to arrive at any very valuable conclusions. It is difficult, in some sections, to get such an appreciation of the

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value of a well-maintained earth road as will insure a conscientious endeavor to carry out a proper scheme of maintenance. I believe in the patrol system for earth-road maintenance. The gravel road is very short lived unless maintained, and it, too, is adapted to light traffic only. The same statements made in relation to the earth road apply also to the one of gravel. It is just a little higher type and may usually be made dustless or semidustless by the application of some dust laying or abating preparation. I am referring now to water-bound gravel. I have seen many quite fine gravel roads, and when the composition of the gravel is naturally favorable, they may be built and maintained cheaply. The sand-clay road gives very excellent results when it is possible to obtain the proper materials for it, and when properly constructed it is quite cheaply maintained. It is suitable for light traffic only, and to be efficient must be properly maintained. The life of plain macadam is variable, and depends upon the materials of which it is constructed and the kind and amount of traffic it has to carry. If used by many automobiles it soon goes to pieces. Water-bound macadam may be rendered dustless by the application of a dust-laying preparation, and when so treated becomes very serviceable and is suitable for fairly heavy usage. The application of the dust-laying preparation, however, usually waterproofs the road, and it ceases to be water-bound, so that unless the surface is kept treated pot holes will develop and disintegration soon follows. Bituminous macadam has not been in use sufficiently long to determine its life even approximately. It is my opinion that such a road, when properly designed, constructed, and maintained, will endure during the life of the bituminous material used in it. It makes a very excellent road and will carry heavy traffic, probably the heaviest which the present-day rural road is called upon to carry.

As stated before, I am now engaged in making surveys and preparing plans for roads in Glacier, Sequoia, and Yosemite. In Glacier a survey has been made and the plans are nearly complete for the so-called Fish Creek–McGee's Meadow Road, extending from the supervisor's headquarters on Lake McDonald along Fish Creek to McGee's Meadow, a distance of about 5 miles. This road, when constructed, will become a portion of the road through the park along the Flathead River to the Canadian boundary line. The portion of this road which the Fish Creek Road will replace has excessive grades. The proposed road is being designed with very easy grades, none exceeding 5 per cent, and this has been done without any sacrifice in distance or alingment. The location is through a very heavily wooded section, and at times follows the creek, crossing it and its branches several times. There are two other very difficult hills on the Flathead River Road, both of which may be

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avoided by relocation. In each case it will be possible to secure very easy grades and in addition improve the road in attractiveness. In addition to the Fish Creek Road survey there was another in progress last fall for a road along the northerly side of Lake McDonald. This was interrupted by inclement weather when about 3 miles had been completed. It is located just far enough back from the lake shore to permit of enticing views of the lake itself and also to leave room for camping sites between the road and the lake front. In time there should be a drive entirely around the lake, and a very beautiful drive it will be. It is planned to continue the survey interrupted last fall to the head of the lake and from there northward along McDonald Creek, to and up Continental Creek to Flat-top Pass, over it into the valley of the Little Kootenai, and down this valley to Waterton Lake. This projected road to Waterton Lake, I believe, will become the main artery for traffic into Glacier Park, and it will be a deservedly popular one, winding, as it will, through dense forests and along the rushing McDonald Creek for miles, emerging on the top of the Continental Divide only to plunge once more into the forest and follow the Little Kootenai through it to Waterton Lake. There is a very attractive waterfall on the Little Kootenai. Later the Flathead River Road should be relocated and rebuilt, a road located from the proposed Lake McDonald–Waterton Lake Road from a point on it near the Avalanche Creek crossing, to and over the so-called Trapper Creek Pass, which is near Mount Oberlin, to connect with the Great Northern development on St. Mary Lake, and a branch provided for by way of Piegan Pass to Lake McDermott. There should also be a connection made between the proposed Lake McDonald–Waterton Lake Road and the road up the Flathead River, perhaps by way of the Kintla Lakes. A road for this purpose built up Olsen Creek, passing the two lakes through which the creek flows, to and over Browns Pass, and down the valley of Bowman Creek and Lake, would be wonderfully attractive; but from Browns Pass down into the valley of upper Bowman Creek the expense of construction would be very heavy. It might be possible to locate the easterly portion of this connection up Valentine Creek, instead of up Olsen. Only after an extensive reconnoissance may a proper decision be arrived at.

In Sequoia a survey has been made for a road from near Ranger, in the Giant Forest, in a generally northerly direction, by way of Wolverton Creek, to and across the Marble Fork of the Kaweah River just above the present trail crossing and thence to the north boundary of the park by way of Willow Meadow and Cahoon Meadow. Plans have been completed for the portion from Ranger to the crossing of the Marble Fork, a distance of about 3 miles. Before Sequoia Park can be visited by the large number its attractions

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warrant the road over which visitors must pass to reach it must be very greatly improved; this is especially true of the portion without the park through the national forest, and riding over it in any sort of a vehicle is not enjoyable.

In Yosemite a survey has been made into the park from the boundary line about a mile easterly from the railroad station at El Portal, along the Merced River, following the present road quite closely. The survey has been completed through Yosemite Village and on to the top of the Nevada Falls. The plans have been completed for the first 5 miles of the road and are in a well-advanced state for the remainder. The present scheme contemplates the extension of this survey to the easterly boundary of the park at the low pass above Mono Lake, connecting there with the county highway. This extension may go by way of Merced Lake, up Fletcher Creek, over Tuolumne Pass, and down Rafferty Creek to the Lyell Fork of the Tuolumne River. In my opinion, it is imperative to secure an entrance highway to Yosemite Valley and Park, which may be passable the year round; such will of necessity be down the Merced River from El Portal to connect with some point on the California State highway system. The wagon road entrances by way of Wawona, Oak Flat, and Coulterville are blocked by snow until the season is well advanced and for a considerable period after the valley itself is open. Roads to take the place of these should be located and constructed, one on each side of the valley, but the main entrance should be up the Merced River.

From some point on the proposed main road, at or near the head of Nevada Falls, there should be a road laid out to connect with the Wawona road as it is proposed to relocate it. Such a connecting road would probably cross the Illillouette Creek about 2 miles above the Illillouette Falls. From some point on the mail-line road, above Nevada Falls, should be a road located, by way of Tenaya Lake and the head of Yosemite Falls and through the highlands to the north of the valley, to connect with the road proposed to take the place of the Big Oak Flat and Coulterville roads, and also to connect with the road system to be built to and into the park by the city of San Francisco.

I have paid two visits to Rainier Park, but have done no survey work there. My observations there convinced me that the development of that park will, of necessity, be along radial and, for the present, disconnected lines. It is a case of first building radial roads to connect with the Washington State system, and later, when more money is available, to build a connecting rim road. The present development is radial into the park from the southwest, reaching the Nisqually Glacier, Paradise Park, and surrounding attractions. It is my opinion that the next development should be radial into the

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park from the northwest, by way of the Carbon River, to reach Spray Park, Moraine Park, etc.

I also visited Wind Cave Park and the Hot Springs Reservation. At present there does not seem much required in the road line for Wind Cave Park, with the exception of maintenance for the earth road now traversing the park. This road should be maintained as a first-class earth road until traffic increases to such an extent as to necessitate a more durable type. When I was over this road last year it was in very fair shape. There were a few rough places. The removal of stones from the traveled way and smoothing it up with a road drag at such times as it is in condition to be dragged should be sufficient for the present. Through traffic between Denver and vicinity, and Lead, Deadwood, and vicinity passes through Wind Cave Park, and when this through road is more durably constructed the park road must receive like attention. Wind Cave Park is a somewhat barren appearing place, and it would seem that some experiments in tree growing would be worth while there.

The road problem at Hot Springs is quite different from that in the other parks. It is subsidiary to the real problem, which is one of landscape engineering. There is at Hot Springs an excellent opportunity to produce extraordinary results. The bathhouses there are very fine with few exceptions, and there seems to be little doubt of the benefit derived from the use of the spring water, but people wish for more than to be cured of their ailments. They wish to enjoy life while they are being cured, which is one of the reasons why they swarm to Europe and to the watering places there. There must be at Hot Springs the opportunity for a pleasurable existance out of doors. The material is at hand—the topography of the reservation renders it peculiarly suitable to treatment by the landscape gardener, and the system of roads will depend upon the demands of the gardening scheme. The out-of-door aspect to-day is quite dreary and the business of getting well is not aided as it should be by life in the open.

The subject of national park development is a fascinating one and I am inclined to doubt whether any of us fully realizes the Glacier, the Rainier, or the Yosemite Park of to-morrow. I mention these parks because I am more familiar with them, not because I believe they have greater possibilities than the others. I, as a road builder, have dreamed of road development in the various parks, and have dreamed of seeing such roads, lined and banked with the flowers which grow wild in the meadows of the parks and upon the mountain sides, winding unassumingly along the brook, beneath the waterfall, and skirting timidly the majestic mountain.

Gentlemen, you have a wonderful work before you, the harmonious blending of the handiwork of man with that of God.

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ASSISTANT TO THE SECRETARY MATHER.

I wonder if General Superintendent Daniels has any comment upon Mr. Allen's paper? Have you any thoughts upon it, Mr. Daniels, you would like to express at this time?

MR. DANIELS.

I am not familiar with Mr. Allen's plans in detail, but I know that they are being carried out partially along the lines of a general road circulating system for the parks. The trouble with the roads into Yosemite Park at present is that they stop at the floor of the valley and the tourists return on the same line. I have never seen anyone who does mountain travel that likes to traverse the same road twice. I think we are working on the principle of getting a road up through the valley onto the rim and an encircling road, or rim road, around the valley. Mr. Allen's survey of the upper end of the valley has been to connect the lower valley with the rim road.

Another comment that he made in his paper, and that I made up my mind to dwell upon, is the necessity of a road coming into the valley that will be open the year round. We have a road running from El Portal into the valley some 14 miles in length. If that road were extended in a westerly direction down the Merced River it would connect with the State highway at Mariposa. I think this road would be something like 40 or 50 miles in length.

If that road is built we could have tourists in that park all the year round. As a matter of fact, many people say that the valley is much more beautiful in the winter than in the summer. We would have additional travel to support and justify the necessary accommodations. If there is any pressure that can be brought to bear upon those that are now planning to build that road up there, I would like very much to see it done.

ASSISTANT TO THE SECRETARY MATHER.

We will now hear from Mr. H. D. McGlashan, who will speak on stream measurement and its use in national parks. Mr. McGlashan is the district engineer for the United States Geological Survey for California.

MR. H. D. McGLASHAN.

Mr. Secretary, ladies, and gentlemen, what I have to say has been divided into two divisions. The first you will perhaps find a little dry. It relates to the work now being done in the parks. The second section of my remarks will be more interesting, because it will be a set of slides showing in detail the work of the water resources branch

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of the Geological Survey in the different sections of the United States.

For the past 25 years the Geological Survey has been investigating the water resources of the United States. The extent of the work has, of course, been determined by the annual appropriations made by Congress. The Geological Survey is now maintaining over 1,000 gaging stations where regular measurements of discharge and gage heights are made for the determination of daily flow. As a result of these investigations, records of flow of greater or less length are available for about 3,000 stations.

In order to secure records of the flow of a stream, it is necessary to have a complete record of the elevations of the water surface and sufficient discharge measurements to cover the range of stage. At the site selected for the gaging station a gage is installed in order that the elevation of the water surface may be readily observed. Equipment is also necessary in order that discharge measurements may be made at all stages.

Gaging stations are now maintained in the folowing national parks: Glacier, Yellowstone, Yosemite, and Sequoia.

Mr. W. A. Lamb, district engineer, Helena, Mont., is in charge of the work in Glacier National Park. He reports that during 1914 four gaging stations were maintained within the borders of Glacier National Park. One of these stations was maintained in cooperation with the St. Mary project of the United States Reclamation Service. The others were maintained in cooperation with the park officials, who furnished gage-height records for two stations and a few miscellaneous gage readings at the other. The expense of the field work was paid from the regular Montana stream-gaging allotment. It will be very desirable to install additional gaging stations in the park when conditions permit.

Mr. G. Clyde Baldwin, district engineer, Boise, Idaho, is in charge of the work in Yellowstone National Park. Four gaging stations are maintained. As Mr. Baldwin has reported in considerable detail, I will quote direct from his letter. This is of general application to all the parks. Mr. Baldwin says:

> The funds available for this work have been decidedly limited, and have only sufficed to pay the salary and expenses of a Survey engineer for about two round trips to the four gaging stations each year and in addition to provide a very small allowance for office work and supervision, etc. In consequence it has as yet been impossible to provide any measuring equipment at the stations, and, furthermore, we have been unable to install the Friez gage sent out from Washington in 1913. Under existing conditions, however, it has been possible to secure very good continuous records at one station, fair records at a second, fairly good low-water records at a third. At the fourth station, namely, the one on Yellowstone River above Upper Falls, we could probably prepare approximate records for open-channel periods from measurements

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secured at the outlet of Yellowstone Lake, about 13 miles upstream, and from miscellaneous measurements on intervening tributaries. The control for this station, however, is undoubtedly permanent, and it seemed advisable to postpone making any discharge computations until such time as it may be possible to install cable measuring equipment and secure a few actual measurements in the vicinity of the gage.

The park department has usually provided a team, buggy, and driver for each round trip to the gaging stations when the condition of the roads was such as to make such a conveyance feasible. On Mr. Paulsen's winter trip to these stations it was necessary for him to travel entirely on skis, but in this instance one or two soldiers were detailed to accompany him as guides between each two soldier stations.

The stations on Madison and Gibbon Rivers can be handled satisfactorily without special measuring equipment, but cables are badly needed at the stations on Yellowstone and Snake Rivers, and, in addition, it is desirable to install the Friez automatic gage at the gaging station on Yellowstone River. Only $200 was allotted from Survey funds for work in this territory during the present fiscal year, and of this amount we now have slightly less than $100 still remaining. By eliminating the proposed spring gaging trip to these stations it would probably be possible to purchase one of the two cables needed; but I doubt the advisability of cutting out this gaging trip, especially since it is only possible to visit the stations twice each year in any event.

It was my idea to try to make the automatic gage and cable installation at the Yellowstone station in a very artistic manner, and to provide extra large glass windows for the automatic gage house, in order to permit tourists to examine the working of the gage. After the station was satisfactorily rated a rating table could be placed under glass on the outside of the house, and it would then be possible for tourists to determine the quantity of water passing over the falls at the time of their visit, which would doubtless be of especial interest and would furnish quite an advertisement of the work of the Water Resources Branch of the Survey.

I do not see any special object in attempting to handle additional work until we can get the four stations now being maintained in first-class shape, and would be very glad to expand in this territory if necessary additional funds could be procured. Any expansion, however, will require additional money cooperation, as practically all funds now available go into salary and expenses of field men while on actual field work, and the office charge made thus far against these stations has been very small.

Records at the Madison River station will be of value in connection with possible power development outside the park boundary, in addition to obtaining run-off data for high drainage areas, which was one of the primary objects in view in installing these stations. Likewise, the station on Snake River is also of value in connection with the determination of the inflow into the Jackson Lake Reservoir of the United States Reclamation Service, while the one on the Yellowstone, as previously indicated, would be of popular interest when taken in connection with the flow of water over the Lower and Upper Falls of the Yellowstone immediately below. The station on Gibbon River would also have a certain amount of popular interest on account of the fact that practically all tourists visit Gibbon Falls, which are situated about 2 miles upstream.

In the Yosemite National Park four gaging stations are maintained in cooperation with the park officials. The gage-height observations are reported to the Survey by employees of the park,

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while all equipment, salaries, and traveling expenses of the engineer have been provided by the Geological Survey. The records obtained at these stations are good, except that the gage-height records have not always been complete.

On May 1, 1914, at the request of the city of San Francisco, the Geological Survey took charge of its stream-gaging work in Hetch Hetchy Valley and vicinity. Five regular stations are maintained at present, and it is expected that ultimately there will be about 15 stations in operation. In accordance with the terms of the Hetch Hetchy bill, the inflow and outflow at each of the three reservoirs must be measured.

Additional records on the streams within the park are very desirable when further cooperation can be arranged.

Four cooperative gaging stations have been installed on streams in or near Sequoia National Park. For a short time during the summer of 1913 gage readings were furnished for these stations. Since that time practically no records have been secured. The run-off records from these drainages are of much value, and a strong effort should be made to secure the data, especially during the low-water period.

The collection of stream-flow data for streams within the national parks is a matter of much importance.

In the early work of the Geological Survey gaging stations were established in the valleys and foothill regions where diversions were feasible for irrigation. Later the work was extended to the higher portions of the watersheds, where records were needed for power development. Cooperation with the Forest Service has afforded an opportunity for securing records at remote localities in the mountains which are reached regularly only by their rangers. In addition the Forest Service has furnished equipment and hydrographers who have worked under our immediate supervision. In this manner run-off records having very great economic value have been collected.

The data collected in the national parks are of much general scientific value, for they show the run-off from especially high elevations. From an economic standpoint the records, of course, possess far greater value. They are of much assistance to the land classification board in connection with right-of-way applications and the withdrawal or restoration of public lands.

Present indications point toward a development of the water resources within the parks. Wolverton Reservoir in the Sequoia National Park is being constructed for the Mount Whitney Power & Electric Co., and the Hetch Hetchy act permits the city of San Francisco to store and divert water in Yosemite National Park. These developments will result in considerable revenue to the parks. Sec-

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tion 7 of the Hetch Hetchy act provides "that for and in consideration of the grant by the United States, as provided for in this act, the said grantee shall assign, free of cost to the United States, all roads and trails built under the provisions hereof; and further, after the expiration of 5 years from the passage of this act, the grantee shall pay to the United States the sum of $15,000 annually for a period of 10 years, beginning with the expiration of the 5-year period before mentioned, and for the next 10 years following $20,000 annually, and for the remainder of the term of the grant shall, unless, in the discretion of Congress, the annual charge should be increased or diminished, pay the sum of $30,000 annually, said sums to be paid on the 1st day of July of each year." This money is to be used for the development of the national parks in California.

A few years ago the Geological Survey made a reconnaissance of Yosemite National Park to determine if it were practicable to develop storage in the watersheds above the principal waterfalls. If the low-water flow over these falls could be augmented by stored water, the falls would be much more attractive. Accurate stream-flow records are, of course, absolutely necessary before any such developments are made. Parks under village plan will require water supply, sewer system, and power plants to generate electricity for lighting and for power.

Under the village plan as outlined this morning by Mr. Daniels you will readily see that it will be necessary to have adequate water supply, sewer system, and power plants to furnish light and power for the buildings and for general purposes.

The uses which appeal most strongly or in which we are mostly concerned or the main uses for which data of stream-flow records are valuable may be briefly mentioned. First, the highest use of water, I believe, is generally conceded to be for municipal purposes. Before the city of Los Angeles began construction of its $25,000,000 aqueduct from Owens River Valley it spent several years collecting, in cooperation with the Survey, very complete data of stream flow in the Owens River drainage. San Francisco has spent 10 years or more collecting stream-flow records in Hetch Hetchy Valley and vicinity on the Tuolumne River and immediate tributaries where storage sites are available. Now, this work has been turned over to the Survey in advance of construction. A large number of private corporations and persons throughout the United States are now cooperating with us in a very substantial manner for similar purposes.

New York City, before taking out its immense project to bring water from the Catskill Mountains to the city of New York, spent a large amount of money and several years securing stream-flow records before it could make definite plans regarding an aqueduct and reservoirs.

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The second use of water, which is a close second to municipal uses, is that for irrigation. The foundation of the Reclamation Service, as I have shown you, was based upon calculations of stream flow records. For many years after the work was started the Geological Survey calculated records for that, and it still maintains there a large number of gaging stations. It is not only necessary to have these records before construction is started, but it is necessary to continue them after the works are completed for operation purposes.

Most of the Western States, practically all of them, contribute considerable amounts directly to the survey to carry on the stream-gaging work.

The early developments in water power were at points where the power could be used. For instance, a flour mill or saw mill was built at a desirable point where some fall could be secured, and the power used there, but by the development of machinery and the generating of electricity it is possible now to develop power back in the mountains at remote localities, which could not have been used before, and in this connection it is interesting to note the Big Creek development recently, where the Pacific Light & Power Co. transmits its power 240 miles to the city of Los Angeles, at 150,000 volts.

The State of Wisconsin, through the railroad commission, has cooperated extensively with the Survey in the investigation of undeveloped water-power sites in that State; also New York may be mentioned in this connection.

For many years in this State, as well as in other Western States, water has been used extensively for hydraulic mining. Again records are needed for flood control. Of national importance is the Mississippi River, and locally the Sacramento and San Joaquin. Thousands of acres in the Sacramento Valley are now under water due to the rains of last month. Plans are being perfected for the reclamation of this overflowed land.

Inasmuch as the administration of the national parks and the Geological Survey are in the same department, there should be a very hearty cooperation between the two bureaus. Cooperation can be rendered the Geological Survey in the water-resources investigations by furnishing gage-height observations, assisting with the installation of stream-gaging equipment, and, if conditions permit, by sharing the expenses in connection with the field work.

[Here followed an exhibition of slides by Mr. McGlashan.]

ASSISTANT TO THE SECRETARY MATHER.

That gives us a very good idea of the extensive work that is being done in this particular line by the Geological Survey. We thank Mr. McGlashan for giving it so fully.

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I want to give an opportunity to Mr. A. G. Batchelder, chairman of the executive board of the American Automobile Association, who has come here from Washington to attend this conference, to speak. I want a few words from him from the point of view of the automobilist.

Mr. A. G. BATCHELDER.

Mr. Chairman, ladies, and gentlemen, our worthy chairman here has been a newspaper man, and in his time he has blue penciled many a speech and also a great deal of copy of various kinds. I shall not detain you very long, because I came here myself more to get instruction than to give instruction. In the early days of automobiling we motorists found only two classes of people that cared to associate with us. They were largely the policemen who arrested us and the justices who fined us. At that time there was never a better illustration of the old saying attributed to Mr. Dana, of the Sun—and it is with some pride that I make reference to the fact that Mr. Mather was a Sun man in his time. Mr. Dana was asked what was the secret of running a newspaper. He replied that all you had to do was to find out where hell was going to break loose next and have a reporter there to cover it. It so happened in those days that when anything regarding an automobile occurred there was always a reporter there to cover it.

I am sorry to say that in the early stages of motor development we had the usual difficulties that attend any new innovation; there were people who perhaps abused it, and there are undoubtedly people who abuse it to-day; but the fact remains that we have increased in number until now there are some 1,783,000 automobiles in use to-day in the United States, and we pay in taxes every year something like $8,000,000. As a matter of duty we have interested ourselves in this question of roads development, and one of the duties of this conference is to see that the American people become better acquainted with their own country. I was much interested this morning when the new Congressman from this district said that he was going to do the very best he could at Washington. I have not any doubt but he will, but you will find, as we have found, that, when it comes to getting certain things done at Washington the only effective method is to bring a certain amount of pressure from the people at home.

While the commercial aspect of road building in relation to the transport of produce from farm to market and merchandise from factory to consumer properly commands great consideration, the fact should not be overlooked that road travel presents social advantages which are as essential to the development of a nation as is the accumulation of dollars. An intimate knowledge of a man's

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own State such as is gained by road travel makes for the betterment of the citizenship generally. The man who visits adjoining States has brought to his attention the needs of other sections of the country, and inevitably his viewpoint assumes a national character.

Now, a few States possess scenic attractions which ought to be reached by road, and while it is true, looked at entirely from a dollars-and-cents standpoint, that some of these highways could not be considered commercially important, their building is essential to enable one to enjoy that which has been supplied by the Creator. Hence, every road we construct should not be passed upon solely for business utility. A nation which interests itself, to the exclusion of everything else, in the accumulation of money misses many of the better things of this life.

Simply because a few people preceded other people in the use of a time-saving, and now economical and widely used, road vehicle, they were and are still designated as "motorists" and are looked upon as a special class and subjected to unfair laws. Such has invariably been the case in the establishment of things which are revolutionary to their effect.

It is the automobile that has widened the scope of road travel until now in the course of a day one may visit several States, while trips from town to town and county to county are commonplace. The most important advantages gained are commercial in character, and this phase of the matter is one which is approaching astonishing proportions and carries with it an amplified demand for community and county roads and continued to the need of intercounty and interstate arteries of communication. Parcel post will attain its maximum development on roads of the first class. Railroads will enter the field of motor trucking—are entering—and this will take care of short-haul freight transport, which in most instances is now carried on at a loss. Continuous roads follow as a positive demand in connection with this new era of transport—town to city, county to county, and State to State.

That the National Government can righly insist before Federal cooperation is given that the States shall do their proportionate share in the general roads improvement will logically appeal to all fair-minded advocates of roads progress.

That States must establish State systems in charge of competent highway departments is now an acknowledged roads need in promoting state-wide development. Construction by the State of the principal inter-county roads is an essential.

When the call for National Government participation is legislatively recognized, it will naturally relate to the interstate highways. Since the State would then save that which otherwise would be ex-

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pended on these big roads, this money can be employed in perfecting its State system.

Persistently and gradually in cooperation with other organizations the American Automobile Association has advanced the proposition that the time has arrived when the National Government should give help to the several States to enable them to meet their increased highway expenses, brought about by the multiplying of road travel and the coming of the vehicle which accelerates communication between centers of population and country districts. Since the State should lend aid to its county units in the cost of construction and maintenance of arteries which connect the various parts of the Commonwealth, it follows that the Federal whole should accept part of the burden of comprehensive road communication.

In roads, as in many other things, the requirements of all States will not coincide. While there has been some effort to make it appear that motor vehicle users seek at the expense of everything else airline routes connecting centers of population and resorts and scenic points of interest, this charge is not borne out by the real facts in the case. We can see no inconsistency in striving concurrently for the development of a road through a State replete with scenic and health attractions and at the same time urging in an agricultural State that proper attention be given to market roads leading to the farm.

If the town pays the salary of its town clerk, and he is nothing more than a town officer, it naturally follows that his entire duty and his entire effort should be for the good of the township. Likewise, since the county supervisor is paid by the county, his duty is to the entire county, and the needs of his locality should be conserved only to the extent that the general good of the county is the first consideration. The same principle should apply to the State legislator, whose services are paid for by the State, which is justified in demanding that he shall serve from the standpoint of benefit to the entire Commonwealth. Since the Nation pays the Member of Congress, it is a continuation of the principle that his own district should be secondary, and his consideration of public questions shall be from a national and not a local standpoint.

Therein are the fundamentals of correlated legislation and a proper distribution of the burdens which devolve upon the several civil subdivision of our form of Government.

ASSISTANT TO THE SECRETARY MATHER.

There is no question but what the automobile has its place. I remember a tramping trip through the Kern River country, when some members of the Sierra Club were with me. One of them was a very good friend of mine. Just about a year from that time I was in an

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automobile going up the coast, and we met him coming down from the north in another automobile. We met in the San Marcos Pass. He is a very enthusiastic mountain lover, and nearly always tramps on foot; but this time he was in a car.

We will now have a paper, by Col. L. M. Brett, acting superintendent of Yellowstone National Park, on patrolling and ranger service. It is a subject in which we are all very much interested at this time.

COL. L. M. BRETT.

It would be impossible to go exhaustively into this subject without taking up too much of your time and worrying you. I must call attention to the fact that some of our national parks, especially Yellowstone Park, are the richest game preserves in the world, and that is especially so with regard to fur-bearing animals. The outlaw, if given a license only for a few weeks, would profit enough to keep him for several years in luxury.

I will not touch on the subject of fighting forest fires, because that subject is going to be handled by a man who has lived among the ancient trees in Sequoia and General Grant National Parks and who has protected those forests and loves those grand trees. He will tell you all about that subject, but he will only be able to touch on the main features of it.

There is another important work in connection with national parks, and that is the construction of trails and roads; but I will not dwell upon that, because the subject is inexhaustable. The handling of automobiles is a very important subject that is growing, as you know from what Mr. Batchelder has said, in importance every year. So in handling this subject I will only touch upon the lights and the shadows.

Our national parks have been set aside by the Congress of the United States for the benefit and enjoyment of the people. Each park has its particular attractions and problems, but all of those with which I am familiar need protection from those who are not in harmony with the purposes for which the parks were created and who are seeking their own selfish ends for enjoyment or profit at the expense of scenic beauty and of animal and bird life. Aside from the danger of vandalism and of lawbreakers there is need of men to guide and direct the tourist, that he may get the largest return for his journey to any park, and to see that the laws and regulations are enforced, and in all ways to make travel safe and enjoyable. The needs of the several parks have caused the employment of men to meet the conditions therein existing. In some of the parks these individuals have been called park rangers; in others, scouts. In

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four of the national parks military forces have been used to protect the domains, to fight forest fires, and to guide the tourist. In the early days of these parks such a force was essential, because there were conflicting interests; there were holdings by settlers, many of whom recognized no law other than their own; and there were hunters and trappers who traveled at will, set their traps, and killed their game where they could reap the greatest harvest. To curb such men the strong arm of the military was necessary; but now, generally speaking, there are no such conflicting interests, and the public sentiment of the people surrounding the parks is in favor of due protection to all within them and of proper observance of all laws and regulations governing them. So in consequence the military force has been withdrawn from all the parks but the Yellowstone, and its withdrawal is now contemplated there, it being only a matter of time.

The Secretary of the Interior realizing that a systematic, orderly, and businesslike force was essential to these parks and that their work should, as far as possible, be coordinated and made uniform, on January 9, 1915, promulgated the following regulations governing park rangers in the national parks:

The national park ranger service consists of a general supervisor of ranger service, chief rangers, assistant chief rangers, rangers first class, and rangers.

The ranger service is under the direction of the general superintendent of national parks, who administers it in conformity with regulations promulgated by the Secretary of the Interior.

Appointments and promotions within the service will be made by the Secretary of the Interior on the recommendations of the superintendent of national parks and the supervisors of the several parks in which detachments of the service are serving.

The following annual compensations for the various grades in ranger service are prescribed: Chief ranger, $1,500; assistant chief, $1,350; ranger first class, 1,200; ranger, $900.

The uniform, arms, and equipment of the ranger service shall be those prescribed by the Secretary of the Interior.

Members of the ranger service shall, at their own expense, provide themselves with uniforms, arms, subsistence, bedding, and such equipment as their duties require. Those rangers detailed to mounted duty must, at their own expense, provide themselves with horses and pack animals suited to the service, saddles, pack outfits, and such other horse equipments as are necessary in their mounted work. A service stripe for each five years of completed service in the national park ranger service shall be a part of the uniform.

Rangers and scouts in the service of the several parks prior to the promulgation of these regulations are entitled to wear a service stripe for each completed period of five years of service as ranger or scout.

Members of the national park ranger service may be awarded by the Secretary of the Interior a distinctive badge for conspicuous services under exceptional circumstances, on the recommendation of the supervisor and the general superintendent of national parks. This badge may carry with it extra compensation as determined by the Secretary of the Interior. The badge will form a part of the uniform.

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An applicant for the position of ranger must be between 21 and 40 years of age, of good character and correct habits, of sound physique and capable of enduring hardships; tactful in handling people; possess a common-school education; able to ride and care for horses; know how to cook simple food; have had experience in outdoor life; be a good shot with rifle and pistol; and have some knowledge of trail construction and fighting forest fires.

The general superintendent of national parks is authorized to waive such of these requirements as are not essential for rangers hired temporarily, or those hired for specific and special duties.

Rangers, first class, are generally promoted from those rangers who have demonstrated the greatest aptitude for ranger work, and have successfully passed an examination in methods of fighting forest and prairie fires; the packing of horses and mules with pack saddle and aparejo; the construction of fire lanes and trails and the building of cabins; the reading of topographical maps; traveling by map and compass; in the habits of the game and fur-bearing animals of their respective parks; in the geography and geology of their parks and the location and nature of the features of principal interest; and, in those parks where needed, to be skillful on snowshoes and skis.

The assistant chief rangers are selected from the rangers, first class. The selections are made from those rangers whose service has been the most valuable and whose intelligence and judgment in dealing with people and meeting emergencies have been of the highest order.

The chief rangers are selected for fitness and qualifications and must be competent leaders and instructors of every branch of ranger work.

The strength of the ranger detachment assigned to each park shall be prescribed by the general superintendent of national parks, subject to the approval of the Secretary of the Interior.

The duties of the ranger service in each park shall be prescribed by the supervisor of the park and the general superintendent of national parks, subject to the approval of the Secretary of the Interior.

Monthly reports are required of all members of the ranger service, as follows:

1. All rangers will be provided books in which they will enter the duties performed each day; for example, the location and object of the journey, the number of miles traveled, game, loose or stray stock seen, condition of game; if in remote sections of the park, indications of travel or unlawful trespass, and anything unusual seen or heard during the day. These books will be turned in to the chief ranger or officer designated on the last day of each month, or as soon thereafter as possible, and transcribed in his office on blank forms provided for that purpose. These reports, in duplicate, and his own report, also in duplicate, will be submitted to the supervisors.

2. Each supervisor will forward the duplicate reports made by the members of the ranger service to the general superintendent of national parks, with a letter of transmittal containing such comments and explanations as the circumstances call for, and will give all additional information of work completed or in progress, reporting any unusual occurrences during the month, and in general such a detailed statement of park affairs as will keep him thoroughly informed. The general superintendent of national parks will in turn transmit one part of each report to the Secretary of the Interior with such recommendations and suggestions as he may deem proper.

The supervisor will render, on blank provided for that purpose, a report on the efficiency of the chief ranger or senior officer of the ranger service in his park.

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The chief ranger or senior officer of the ranger service in each park will render to the supervisor a report on the efficiency of every member of his detachment.

We observe that the superintendent or supervisor is in direct control of the detachment of the park ranger force assigned to his park. It is his duty to prescribe the regulations for his detachment, and in doing so he should make them simple, comprehensive, and easily understood. He should instruct all the members of his force that authority and responsibility rests with those who have been placed in charge over them.

The chief park ranger of any park should be at headquarters and have general charge of the park ranger service. He is not only the chief, but is the business manager and inspector of the force. He should be in constant touch with his assistants and should accompany them frequently on their tours of duty. The assistant chiefs should spend most of their time in the field and be so familiar with the work of their men as to be able at any time to detect neglect and recommend indifferent or colorless men for discharge or to recommend deserving men for advancement. Each assistant chief is in charge of his particular section, and by frequent journeyings over his territory should satisfy himself that the force under him is alert and doing intelligent work. He should recommend changes in patrolling, where new trails should be made, new fire lanes opened, and any needed improvement to make the work of protection sure and to render accessible to the tourist the different points of interest in his section. We know that about 90 per cent of us need urging and supervision, and each of the chiefs should be men selected for their energy and skill in handling men and the traveling public generally.

The arms, uniform, and equipment of the park ranger should be those best adapted to the work, but bearing in mind that it is just as easy to be well and neatly dressed in the field as in other lines of work provided due care is exercised. These men are daily coming in contact with ladies and gentlemen who have made long journeys and who should receive the most courteous treatment and be offered every opportunity to see to the best advantage all that their time will permit. Too much stress can not be laid on the necessity of inspiring in this park ranger force the loyal spirit of public service; and men who will not arise to the full realization of the fact that they are engaged upon a grand work for the public good have no place in this service and should be eliminated. To guide and inspire is the peculiar work of those in charge, and to impress on the personnel the highest motives in this sphere of the public service will require conduct which produces the greatest amount of benefit upon these rangers when sharing in their field work.

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To be able to render the best service in patroling, the park ranger must be properly armed, mounted, and clothed. He must feel that his weapons are superior to those in the hands of any outlaw to whom he may be opposed; his mount must be swifter, and his clothing adequate to protect him against the rigors of the climate of his locality.

In order to render patroling work effective, a park of large area should be divided into divisions and sections, with one or more ranger stations in each section, so located as to make the patrol journey as short as possible and to enable the patrol to reach any point within his area in the shortest possible time. This will necessitate the building of park ranger cabins, but they need not be a blot on the landscape, as they can be so constructed as to blend into the landscape or be concealed within the timber.

A park ranger about to start on his journey, in addition to his arms, horse, and equipment, should have a piece of canvas with which he can make a canvas shelter effective against any weather, rations ample for the journey, cooking utensils, field glasses, a map of his park and contiguous territory, compass, notebook and pencil, ax, first-aid packet, and telephone tester. As soon as he leaves the ranger station he becomes a scout who must oppose his wits and energy against those whose life is spent in the open among the wild animals and who have taken from these animals those characteristics that we know are possessed by the fox, the cayote, the timber wolf, and the mountain lion. He who rides the trail in a perfunctory and aimless manner is but a joke to such men. To cope with such people he must learn from the Indian, who avails himself of every sign and indication that nature or wild life can give. The Indian never places himself upon the skyline until he is thoroughly satisfied that there is nothing within the range of vision to detect him. He will lie sometimes for an hour with his head against a bush, field glasses to his eyes, and scan the country, and then again scan it, for any sign of human life or for any movement among the wild animals which indicates the stranger in their midst.

The scout does not remain on the trail that has been beaten by somebody else—his enemy would not be there—but he is taking advantage of every inequality of the ground, of swale and the coulées, the branches of trees along the stream banks and the shady side of every ridge, observing carefully for indications of trails, fresh signs of horse, or any imprint of the foot. His eye must be so trained that even the bending of the grass would tell him a story and would arouse his suspicion. He should never build a fire by daylight in the country where he has reason to believe the enemy may be lurking. At night, in some canyon or in some sheltered spot where the blaze

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can be seen but a very few feet, he can build his small fire and cook his food for the evening and the next day. It is well for him to have enough food cooked ahead so that he can remain on the trail, or in pursuit of an enemy, for 48 hours without having to stop to cook. In his moments of leisure when resting he should make careful notes of all that he sees and anything out of the ordinary that he can not understand should be carefully described so that he may present this to his superior officer on his return for interpretation. Where he is called to points remote from his usual patrol route he should indicate such a journey on his map by use of his compass, etc. He should be careful to note the condition of the animals and whenever possible to count those of the different species for the information of headquarters. Any indication of sickness among the animals is of the greatest importance and should be reported at once, because epidemics are almost as frequent among animals as among human beings. Interference in any way, shape, or manner with the natural formations should be reported. Dead fish on the surface of the water is a dangerous symptom and would indicate fishing by use of explosives; and generally speaking, any indication that nature or any of her creatures has been disturbed should be given the closest scrutiny and reported to the officer in charge.

Men who will lend themselves conscientiously to this work are not common, and in their training it is of the greatest importance that their faculties of observation be cultivated to the extreme limit. These men must feel a pride in the work and strive to have their section the very best patrolled one within the park. We will not get a force sufficiently educated along the lines that I have indicated unless we all unite in systematic work and instruction, which can not be too comprehensive nor too painstaking.

Assistant to the Secretary Mather.

General Superintendent Daniels has been in consultation both in Washington and here with Col. Brett on the subject of ranger service. I wish we had the time to have a few words from Mr. Daniels now on this subject, but we will have to adjourn, and probably he will take it up to-morrow when he presides over the meeting of superintendents and supervisors. I hope that he at that time will go into the matter fully. I thank Col. Brett sincerely for his excellent paper.

The meeting on Saturday will be held at the exposition grounds, in the Southern Pacific Building, at 10 o'clock. Our conference tomorrow will be here in this same building, and we will begin at 11 o'clock. This will close the session for this afternoon, and I will ask the superintendents and supervisors to meet with me immediately afterwards.

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MORNING SESSION, MARCH 12.

ASSISTANT TO THE SECRETARY MATHER.

I think I will call the meeting to order as promptly as possible. We will have a relatively short session this morning, and we want to do some intensive work in it. To-day is particularly superintendents' day, and we are going to have an opportunity of hearing some interesting topics discussed by the general superintendents. Yesterday we were to have heard from Dr. Hopkins, of the Bureau of Entomology, United States Department of Agriculture, who has been doing some excellent work for us in two or three of the parks in the matter of stopping the destruction of trees by insects, particularly the lodge-pole pine trees in Yosemite National Park. I think Dr. Hopkins will give us his talk this afternoon after we have heard from the superintendents. It will be a subject which will be very interesting to all of the superintendents, and he has some suggestions to make which struck me as very interesting when he outlined them in Washington a couple of weeks ago. He will also have with him Mr. Sullivan, an entomological ranger, who did a large part of the work in Yosemite. I am now going to turn the meeting over to Mr. Mark Daniels, the general superintendent, who will act as chairman, and will conduct the meeting for the day.

MR. DANIELS.

When the matter of considering the various subjects that should be discussed came up it was decided that there was in each park a supervisor or a superintendent who had some particular specialty and was interested in some particular branch of the work and the method of handling some particular detail of the park work and knew more about the best methods than, perhaps, others did. For that reason we have given to each man a subject that he seems best qualified to handle. I will suggest that we are surrounded by all of the necessary equipment for giving statements the acid test, so I would suggest that the speakers stick closely to veracity. I will call on Mr. Walter Fry, superintendent of Sequoia and General Grant National Parks, for a paper on forest-fire fighting. Those two parks are in the southern part of the State, where the atmosphere is not so surcharged with water and forest fires are frequent. The result is that he has had more experience, perhaps, in forest-fire fighting in his parks than the supervisors or superintendents of any other parks have had. I have personally gone over a great deal of the country that he has protected and have become personally familiar with his methods of fire fighting. I am sure he has discovered several little tricks in the trade that ought to be given to the other superintendents.

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MR. WALTER FRY.

Ladies and gentlemen, since the creation of Sequoia and General Grant National Parks there have been 72 fires within them, with all of which I have had direct or indirect workings in order to subdue them. The subject which I have been assigned is a very large one, so I will not touch upon the methods of protection of forests from fires or the amount of damage by reason of fire, but simply the subject of forest-fire fighting.

Human measures for confining and extinguishing forest fires are variable and many; moreover, the possibility of effectually fighting them has long been a matter of doubt and dispute, so that most contradictory views on these points have obtained currency. Therefore it is imperative that a careful and continued campaign of education be exercised along these lines from which indisputable conclusions may be drawn.

The broad question of forest-fire fighting in our national parks is one of most vital importance, and I do not know that I can say much that is not already in mind, but the principal object of this contribution is to bring to the consideration of those charged with the very important duty of the administration of the national parks the necessity of a complete, comprehensive, and systematic plan for forest-fire fighting.

The methods of forest-fire fighting are not everywhere the same, because of modifying local conditions, but the general principles to be observed in connection therewith are very much the same everywhere. In view of these existing various methods and conditions I submit for your consideration a list of the character of forest fires and a general policy which I consider should be observed in fighting them, as I feel in this way we will get before the conference suggestions that will lead to expressions of opinion or experience or advice from various members with regard to the discussions of the most effective methods to be observed in all classes of forest-fire fighting.

Forest fires are usually distinguished under three different classes, as follows:

(1) Surface fires, which burn the surface layer of all dry inflammable material, green brush, seedling and sapling trees.

(2) Ground fires, which burn beneath the surface in deep accumulation of vegetable mold, and soil of peaty character.

(3) Crown fires, which burn through the crowns of the trees.

Surface fires may be extinguished on their first origin by beating them out with wet sacks, canvas, blankets, green branches, etc., or by covering outer border of fire with embankment of earth; but when once they gain headway, a clearing of the humus and inflam-

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mable matter should be made through the forest around them of sufficient width to prevent their crossing, or inside from which back firing may be permitted. The tools most suitable for use in this work are long-handled shovels, hoes, iron-toothed rakes, and axes.

The safest and surest method for extinguishing ground fires is by excavating a trench around them. The most effective tools for use in fighting them are shovels, axes, and mattocks.

Crown fires seldom occur other than in dense forests and when there is a high wind, the velocity of the wind regulating to certain extent the speed of the fire. One method of fighting them is to go a safe distance ahead of the fire and clear a narrow strip through the forest. Inside of and on windward side of this strip a back fire is started against the wind and toward the main fire, thus allowing the two fires to meet. If the main fire is traveling with great rapidity, the felling of a narrow strip of the trees inside of and near outer border of the area burnt over by the back fire will add further precaution in preventing the main fire from jumping across the burnt area. The best tools for use in fighting crown fires are axes, shovels, hoes, rakes, and cross-cut saws.

Quick arrival at fires with an adequate force of well-equipped men skilled in the work of forest fire fighting is of first importance.

Forest fires should be fought vigorously from the moment they are discovered in order that they may not get beyond control. They increase rapidly, and the more help that can be obtained the better.

Streams, roadways, trails, wet meadows, rocky ledges, and sand ridges are mechanical barriers, and such features should always be utilized when possible; all such places are useful from which to start back fires. They often check or stop a fire, and serve as vantage points from which fighting crews may work.

Points of vantage from prevailing winds should always be sought, and notation of any sudden changing thereof, as its shifting may suddenly turn the course of the fire, which may necessitate immediate changing of the fighting crew in order to prevent their suffocation.

More effective work can be accomplished in fire fighting in nighttime than in daytime, because the atmosphere is cooler and more humid.

A fire is more easily controlled on the top of a hill or ridge than on a level or hillside, because of the upward tendency of the flames and heated air currents, below which lies the inflammable matter.

Never leave a burning area without entirely inclosing it with either natural or artificial barriers.

After fires have been apparently extinguished, their outer border should be patrolled until their safety is insured, as new fires frequently spring up after old ones have ceased smoking.

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MR. DANIELS.

It is particularly gratifying to know that all of these papers are going to be preserved in permanent form. Mr. Gabriel Sovulewski, supervisor of Yosemite National Park, will now read his paper on "Trail building."

MR. GABRIEL SOVULEWSKI.

Before starting on this subject assigned to me by the Secretary, it is necessary and proper to bring to your attention some points which I think are important in this connection.

First. The most important point is that I feel honored to have such a prominent subject assigned to me as trail building; but, not being an engineer nor having the necessary technical training as such, I am very reluctant to enter on this field. Consequently, what you will hear on the subject of trail building will be only what I have gained by years of practical experience, and if that will be of any practical value to the park service, or any part of it, I shall feel well repaid and honored.

Second. My practical experience was mostly gained in the Yosemite National Park and applies to its conditions, though such conditions may apply to parks of the same altitude in California, and may apply to other parts, but, as I am not acquainted with the conditions in parks outside of California, I am not competent to judge.

Trail building is a very important work in national parks when we consider the object for which the parks were created, and on that account any official in charge of a particular park who will delegate trail construction to anyone not in sympathy with this object or who does not fully understand the meaning and intention of park creation, without personal inspection and satisfaction, will be liable to make a serious mistake.

There are many kinds of trails, and this applies also to roads; some constructed for different purposes and built with an object in view—that is, if I were to build a trail for a business purpose I would build it straight and direct to the point to be reached as economically and in as short a time as possible, without taking into consideration any interesting points on the way.

In national parks, however, such a construction of trails would not be desirable and contrary to the spirit and intent for which the parks were created; it also would be unjust to the public if the best natural features along the way were missed by them. Diversion from a straight path to points of interest, regardless of expense, is important and necessary. We can build many trails in the Yosemite National Park at very small expense if we would have as our only object the reaching of certain points; but in doing this we would lose

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something that can not be estimated in dollars and cents. I believe it is very important that every feature of natural beauty should be taken into consideration and diversion made to bring such features to the eye of the traveler. It will not be necessary to divert to a great extent from the course laid out; but it is important that trails be laid out along beautiful streams, through the different species of timber and interesting undergrowth, alongside and through rich green meadows and dashing brooks abounding in trout, and not omitting a single interesting feature that will attract the attention of the traveling public in order that the trail taken with these features included will be so delightful that the traveler will forget his fatigue in a review of the panorama unfolding before him at each turn. The trail along brooks and meadows will lead the traveler to many other beautiful views and points of interest, and finally he should be led to a picturesque lake and spot where he can rest and establish his camp for as long a time as he desires.

It is well known to all the park officials in this convention that one could talk and write on this subject without end, and the more he would say the more he would be disappointed that he had said so little, knowing and feeling that his subject has no end. Therefore this convention having a practical point in view it is necessary to take leave from this pleasant field and build the trail.

Trail building will be divided into six parts, and I will endeavor to explain in each part my method and procedure of trail construction in the Yosemite National Park.

It is my experience that exploring for trail building is the first and most important point of all, and, I may say, the hardest. It requires strength, determination, a natural instinct for direction, love for the work, love of nature, and an ability to forget everything for the time except the object in view, and to be able to sit in the saddle for 12 or 14 hours, or walk the same number of hours if required. One should never be satisfied with one day's exploring, but spend many days and explore many times, as he will be delighted every time he goes over the ground to find that he has discovered something new and to his particular advantage that he did not see before. The work is very interesting and delightful in spite of its hardships and dangers, but it will be seen by you all that this kind of work can hardly be done by a man that is a slave to time and confines himself to eight hours of work. I seldom take anyone with me on exploring trips in spite of the objections of my superiors, and on many days I do not return to headquarters until 9 or 10 o'clock at night. I had rather be by myself than to have a grouch along who would spoil my pleasure. And notwithstanding the many miles of wild country and animals, I never carry firearms—only my hatchet and pocketknife.

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After the country is explored and I am satisfied with my location, then the laying out of the trail begins by placing dry limbs against the trees, small rock monuments, or some other marks that can be defaced or obliterated and yet easily followed, but I never use an ax to make permanent marks.

The party of workmen varies according to the location and amount of work to be done, and the tools and materials for the different kinds of work and various places are furnished to them. The gang should not, as a rule, exceed nine men including the foreman, packer, and cook. The foreman should be a practical trail builder, have experience in woodcraft, know how to sharpen drills, repair and sharpen tools, and know how to use explosives to advantage. He should be able to take full charge and follow with the construction of the trail along the line laid out for him, taking advantage of the ground at places where an improvement can be made and which were overlooked in laying out the trail.

As to the kind of a trail to be built, in regard to the width or grade, it will depend entirely on the location and importance of the trail. Trails in Yosemite, leading from the floor of the valley to its rim, cross very dangerous and high cliffs, and their grades can not be limited on that account, even at great expense. We have some places on such trails where the grades are between 40 and 50 per cent. Not having any choice, but of necessity having to follow the course which is not in his power to avoid, the builder can not be blamed. They are wide and good trails—from 4 to 6 feet in width—and, on dangerous turns, even wider and perfectly safe.

In the construction of trails under favorable circumstances, ascending long, steep hills, the grade should not be lower than 15 per cent and not exceeding 30 per cent. The width of the trail will depend, as stated above, on the importance of the trial. I believe, however, that an approximate width of 4 feet will be sufficient for all purposes. In passing dangerous points the width may be increased to 6 feet or more, to give a feeling of security to the traveling public and to lessen the danger. To increase the general width of the trail over 4 feet will cost too much, and it is a well-known fact that a trail 2 feet wide is quite comfortable to travel over and answers it purpose, as trails are traveled in single file. Of course, there may be objection on the meeting of parties from opposite directions on a narrow trail, but on consideration of what has been said above these points can be handled locally according to the importance, location, etc., of each trail. It is my belief that all trails should be constructed in cuts by benching back, where possible, instead of building high rubble rock walls, but this method unfortunately can not be followed in places and dry rubble walls for trail support must be built, not as a matter of choice, but of necessity.

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The trail should be well brushed along its course in order that the traveler riding along will not be annoyed with overhanging limbs or undergrowth on the sides.

The cost of construction is of local consideration, depending on local conditions as to layout of trail, cost of labor and materials, distance from supplies, etc. The cost of trail construction in the Yosemite National Park varies from approximately $25 to $2,500 per mile.

In the construction of trails everyone admires regularity of grades, or I may call it regular railroad grade. It is admitted that the trail looks better on a regular grade, but for every practical purpose regular grade is undesirable for the following reasons. If the grade is regular, the trail will be subject to washouts a great deal more than if the trail has inclines just slight enough to let the water out at intervals of a few hundred feet. This will save the trail maintenance expense. Another feature in favor of trails with inclines in preference to a continued uphill grade is the relief to stock traveling uphill, which is very important, and all who travel mountain trails will realize its virtue.

In connection with construction, as soon as the constructing party advances with the trail, permanent small blazes on trees should be made where trees are available; where not, small permanent rock monuments should be established; across meadows where grass is apt to be tall poles could be used to mark the course of the trail. The preliminary marking, if too prominent when the trail course is slightly changed by the foreman in construction, should be removed to avoid confusion.

Ditching and provision for proper drainage is a very important part of construction and should not be overlooked in trail building. The foreman of trail construction must study each watercourse and stream and provide outlets, where needed, as he advances with his work, in accordance with the conformation of the country through which the trail passes and in accordance with the grade of the trail. Even with the greatest care mistakes are made and points overlooked that will show in a season or two after the trail is constructed and should be attended to without delay when noted. A trail without proper ditching and drainage will cost more in maintenance and repairs in places than if originally constructed in the proper manner. It is customary to use logs for water breaks on trails, but in Yosemite Park we are abandoning this practice by degrees and replacing them by more permanent breaks of rocks. They are generally made of flat split rock embedded in the ground from 10 to 14 inches, depending on the size of the rocks, leaving from 6 to 12 inches above the surface, taking into consideration the grade and location.

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There may be objection from old trail builders to permanent breaks on steep grades on account of the wearing of a steep hole on the lower side of the break, which makes travel uncomfortable, even to the point of danger, and the remedy employed for that in the past has been to change the location of the water breaks from time to time or by filling the wornout portion with dirt, if available. This practice is very seldom used on steep grades in Yosemite. The remedy applied by us at present, which works very much better on heavily traveled trails and is more economical, is to lay a rock pavement for 10, 15, or 20 feet on the lower side of the break. This makes the water break practically permanent and travel comfortable, as the water break remains always of the same height, and all that is necessary is to clear the ditch in the fall or before threatening storms to avoid damage. The same method is employed on steep grades where dirt is scarce for refilling the trail after being washed. It is true that this method in the first place is more expensive than filling with dirt, but this expense will decrease the cost of maintenance and in time prove its economy and usefulness.

The maintenance and repair of trails and their cost depend on location, grade, amount of travel, local conditions, altitude, and construction. If the trail has steep, heavy grades of 20 to 30 per cent and travel is heavy, the maintenance in proportion in almost every case will be expensive, though the local conditions as to kind of soil and materials used in construction, together with weather conditions, may reduce its cost. In altitudes over 6,000 feet in Yosemite the trails as a rule are very seldom damaged in the wintertime under heavy storms, but in summer washouts by heavy storms and cloudbursts are frequent. There can be no provision made against cloudbursts. In altitudes below 6,000 feet maintenance is more expensive on account of rainstorms and frequent thawing and freezing, the expansion causing slides of snow and rock. In our classification of trails we call those around the rim of the valley ledge trails, of which we have 38 miles, and the maintenance of them annually is approximately $22 per mile. The maintenance of the trails beyond the rim of the valley is approximately $7.50 per mile.

In concluding the subject of trail construction and in consideration of the importance of park development in relation to the intent and purpose for which they were created, it is my belief that no pains should be spared to build only the best possible trails, bearing in mind the object to be attained.

If I have helped in any way with my views and my experience on this important matter of trail construction in the national parks, I am well repaid for the pleasure and honor of the assignment to me of this subject by the Secretary.

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MR. DANIELS.

I listened rather attentively for something that might have been omitted, so that I could add it. I find that all I can add is perhaps to elucidate some of the points brought out in the paper, and that is Mr. Sovulewski's method of building checks at the turns in the trail. Unless the rain water is banked to carry it off along the trail it washes off over the edge of the trail. The object is to carry off this rain water, or run-off, without destroying the trail. A check is used in all trail building, but the difference between his method and the others is this: Ordinarily a log is placed to divert the water, but horses traveling cut a deep trench right in front of the check. The result is that in the course of two or three weeks of ordinary travel during the season there will be a hole perhaps 18 or 24 inches deep on the low side of the log check. Eventually it becomes a dangerous spot to the horses that are on the downward passage. Mr. Sovulewski has the idea of placing stones in such a manner so that when the horses come down or go up, they will step on the stones. This distance across is sufficient to cause the horses to walk on the stones. I think that is a very excellent method of building trails, and it has been used in several of the parks, and wherever it has been adopted it has had the effect of reducing the cost of maintenance and preventing the destruction of the trail.

After Mr. Fry's paper was read I neglected to ask for comment, so I would like to ask if there are any comments that any of the supervisors wish to make, or if there are any questions they would like to ask him.

MR. SOVULEWSKI.

I think Mr. Fry has covered his subject very thoroughly. The only thing I would suggest is that, if the paper is going to be published for the information and guidance of all of us, there is one very important feature that he has omitted, and Mr. Fry will probably agree with me on that subject. It is giant powder. In my experience I have had occasion to use giant powder in blasting out logs and have found it better than cutting them off with a saw. One can blast out probably 100 logs in the same time that he could cut through a 4 or a 5 foot log. That is the only thing that could be added to Mr. Fry's paper. I think that is the only way to fight a fire. There is no man living that can decide how he can fight a fire. When he commences to fight a fire he must be like a general of an army in the field. He must decide what he is going to do very quickly. He has not much time to think or much time to issue any particular instructions. When he gets on the ground he must decide upon the best methods very promptly. I think the use of giant powder is a very important feature in forest-fire fighting.

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MR. FRY.

All that Mr. Sovulewski has said is appropriate. I have omitted the possibility of using explosives in our national parks, because if you do not have an expert man to handle them, they would be dangerous to life, and very few of the men we have as rangers are experienced in the handling of explosives. It is utterly impossible for a ranger to go about carrying giant powder or other high explosives, therefore I omitted touching upon that subject. I realize the fact that there are various methods of using explosives for fire-fighting purposes and successfully; but the trouble with our national parks in California is that we have not men experienced in the handling of these explosives. I think it would eventually lead to a tendency for each man to want to carry explosives with him. I would not recommend explosives for use in fire fighting in our national parks at present. Under certain circumstances, if giant powder was available and you had experienced men to use it and the conditions were such that it would not ignite any inflammable material elsewhere, I would recommend it. It might be advisable to use it in a national park like the Platt, in Oklahoma, or in some such territory as that; but in my locality I do not think it would be advisable to use explosives, and that is the reason why I omitted touching upon that particular subject in this paper. It was to avoid the danger of bringing up a subject matter that would compel each ranger to carry dynamite or other explosives.

MR. SOVULEWSKI.

I see the point of view of Mr. Fry; that question must be decided for each particular locality. You know, Mr. Daniels, that I am using from 6 to 10 tons of powder in our park a year. We have men who know how to handle it, and we always aim to have that kind of men. They are there for that purpose. Mr. Fry does not use any powder, and that is due, no doubt, to a difference in conditions.

MR. DANIELS.

Where there are men who are expert in the use of powder, and where a fire is of sufficient magnitude to make it essential to blast out a lane, I think the use of powder might be advisable, but under ordinary circumstances I think I am inclined to agree with Mr. Fry that powder should be very sparingly used in forest fire fighting. I believe that elbow grease, a long-handled shovel, and plenty of dirt offer one of the best and most effective means of handling the situation.

Are there any of the superintendents here who care to make any comment on Mr. Sovulewski's paper upon trail building, or are there any question that they have to ask?

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Mr. Mills.

I have had some experience in the Rocky Mountains building trails and roads. I have found that a very cheap culvert can be built flush with the road or trail, and planking laid across it 1 inch apart so that the water which comes down on the surface of the road simply drops down through this planking and is carried off through the culvert. I have found this an inexpensive way of taking care of the water. In the Rocky Mountain region it has worked very successfully, and is much cheaper than the old method of embedding a log or stones.

Mr. Daniels.

Does not that clog?

Mr. Mills.

Occasionally, but that is very rare. If there is an excessive amount of sediment in the water, you can lay your planks a little farther apart. These culverts are commonly built of 4-inch planks, sometimes only 2-inch, but a 4-inch plank is the average. You have there a number of slots through which the water and sediment will drop through. The slots may be cleaned out occasionally, but that can be done in a very few minutes.

Mr. Daniels.

On what grade are your trails?

Mr. Mills.

Well, that works on any grade. Commonly these culverts are placed at right angles to the trail, but they may be placed at any angle you may desire.

Mr. Daniels.

We attempt to build our trails so that there is a drainage ditch on the inside of the trail, which slopes toward the outer side. The rain water runs into the ditch and there is some general run-off on the surface of the trail. The problem is to get the run-off off the trails.

Mr. Mills.

Let it drop right down into the ditch and the culvert will carry it off.

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Mr. Sovulewski.

Trail building is really a very interesting subject and I want to say that I am very glad that Mr. Mills has come out and told us something. But I do not think his method is practical in the Yosemite. Whether you build them of logs, timber, or anything else, those culverts will rot out in time, and then you have nothing left. Then again, logs are not always available. However, all of these points are very important and should be brought out. I am a lover of trails and a lover of parks, and I want to bring out all of these points for the sake of the information that we may get from them. I thank you very much, Mr. Mills.

Mr. Daniels.

I will have the satisfaction this year of visiting the new Rocky Mountain National Park, at which time I shall concentrate my energies on the solution of whether that is the right way to build a culvert or not. If there are no more questions to be asked on Mr. Sovulewski's paper on trail building, we will now hear a paper by Mr. Sherfey, who has built a great many bridges in Yosemite National Park. Bridge building is a subject that has been discussed by authorities on the subject in practical form in all of the technical papers that are published. One of our problems in the parks is the matter of bridge building, and it is unique. Nine times out of ten the problem with us is to get some logs together in such shape that they will make a bridge and support traffic over a stream. I believe Mr. Sherfey can give us some pointers on practical bridge building in parks that will be of much value.

Mr. David A. Sherfey.

There is no one that realizes more than I do the difficulty of presenting a technical subject to a general audience. It is a pretty hard matter for an engineer to make a technical subject interesting, much less to the public at large.

When I learned that I was expected to talk this morning on the subject of park bridges, the question immediately presented itself to me as to what was a park bridge, and, in searching about for a definition and an answer to the question, I tried to formulate one that was based upon my own observations in Yosemite National Park, principally, and somewhat in connection with what I have concluded from other observations, and I think the definition ought to be made in three parts. The first is a log bridge, or a bridge that is made from trees cut near the site of the bridge; the next is what the uninitiated might call a real bridge, consisting of arches or trusses;

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and the third is no bridge at all. I am sorry to say we have a few of those cases, where there is no bridge and ought to be one.

Now, as the majority of our park bridges are log bridges, perhaps I have made no error in assuming that I should talk more about log bridges than any other kind of a bridge. In fact, I think you park supervisors and park superintendents know more about log bridges than I do, but this bridge is of such general use in our parks and has served so faithfully the purposes of the pioneer that it seems to me that it is entitled to some scientific recognition, and if you will excuse the effort I will say that I have tried in my own way to show the limitations of the log bridge in a few instances only from an engineering point of view.

Now that we may understand each other it will be best to make a few definitions to begin with. First, what is a log bridge? It is a bridge composed of log beams, the logs being in natural condition or hewn, which are thrown across two abutments, and over which traffic may pass. The span of a bridge must be considered the horizontal space reaching from center to center of the abutments. The diameter of the log is the average diameter of the wood taken at the center of the log. That is, if you will remove the bark and the sapwood and measure the largest and shortest diameter of the log at its center and take the average you would get what we then call the diameter of the log. I realize that no such refinement as that is possible or could be carried out or should be carried out in the field. You can always get closely to the diameter of a log by very few measurements. In using a log we use it in two different shapes. There is the hewn log and the round log. As a general rule, hewing logs for bridges is perhaps unnecessary. There is a ratio between the depth and breadth of a hewn timber that will give its maximum strength as a beam. For instance, if we hew a log into rectangular form, maximum strength is obtained by making the depth of the beam 0.816 of the diameter and the breadth 0.577 of the diameter. Any variation from these dimensions would weaken the timber as a rectangular beam, but in so doing one-third of the strength of the log as a beam is lost.

We have two classes of bridges in our parks, the trail bridge and the highway bridge. I have taken some of the common timbers that we usually find at Yosemite Valley—yellow pine, tamarack, and incense cedar—and have calculated the maximum safe span for different sizes of logs. Perhaps in some of the other parks you have other species that are available. We know the working strength of these timbers, and figures 1 to 4 show the safe spans for the timbers under consideration, with an assumed factor of safety of 10.

The vertical scale in the diagrams represents the diameter of the log in inches; the horizontal scale represents the safe span in feet.

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If a line be drawn horizontally from a given point on the vertical scale to the curve representing the kind of timber to be used and then continued vertically to the horizontal scale, its point of intersection on the horizontal scale will indicate the safe span in feet for a log of the diameter selected. Likewise, if a line be drawn vertically from the horizontal scale to the curve, and then continued horizontally to the vertical scale, its point of intersection with the vertical scale will indicate the size log required for the span selected.

Figure 1 shows several spans for trail bridges 6 feet wide carried by three hewn logs 2 feet center to center and designed to carry a load of 50 pounds per square foot. The diagram shows that three 24-inch yellow-pine logs cut to rectangular form will safely span 33 feet, with the assumed loading. I do not mean to say that if you go beyond 33 feet with a log of that size the bridge is going to fall. However, that is a maximum safe span for yellow pine which will sustain 400 pounds per square inch of extreme fiber stress. If you use the incense cedar curve, a 24-inch yellow-pine log will span 44 feet; the fiber factor of safety, however, is cut down from 10 to a little less than 6.

Figure 2 gives data for a trail bridge 6 feet wide supported on two rough logs and designed to carry a load of 50 pounds per square foot. If you will compare the two diagrams (figs. 1 and 2), you will find that there is no advantage whatever in using hewn timbers for a trail bridge so far as strength is concerned.

The next type I have considered is a highway bridge supported on beams spaced 3 feet center to center. I have assumed that the bridge would carry a 10-ton road roller, in addition to its own weight. Figure 3 shows that if the hewn logs are of yellow pine 30 inches in diameter, the bridge will safely span 24 feet. The hewn timbers, of course, in each instance have been cut according to the maximum strength. Figure 4 gives the same data for rough logs, and shows that there is no economy in using hewn timbers.

For a highway bridge thrown across from abutment to abutment it is a waste of time, in my opinion, to hew the timbers unless there is some good reason for doing it. The chief objection to a log bridge, as we all know, is the shortness of its life. I find that by careful attention to details that this objection can be overcome in a measure, but not entirely. If we can design the abutment so that no moisture can collect under the logs the life of the bridge is materially increased. There might be several ways of doing that. If you go under any bridge of this kind you can see the effects of the water on it. Perhaps an even more efficient way would be to remove the bark from the log and the weaker portion of the sap wood and apply some wood-preserving paint. There are several kinds on the market, all

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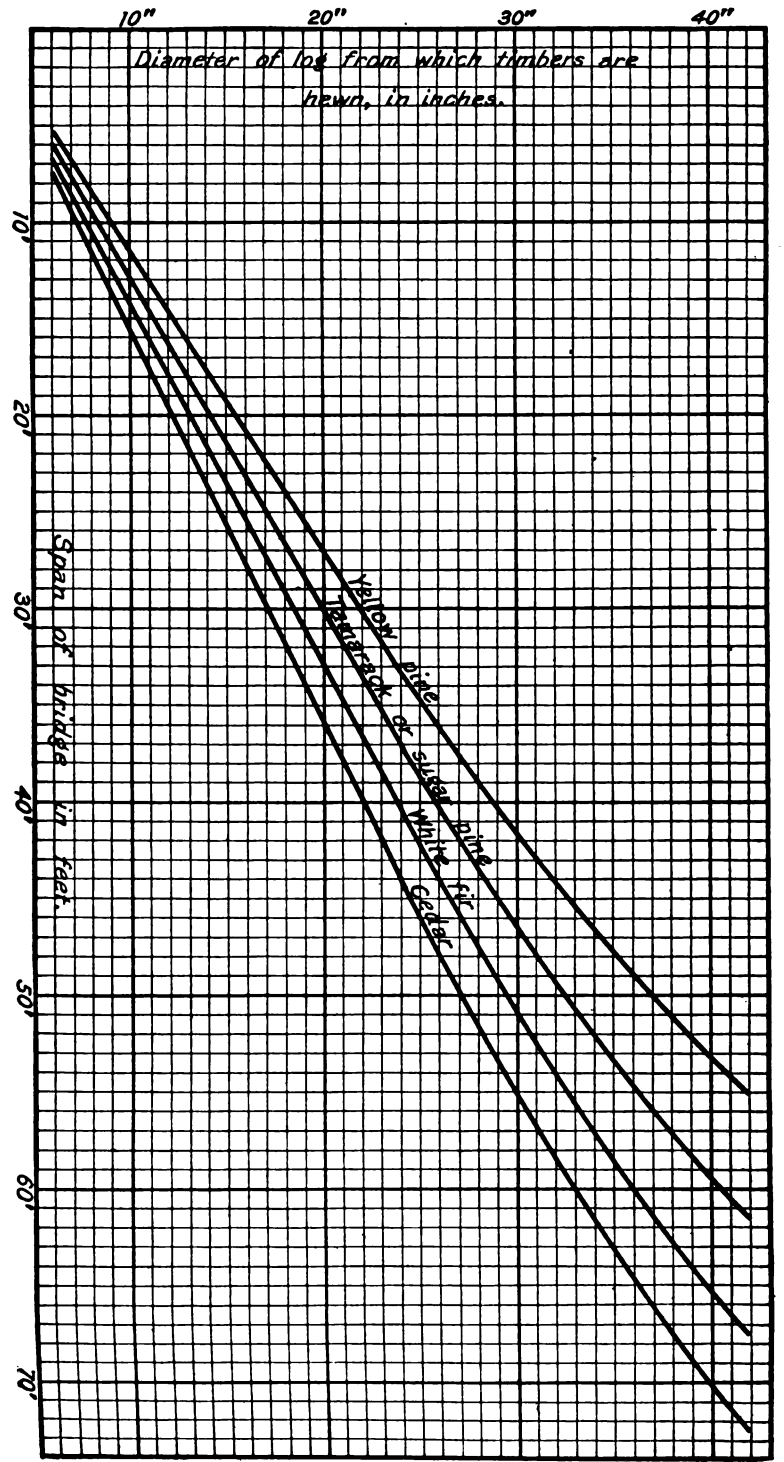


FIG. 1.—Diagram showing safe spans for trail bridge carried on three hewn timbers.

Bridge to have 8-inch floor and to carry a load of 50 pounds per square foot. Depth of hewn timber to be .816 times the diameter of the log; breadth of hewn timber to be .577 times the diameter of the log. Diagram based on following breaking strengths: Yellow pine, 400 pounds; tamarack or sugar pine, 500 pounds; white fir, 600 pounds; cedar, 700 pounds.

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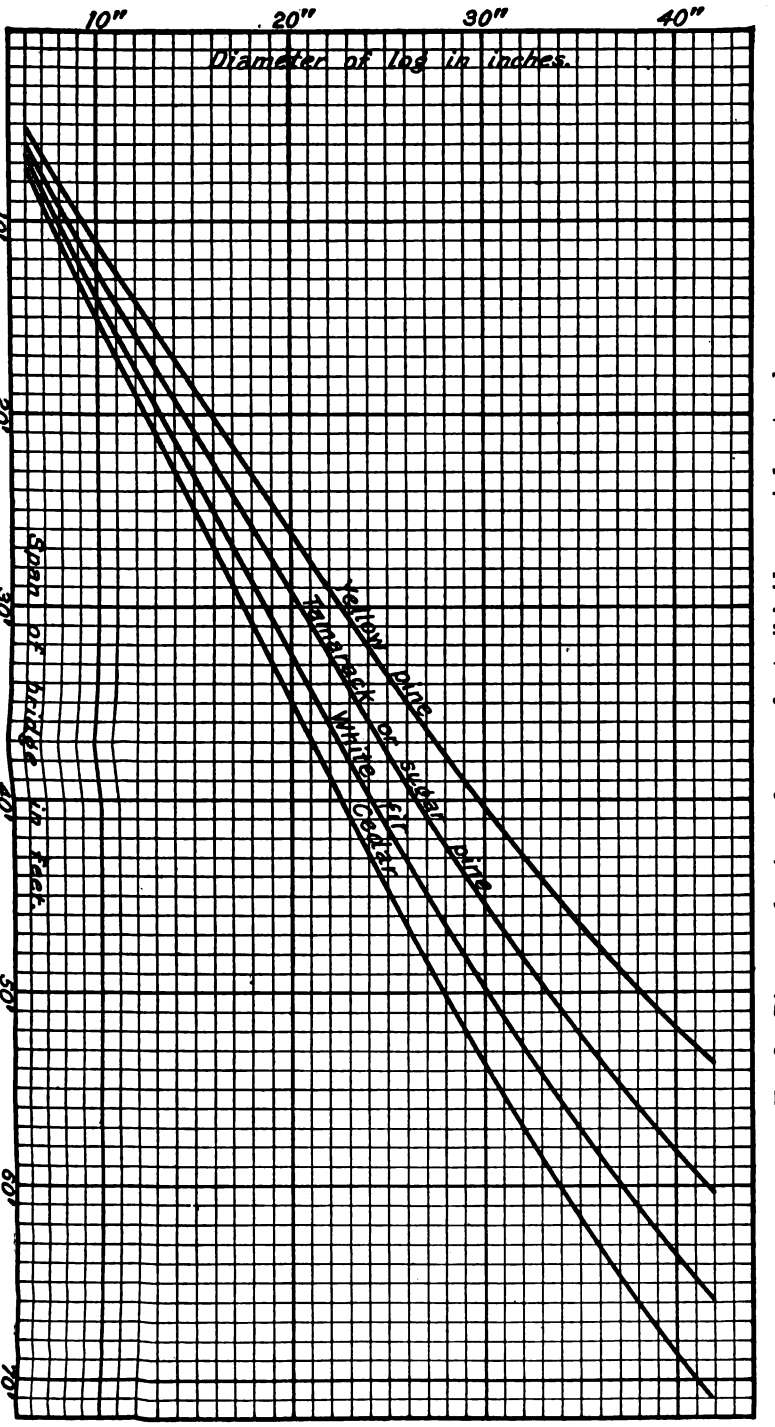


FIG. 2.—Diagram showing safe spans for trail bridge carried on two logs.

Bridge to be 6 feet wide, to have 3-inch floor, and to carry a load of 50 pounds per square foot. Diagram based over on following breaking strengths: Yellow pine, 400 pounds; tamarack or sugar pine, 500 pounds; white fir, 600 pounds; cedar, 700 pounds.

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having more or less value, but some of them are better than others and have produced very satisfactory results in the prolongation of the life of timber. One process that the men in the Forest Service have developed is what is called the copper-sulphate process of tim-

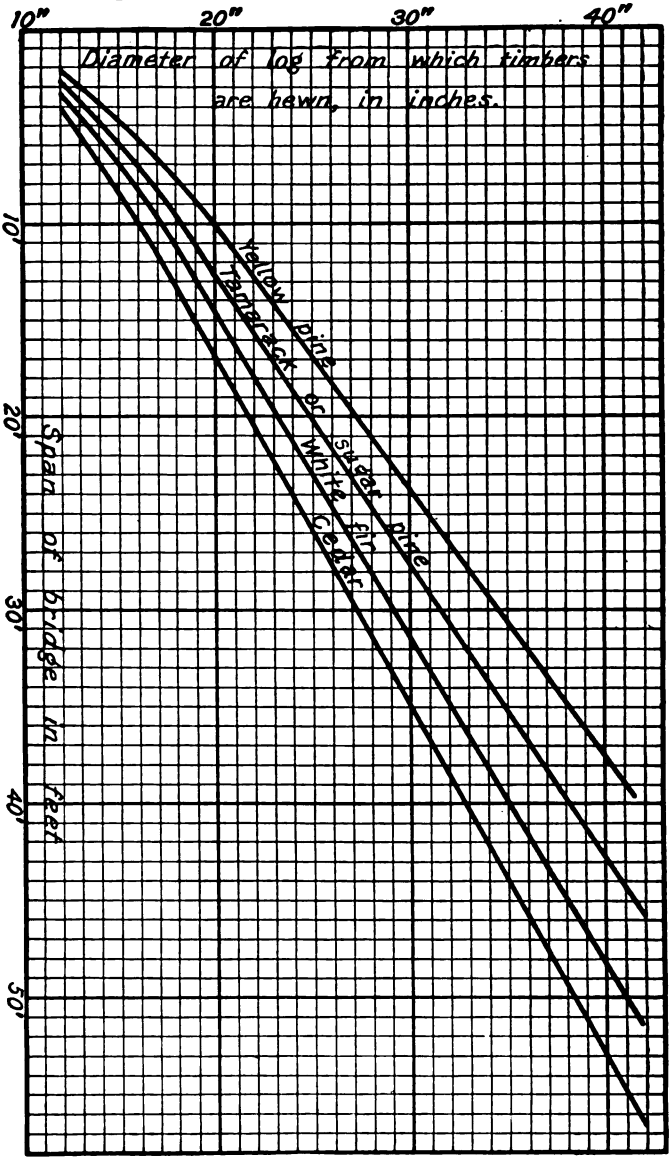


FIG. 3.—Diagram showing safe spans for highway bridge carried on hewn timbers.

Beams to be placed 2 feet center to center; bridge to have 3-inch floor and to carry a 10-ton road roller. Depth of hewn timber to be .816 times the diameter of the log; breadth of hewn timber to be .577 times the diameter of the log. Diagram based on following breaking strengths: Yellow pine, 400 pounds; tamarack or sugar pine, 500 pounds; white fir, 600 pounds; cedar, 700 pounds.

ber preservation, which requires some little apparatus, but the work is simple and the results effective. I will not go into that.

This, perhaps, concludes about all I have to say about log bridges. I hope the time will soon come when all our bridges will be of arch

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construction with reinforced concrete, plain concrete, or of stone, as the case may be. We have, I think, some very fine examples of these types in the Yellowstone Park, and I hope that we will soon have enough money to build all of our bridges in this manner. From a bridge of that type the scenery can be seen to advantage, with noth-

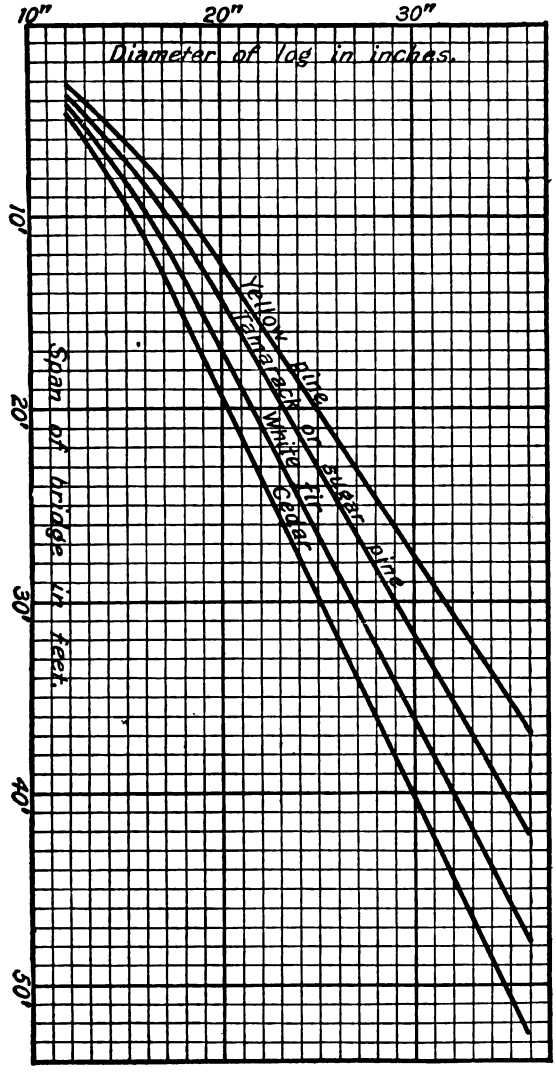


FIG. 4.—Diagram showing safe spans for highway bridge carried on logs.

Logs to be placed 3 feet center to center; bridge to have 3-inch floor and to carry a 10-ton road roller. Diagram based on following breaking strengths: Yellow pine, 400 feet; tamarack or sugar pine, 500 feet; white fir, 600 feet; cedar, 700 feet.

ing in the way to obstruct the view. The truss bridge never has been and probably never will be considered an object of beauty. It is an economical type of bridge and can be built for much less money than the arch bridge. We have been considering some bridges to be built in the Yosemite Valley, and an endeavor is being made to

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develop a type of truss bridge which will in the least manner be an offense to its surroundings and will afford the people an opportunity of viewing the scenery without looking between bars like the bars of a cell. One type is a bridge of iron or wood construction that has some unique features. This bridge has a span of 87½ feet and a depth of but 7 feet from center to center of the chords, with a total width of 12 feet. It is proposed to reduce the distance from the floor to the top of the top chord so that a person could walk over the bridge and get a good view of the scenery without looking through the trusses. All of the details have not been thoroughly completed, but we are working upon it in Mr. Daniel's office, and I believe we will have a type of truss bridge that will be very suitable for park purposes up to a span of 87½ feet.

MR. DANIELS.

A supervisor or a ranger is frequently confronted with the problem of replacing a foot bridge that has been destroyed. The first question that presents itself is how big must the logs be to make this span, and not infrequently it is a question of the logs that he has in his immediate vicinity to support the load that will travel over the particular creek or ravine. There has been in the Yosemite Valley and elsewhere an ever-present need for some sort of a tabulation that would give the ranger or supervisor at a glance what the minimum diameter a log should be in order to span a creek. For instance, he finds that it is 26 feet across the opening, and the timber that he has in the immediate vicinity is tamarack or sugar pine. Figure 2 shows that for a 26-foot span, using tamarack or sugar pine, 18 inches is minimum diameter of the logs, placing the logs on 2-foot centers. If he can get plenty of good yellow-pine timber 30 inches in diameter, he may want to know what is the maximum span that he can use on that class of timber. The diagram shows that 41 feet is the maximum span on which he can use yellow pine of that diameter.

If there are any questions or comments, I am sure that Mr. Sherfey will be glad to give you any information in his power.

MR. SOVULEWSKI.

I am no match for Mr. Sherfey in technical matters, but I have had a great deal of experience in constructing bridges. In the valley at present we have large bridges whose spans are from 65 up to 105 feet that have been constructed since I have been there. We all should take notice of what you have suggested in regard to the loads that could be carried. I do not agree with Mr. Sherfey that logs in long-span bridges should be used. When the span is over 25 or 30

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feet logs should be used, because it has been our experience that the sap rots the rest of the tree. In constructing long-span bridges we select large timbers and cut the sapwood off. A log cut that way lasts much longer than any other kind. As to the strength, of course it is an indisputable fact that some types of bridges have more strength than others. In the higher altitudes, where smaller bridges are used, I do not think those measurements would be required or necessary, because it is a well-known fact that when a large pole is peeled and seasoned it will last almost forever in a bridge. You have seen examples of that right in our parks.

MR. DANIELS.

Mr. Sherfey has spoken of the Yosemite Valley, in which timber of all kinds is plentiful and which is not a place like Mesa Verde National Park, where every stick of timber used in a bridge has to be hauled for some considerable distance. When that condition arises it becomes necessary for the man who is hauling that timber to calculate upon the size of the timber that he can use so as to save freighting unnecessarily heavy timbers to the point they are to be used.

MAJ. FRIES.

I think Mr. Sherfey made the statement that he hoped that bridges of arch construction would entirely replace all other kinds of bridges. I would like to ask Mr. Sherfey what he thinks of the girder type of concrete bridge in his neighborhood.

MR. SHERFEY.

I realize that we are all controlled, either directly or indirectly, by matters of personal tastes. I do not want to hurt the feelings of anyone at all in the matter, but I believe that as a general rule the girder type of bridge of reinforced concrete is inferior to the arch. At the same time I do not condemn the girder type of bridge. I have seen several very good examples of it, but I would personally prefer the arch wherever it can be used to advantage. I do not like to speak generally on anything in regard to engineering matters. We are called upon to build different kinds of bridges, and the conditions in each locality must determine the kind or character. Where you have a locality in which you can not use an arch bridge for some reason or another, why, I should say, build a girder bridge—a reinforced concrete bridge.

MR. DANIELS.

We will now adjourn until 2 o'clock this afternoon.

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AFTERNOON SESSION, MARCH 12.

Mr. Daniels.

We will continue our discussions of this morning which were interrupted by the recess. As we want to have a general conference with the concessioners after the speeches, and as papers by the supervisors have been presented, I will not call on Col. Brett now, whom I had in mind, to give us a little further talk on park-ranger service. Secretary Mather has pulled one of our teeth by calling on Col. Brett to read his paper yesterday afternoon, so we will hear from Mr. Ralston, of Glacier National Park, on "Road building."

Mr. Ralston.

Mr. Chairman, ladies, and gentlemen, my subject, as the chairman has stated, is road building, and after hearing the very able paper read by Mr. Allen yesterday on this same subject I feel somewhat embarrassed over what I have to say. My remarks will at least be brief.

The great object—if there be an object or intent—in nature is the propagation of life. One of the most desirable and commendable things in life is cleanliness—cleanliness of mind and body. In the human body wonderful nature has created the arteries, the highways of the blood which cleanse the anatomy to its farthest extremity. So, likewise, do the highways—the arteries of commerce—cleanse and stimulate the Nation. If the arteries of the human body are not clean, strong, and well laid out, the body as a whole suffers.

Obviously when our national, State, or county highways are poorly laid out, insufficient, or in bad order, the body of the Nation suffers from stagnation of commerce and business. The roads of the country are the highways or arteries of the Nation. The question of roads and road building is one that has occupied a prominent place in the life of nations since the dawn of history. We go back centuries before the birth of Christ and find the splendid system of roads built in Greece and Rome during the flood tide of their respective civilization. In England we find the Cæsars highway built under the direction of Julius Cæsar. Many miles of it constitute one of the splendid highways of England to-day. We read of the fine old roads of Spain, France, and Germany, many of them built many centuries ago, showing that people of those old countries in that far-away time regarded roads and road building as one of the vital problems of their day.

Primarily, most of these roads were built for military purposes, for defensive or offensive operations. But, happily, they served a

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much higher and grander purpose by being used as arteries of trade and commerce. Everything else being equal, the standard of civilization of each nation can be gauged by their roads. Take Africa, for example; consider her present backward civilization; no doubt her settlement was as early, if not earlier, than the settlement of Europe. Then mark the absence of the splendid highways which characterize the highly civilized countries of Europe. In our own country there is considerable effort being directed toward securing a well-defined system of national roads and obtaining from Congress a large appropriation for their construction. It is doubtful whether the American people are ready or willing to assume this additional burden of taxation, although the benefits derived from good roads would very greatly outweigh the burden of taxation. If it were possible to divert the $500,000,000 which is annually appropriated for wars, past and future, into a good-road fund, what wonderful constructive work could be accomplished. In order to realize this vast amount of money it is only necessary to say that if it were divided equally among the 48 States of the Union, each would receive a little over $10,400,000. Do you realize the vast improvement that would be accomplished by the judicious expenditure of $10,400,000 in your State? Should this be accomplished, it would not be a new departure of our Government. One of the early roads used for military purposes in America was the Washington or Braddock Road connecting the Potomac and Monongahela Rivers. Gen. Braddock marched his troops over it in his campaign against the French. The Santa Fe was one of the early western roads. The Santa Fe trail was probably first traveled by William Becknell and party in 1822. Later is was laid out and surveyed under the direction of a commission appointed by the United States Government and headed by Thomas Benton, of Missouri.

Judged by a common standard of accomplishment and without taking into consideration the elements of time and the accumulated expenditure of money and labor extended over the life of nearly a hundred generations, the United States does not make a very creditable showing. But when we consider that, during the past 160 years, there has been built in the United States, at least two and one-quarter million miles of wagon roads, and that many thousand of miles of these are splendid macadam or paved roads, and also consider the contributive elements of time, wealth, and experience which favor the older countries, we must believe that the work accomplished in this country is truly remarkable.

But, the people are awakening and are demanding better roads. Massachusetts, Pennsylvania, New Jersey, and New York are leading in this splendid work. New York is foremost in this great de-

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velopment and expended over $50,000,000 of State money on its roads between 1907 and 1913, and is annually spending millions on road improvement.

The West is making splendid progress in road improvement and extension. California, Oregon, Washington, Montana, and Idaho are all doing splendid work, with California leading. There is a section of country in northwest Montana, west and southwest of the Glacier National Park, comprising the country known as Lincoln and Flathead Counties; which, 30 years ago, was a wilderness of forest, lakes, and streams, explored only by the trapper and prospector. To-day numerous automobiles and thousands of horse-drawn vehicles traverse her hundreds of miles of fine roads. The road encircling Flathead Lake, covering a distance approximating 130 miles, built at an expenditure by Flathead County of upwards of $80,000, is a beautiful stretch of road. Picture to your minds a trip of 130 miles around the shores of what is known as the second largest fresh-water lake in America, opening up a panorama of lake, mountains, streams, and woodland, almost unsurpassed in beauty. The Lincoln County highway, starting at the Idaho line, following the beautiful Kootenai River to Libby, thence by way of Libby Creek, Fisher River, and the Thompson Lake region, traverses one of the most picturesque sections of the West. The Flathead Lake and Kootenai River country can be easily and cheaply visited by tourists visiting the Glacier National Park.

The pioneers of Montana are entitled to considerable credit for the skill and good judgment in laying out many of the old roads of this State, which are traveled to-day. They followed the lines of least resistance. Roads in pioneer days had to be built cheaply; most of the labor was contributed; a great many of them were laid out with the eye, neither level nor instrument being used. In most cases they followed water grades and they used good judgment in selecting routes over which good road material was to be had. We, to-day, can profit by their experience, so far as grades and road materials are concerned.

The value of good roads is almost inestimable. They bring the farm and city closer together; they afford quicker and cheaper communication and exchange of products between agricultural and manufacturing districts, which creates a community of interests and brings about a better feeling. Where good roads have been constructed, it has almost cut in half the cost of getting farm products to railroad points and to market.

In order that you may understand the magnitude of the saving wrought by good roads I will state that if a saving of 3 cents per bushel were made on 1,000,000,000 bushels of corn and wheat, the magnificent sum of $30,000,000 would be saved. This saving alone

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would build an additional 3,000 miles of road, costing $10,000 per mile. But our transmutation from savagery to civilization and the welding thereof can not be measured by dollars and cents. A great philosopher has said "From the soil we came, to the soil we shall return." Most, if not all, grand thoughts and ideas originate through close contact and communion with the soil and it is to the opportunity which good roads give to the people of our cities to return with greater facility to the country soil, that we owe our best thanks. The influence of the clean earth, morally, physically, and in every way, is incalculable to the denizens of the busy city hives.

There are three very essential things to be considered in successful road building—grades, drainage, and road material. It is advisable to select the best possible grades that are consistent with good drainage. But perfectly flat roads over bottom lands are hard to drain. Water from melting snow or from heavy rains accumulates and stands in the gutters or drainage ditches, and if the road material be of earth as in the case of 90 per cent of the roads of this country, the standing water soaks through. The heavily laden wagon or automobile passes over, ruts are made in the softened earth, wagons and automobiles follow and deeper impressions are made in the earth, and unless the water is drained off and the road repaired it soon becomes impassable.

Furthermore, there are three salient features of the highland road which should give it precedence: Firstly, general symmetry and beauty; secondly, facility for construction, class of material, and drainage; and last but not least important, because such routes usually occupy land which is the least valuable commercially and agriculturally. Local needs and conditions often preclude such selections, but experience teaches that wherever a choice is possible the high routes should be selected. However, soil conditions vary according to the section, and it is only through a careful examination of different conditions that the best results may be obtained. Drainage is perhaps the most important thing to consider, for without good drainage it is practically impossible to have good roads. In the actual construction of the road, some give more attention to crown, but my observation has taught me that if the drainage is perfect the crown, if well constructed, will require much less attention. This may seem a very simple problem to those who have not seen, as I have, the necessity of rearranging one-half the system of drainage on a new road within one year of its completion.

The roads to be built in the national parks should differ from the ordinary road, in that their purpose is to better display the natural scenic beauty of our national playgrounds and thereby encourage our own people to visit these spots of scenic interest and save to our

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country the wealth now annually contributed to Europe through the medium of the American tourist.

To this saving extent our roads will be both commercial and scenic, and should follow well-chosen points of vantage to show to the tourist, to the best advantage, the magnitude and splendor of the park. In fact, all considerations bespeak the selection of these routes. The drainage can be made almost perfect at a minimum cost, and it would be hard to find better natural material than that which exists on every hand. This material classes with the best natural material to be found anywhere.

So far in this paper I have dwelt principally upon routes, drainage, road materials, commercial advantages, etc., for the reason that the monotonous repetition of detail necessary in describing the actual construction is tiresome and uninteresting. Suffice it to say, that one common method is used by enlightened road builders all over the United States; first, selection of route, bearing in mind road material, etc.; second, possibilities of good drainage; third, actual construction, tools, etc. If the route be over ground on which it is possible to use plow and grader, the work can be quickly and cheaply done. On ground that is comparatively flat the entire width of roadbed should be plowed, then the greater part of the road can be made with grader. For practical road building the blade grader is the best. After plowing, start with the grader and move the earth toward the center sufficient to make the necessary crown, which should be from one-half to five-eighths of an inch to each foot width of road. In throwing up the crown, care should be taken to break up the sod. If the sod is tough and does not break up readily, it should be removed from the road. After the sod is disposed of, the earth breaks up easily and can be spread in thin layers until the proper height of crown is attained. The common slip or fresno can be used to fill in low places, after which the grader should be used to smooth down high places and give the road a uniform grade. Sidehill grades are worked largely on the same principle, excepting that the earth is most all moved one way, and where the hill slope is steep slips and fresnos are used until sufficient earth is removed to enable the grader to be used. The necessary drainage culverts are put in before the grade is started and the drain ditches are made as the grade progresses, and where practicable extra drain ditches are made to catch the surface water from rain and melting snow and convey it to culverts, preventing the overflow waters from damaging the road. Lastly, we have maintenance, without which our work would be wasted. However, I will not discuss methods, emphasizing only the value of the drag and recommending its diligent use. I refer you to the various departmental pamphlets on this and kindred subjects. The wealth of detail given embraces comprehensively the

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entire subject, excluding nothing desired by the ambitious and energetic road builder.

In conclusion I will say that the great stimulants of commercial liberty are competition and criticism. The road builder has been tested in these crucibles and while some base ore has escaped, the amalgam as a whole will assay high. Let us invite criticism and welcome it with the proper spirit, for only in this way shall the trail blazer and road builder ultimately attain the homage and recognition which is his due. Much has been said pro and con as to the excellence of work performed in the past. Let me say that the man does not live who is not prone to mistakes and with few exceptions the finished work of the road builder should prove a source of pride to the ctiizens of the Nation.

MR. DANIELS.

I want to say that Supervisor Ralston has recently completed a road the cost of which the Secretary of the Interior was told would not under any circumstances be less than $28,000. At a conference with the Secretary in Washington he asked me if I thought it was possible to build it for less money. I told him that I thought Mr. Ralston could do it. I might say that the road was completed last year, with the exception of surfacing a small portion, at a total cost of $12,500, and that road, if anything, is a little bit superior to the road which it was proposed to build for $28,000.

We have in every park road problems, of course, but Maj. Fries is particularly engaged in road building of considerable extent. I would like to ask him if he has not something that he can tell us that will enlighten us further on the subject.

MAJ. FRIES.

Mr. Chairman, ladies, and gentlemen, I have not prepared anything on this, and probably would not have had much time if I had been called upon, because I did not get into Yellowstone Park until last June and I have been very busy building roads. I have had no time to prepare any paper about them, or talk very much about them. I have had my hands pretty nearly full attending to roads, and we have pretty nearly every character of road to build that is at present encountered. We are starting in to build some high-class roads with broken stone and oil finish and we go from that down to roads where we will spend a hundred dollars a mile on them. In these cheaper roads the main thing is the bridges—wooden bridges that we heard about this morning. For instance, in one stretch of about 10 miles we built 55 wooden bridges and culverts ranging from 4 feet to 40 feet in span. In all of these I attempted to get at costs. To reduce

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the costs, I want to second what Mr. Ralston has just said about the use of the fresno scraper, slip, and grader. Get them large enough and put enough animals on them to keep them going. That is the big item in road building if you are going to get it done for any reasonable cost.

In this connection I have often thought of the four qualifications of an engineer, and for the first qualification I will put down common sense. If he has got common sense he will do his work; while he may do it slowly and make mistakes, he will get something done. The next two requirements are hustle. Then I would add to that education; then you will have an engineer who can do the work as well as it can be done.

The practical side of our organization is very essential if the roads are of any great extent, as they are in Yellowstone Park, some 300 miles of road under construction and repair at one time, with a short season to work in. It is necessary to have four or five hundred men at work. Supervision must be very carefully done. If the animals have to subsist on forage they must be looked after with great care, because the tendency of men in that country is to bring in poor animals and feed them up at the expense of the Government. For instance, we found one place after a little bit where the foreman was not watching the foraging of the animals and they were costing too much. We put one man on that job to look out for the foraging, and we saved $6 a day for about 15 or 20 teams.

Inspectors must follow up the work at all times. I do not care how good a hustler the foreman is, if the engineers and overseers do not keep right on his track, he is not going to do as much as he will if the engineer or overseer is on his track. When you get to building the higher class of roads and bridges, then transportation becomes a very great question. As we heard this morning, the type of a bridge is determined by the cost of the material and the distance which you must haul your material.

In Yellowstone Park we are building a great many concrete bridges. I take issue with my friend this morning on concrete bridges only to the extent that he said that the arch bridge was the only one practical that should be used if you have money enough. I disagree with that. I believe there are very many places where you have straight lines that a girder bridge is better, no matter how much money you have got to spend on it. It is a difference of opinion whether concrete bridges are more desirable in parks. In Yellowstone Park we build some wooden bridges, and I will say that if you get your logs heavy enough that they will stand three or four times as long as lighter logs. For instance, if you use lighter logs, your bridge may last three years instead of eight or nine years, and that costs you just three times as much.

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We expect to put up some steel bridges in the park, and we are going to put concrete floor on those steel bridges, because replacement of floor is one of the most expensive things we have to contend with in the maintenance of our bridges. It makes a little bit heavier bridge and a little more first cost, but the cost of replacing the floor is very great. I have heard a great deal said about grades. We have reduced the grades of our roads in Yellowstone Park 8 per cent to 6 per cent. If you put down oil macadam and you put your grades too steep, it is impossible for animals to travel over them.

In building our roads we use rock crushers and road rollers, but we have not as yet decided what are the best. We have tried gasoline-driven ones and steam-driven ones, and have found that the steam-driven ones are cheaper.

I do not care to take up any more of your time, because if I started to go through the 300 miles of road work I have encountered during the last summer and since and told you about all of the troubles I have had I could keep you here for hours. Our problems are all alike. The trail is a different thing from a road only in this, that you have a less load to carry and you have no wheel travel. On a road you have heavier travel and faster travel, and where you are going to use automobiles you have got to flatten your grades, widen out your roads, and cut down your curves. You have also to build heavier bridges. Of course the only difference between a trail and a road is in the traffic, but there are just as many chances for economy in trail work as there are in road work. If you have to practice economy in the building of roads, build them right from the start and save enormous repair expenses.

MR. DANIELS.

This subject of road building in the parks is so vital that I would like to ask every supervisor if he has any questions to put on the subject to do so without any hesitancy. I have two or three thoughts on the subject that I will give you after you have fully discussed this subject. Well, I am glad to see that all of you seem to know that everything has been told.

Dr. Parks, of the Hot Springs, has rather a unique and unusual duty to perform. Those are the only hot springs, in that sense of the word, in the United States. The attendance at the Hot Springs outside, I suppose, of the local attendance from the city, averages from 125,000 to 150,000 people per season. His problems are perhaps entirely different, with but very few exceptions, to the problems we have in the other parks. Nevertheless, if the present campaign which the department is now preparing to enter upon for the

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dissemination of information is carried out successfully, we hope that there are several other parks that will give Arkansas Hot Springs a pretty lively race for attendance. For that reason it is particularly timely that Dr. Parks should tell us about the Hot Springs and its problems.

DR. W. P. PARKS.

Mr. Secretary, ladies, and gentlemen, my paper, as Mr. Daniels has just stated, will be a little diversity from the other papers. Mine will be a diversity from road building to health building.

Mr. Secretary, superintendents, and others, I deem it a distinguished honor to be permitted to attend this meeting in the glorious State of California and represent as best I can what the people of Arkansas think to be the world's greatest combined health-pleasure resort.

While there are no positive historical data fixing the date of discovery of these hot springs it is presumed from legendary traditions handed down that they were discovered by the nomadic primitive races and their healing waters were used for many generations before the coming of the white man. From the most reliable historical data available at this late date it is believed that these now famous Hot Springs were visited in 1541 by De Soto, and that his proud, chivalric band of Castilians were the first white men to drink from the "fountain." As nearly as can be established, the first white settlers came in the year 1800. Dunbar and Hunter of the Lewis and Clark expedition visited the Hot Springs in 1804, and their report shows that they found an open log cabin and a few huts built of split boards, all constructed for summer encampment, which had been erected by persons resorting to the springs for the restoration of their health. A cabin was built there by Manuel Prudhomme in 1807, and he was joined in the same year by John Purciful and Isaac Cates, who camped here and engaged in hunting and trapping. From this time on history is complete, and shows that the fame of the springs began to spread and each year added to their patronage. Toward the end of the twenties there were permanent settlers at the springs. In 1832 four sections of land was reserved by the Government with the hot springs near the center, and in 1878 this land was platted and sold to various claimants, with the exception of that which now comprises the permanent Hot Springs Reservation and all of the hot springs. At the time of this subdivision the Government retained a large number of city residence lots, practically all of which have since been sold from time to time at public auction by order of the Secretary of the Interior after due advertisement. None of these lots, however, were within the bounds of the permanent reservation, but located in the city proper.

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The Hot Springs Reservation now has an area of 911 acres, consisting of five units: Hot Springs, North, West, and Sugar Loaf Mountains, and Whittington Lake Reserve Park, but the hot-water springs issue forth only from the west slope and at the base of Hot Springs Mountain, which embraces 264 acres. The 46 springs with an average daily flow of 826,000 gallons and an average temperature of 135° F, are confined within an area 500 by 1,400 feet.

Situated as they are in a spur of the Ozark Mountains which are noted for their beauty, the hot springs are surrounded by natural scenic conditions that are all the heart could wish, and to sufferers of various diseases they offer a thermal radioactive water and climatic conditions unequaled. No mineral waters yet discovered show as great a number of cures or yield relief to such a range and variety of ailments. Located in the meridian of temperate winds which meet and blend the pure refreshing northern currents with the balmy breezes of the Tropics, thus producing a delightful medium and equalization of temperature; surrounded by the virgin forest-covered mountains which stand, like sentinels, with their cliffs and rugged environs abounding in romantic situations and picturesque scenery; endowed with a thermal water ample in volume and range of temperature and radioactive to a marked degree, to minister to the multitude, the springs are happily situated to contribute to the ultimate objects of man—health, longevity, and pleasure.

The wisdom of the retention, control, and supervision of these springs under the fostering care of the National Government has been fully demonstrated during the years which have elapsed since its title was established. The trust reposed in the Government by the people has been guarded with extreme care. The springs are now the property of the people, free from monopoly and extortion, and within the reach of all. The obligation assumed carried with it responsibilities which have been discharged in a manner befitting their protection and benefit, and is a guaranty that in future years this priceless boon to suffering humanity will be administered with characteristic fidelity to the end that it may remain the common heritage of all mankind.

These waters, emblematic of purity and symbolic of cleanliness, are warmed by the mysterious designs of God's providence and charged with His richest blessings for the human race. Hygeia, robed in her spotless garments of health, has pronounced her magic spell over the waters which gush forth from the mountain side, and like the pool of Siloam, they breathe the eloquence of a mysterious power—the modern Bethesda whose waters are ever stirred by the angel of healing.

On assuming charge of the reservation as superintendent August 4, 1914, I was fortunate in finding a corps of efficient employees which

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have been of great assistance in the proper administration of the affairs of this office. The problems with which we have to contend are entirely different from those encountered in any of the other national parks by reason of the fact that a large portion of the 125,000 or more annual visitors calls at the superintendent's office for information and advice relative to doctors, bathhouses, hotels, etc. The information given is necessarily general in character and in most cases a circular of general information issued by the department and a list of the registered physicians is furnished to the applicant. A large number of these persons are sick, debilitated, or nervous, and extreme care is taken to see that all receive kind and courteous treatment, which is highly appreciated by the visiting public. The visitor is the principal asset in Hot Springs, and should be treated with due consideration and made to feel at home upon his arrival. Economy is practiced in the expenditure of funds, and practically all improvement work is done by day labor under direct supervision from the superintendent's office, thereby saving the profits that would otherwise go to contractors and giving the Government full value received for every dollar expended. A complete daily report is rendered by the manager of each bathhouse, showing the name, home, and local address, attendant and doctor, if any, of each purchaser of a bath ticket, together with the total number of baths given each day, supplemented by a sworn monthly statement of the business of the bathhouse, and then at the end of each fiscal year a sworn annual statement is submitted by each bathhouse and the Arlington Hotel, showing the total receipts, itemized expenditures and net profits for the fiscal year just closed. These reports taken as a whole furnish data for a complete and comprehensive record of the business of the bathhouse.

During the month of November, 1914, the Hot Springs Reservation was signally honored by a visit from Hon. Bo Sweeney, Assistant Secretary of the Interior, accompanied by Mr. W. B. Acker, assistant attorney in the department, who for many years has been closely connected with the national park service. While here they had an opportunity of meeting by appointment, in the superintendent's office, a large delegation of the city's most prominent business and professional men and, after each citizen had expressed his views relative to the different matters pertaining to the best interest of Hot Springs and the Government reservation, the Assistant Secretary took up the different matters separately, which had been under discussion, and handled them in such an able and practical manner that his remarks were the subject of much favorable comment by those present.

This visit was made at a most opportune time, during the week in which the Arkansas State fair was held here, at which time there was a large attendance of people from all sections of the State, headed

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by Gov. Hays and staff, together with nearly all of our other State officials, all of whom were delighted with the interest the department was taking in this resort.

A few days later in the month, on Thanksgiving Day, we were honored by a visit from the general superintendent and landscape engineer of national parks, Mr. Mark Daniels, whose eminent reputation in his chosen profession had preceded him. It is to be regretted that during his two days' stay it rained almost continually, thereby preventing him from viewing the reservation under favorable conditions. However, he expressed himself as highly pleased and prophesied a great future for this resort. The idea advanced by Mr. Daniels of mapping out a definite and fixed plan of improvements and of completing as much thereof each year as the funds made available by Congress will permit appears to me to be practical, and an excellent plan to adopt for future extensive and permanent improvements, as work done at haphazard is often unsatisfactory. I do not think there is a more advantageous place in this country for a landscape engineer to display his genius, nor one where his accomplishments would be enjoyed to a fuller extent by a greater number of America's health-pleasure seekers than on the Hot Springs Mountain, from which flow the far-famed hot waters of mysterious healing.

Also, in the latter part of September of the same year, the reservation was visited by Mr. T. Warren Allen, Chief of the Division of National Park and Forest Roads of the Department of Agriculture, who made a tour and thorough inspection of the system of mountain roads on the reservation, and took occasion to express himself favorably regarding their general condition.

These visits are beneficial in many respects and bring about a better understanding in the department as to physical conditions as they actually exist, and I now want to extend, on behalf of the citizens of Hot Springs, an urgent and cordial invitation to the Secretary, Hon. Franklin K. Lane, and to the Assistant to the Secretary, Hon. Stephen T. Mather, to visit the Hot Springs Reservation at their earliest convenience, and assure them of a most hearty reception. I feel that this is the most valuable reservation owned by the Government, because of the fact that it affords an opportunity for restoration to health of hundreds of thousands of its citizens who are afflicted with ailments, in which these life-giving waters are beneficial.

Among the more important improvements on the reservation during the past two years may be mentioned the following:

A white-way lighting system was installed on the reservation front, or Bathhouse Row, as it is known; at the present time it consists of 19 five-lamp ornamental electric-light standards placed at

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intervals of approximately 100 feet along the inside line of the sidewalk. It is interesting to note in this connection that, although the Government system was the first white-way system in Hot Springs, it was followed within a few months by the installation of an extensive and elaborate system on the main business streets of the city, along the same lines.

The drinking pavilion on top of Hot Springs Mountain, erected a few years ago, was finally supplied with drinking water in the summer of 1914. This improvement includes an ornamental pressed brick, tile-roofed pump house, equipped with an electric pump, and a pipe line, storage tank, and drinking fountain. When one considers the popularity of this mountain for exercise, recreation, and rare scenery, with both visitors and residents, the importance of this improvement can be readily recognized.

Nine substantial and ornamental concrete bridges have been erected on Hot Springs Mountain at various points, many of them permanently replacing old wooden bridges that heretofore required renewing every few years.

An additional impounding reservoir for the conservation and distribution of the hot water was completed under the Fordyce Bathhouse during the past year. This reservoir has a capacity of approximately 72,000 gallons, and our facilities for the handling of the hot water have been materially increase by the construction of this reservoir.

A sprinkling system has been installed on the west slope of Hot Springs Mountain facing Central Avenue by an extension of the city water-supply line with numerous hose connections. As droughts of from 4 to 10 weeks' duration are of yearly occurrence in Arkansas, this sprinkling system has been and will continue to be of immense value in the preservation of the naturally beautiful appearance of Hot Springs Mountain, this slope of the mountain being at present parked and set out in shrubbery from the base to approximately one-third of the distance to the summit.

In addition to 580 linear feet of new concrete walk, curb, and gutter on Reserve Avenue leading to the superintendent's residence, all worn portions of the various concrete walks on the reservation have been renewed.

Several hundred linear feet of rubblestone retaining walls and concrete gutters have been constructed along the mountain roads on the reservation, though there yet remains a large amount of work of this nature to be done.

To prevent a recurrence of earth slides on West Mountain, which have been numerous, with consequent heavy expense to the Government, in the past, a solid masonry retaining wall, containing approximately 7,000 cubic feet, was constructed at the point on West Moun-

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tain where most of these slides have occurred, and it is believed that future trouble at this point has been obviated by this action.

In the nature of an experiment an ornamental fountain of native tufa rock, with a basin approximately 12 feet in diameter, was constructed near the main entrance to the Hot Springs Mountain Reservation, adding much to the appearance of the grounds.

Guard railings of 2-inch galvanized pipe have been constructed at various points on the reservation, and at present there is little danger to anyone exercising reasonable care at these points.

In addition to the above items there have been a number of minor improvements, such as the construction of a new wire fence on the northern boundary of the reservation, the reconstruction of the drinking pavilions on Fountain Street, or Happy Hollow, and on Central Avenue; the planting of 36 beds of various bulbs, the construction of walls and gutters in ravines on Hot Springs Mountain, the moving and resetting of 6 iron light poles from the reservation front, after the installation of the white-way system, to the superintendent's official residence and grounds. Approximately 4,000 yards of gravel have been hauled and distributed on the surfaces of the various mountain roads, and in other ways the 10 miles of mountain roads have all been maintained in a high state of repair during this time.

This work, with the necessary repairs and renovations, has been sufficient to keep the regular reservation force of laborers, with some additional labor from time to time, constantly employed in the protection and improvement of the reservation, in keeping with the policy of constant betterment of the Government's possessions at Hot Springs.

Foremost among the immediate needs of the reservation is either an entirely new free bathhouse on the present site or extensive repairs to the present building. For the last two years the average daily number of baths given at this institution has been around 500, and it is imperative that some arrangements be made to continue the administration of free baths to the indigent.

The interior of the building now in use has deteriorated to an alarming extent, though the foundation and walls are in fair condition; and while a new modern building would be preferable a thorough remodeling and renovation of the old building would probably put the house in shape to meet the demands of the service for the next few years. If made, these repairs should include new plumbing throughout, a new roof, a separate bathing department with at least two tubs and a shower for the exclusive use of employees of the reservation, and the arrangement of the second floor to provide facilities for a free clinic for the treatment of needy bathers by local registered physicians free of charge. At all events, it is essential

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that something be done in regard to this bathhouse in the very near future.

A modern completely equipped greenhouse should be constructed at a point on the reservation, preferably just in the rear of the bathhouses on Bathhouse Row, where the sunlight would be available; the present old greenhouse being directly in the rear and to the north of the Arlington Hotel, is rarely reached by the rays of the sun. This proposed greenhouse could be erected near the free bathhouse and heated by the plant in the bathhouse.

A modern comfort station should be erected convenient to Bathhouse Row, preferably near the free bathhouse also, as in that way the necessary janitor work could be performed by the employees of the bathhouse.

The driveway leading off Central Avenue at the main entrance to the reservation should be paved from Central Avenue to the free bathhouse. Also, Fountain Street, bounding the Hot Springs Mountain Reservation on the north, should be paved with a suitable material from Central Avenue to a point even with Government monument No. 36, at which point Fountain Street connects with the system of roads on Hot Springs Mountain, and Reserve Avenue, bounding the reservation on the south, should be paved from Central Avenue to a point even with monument No. 26, which would take the pavement just past the grounds occupied by the superintendent's official residence. It is believed that the property owners on the opposite side of these streets from the reservation would be willing to pay their proportionate share for such a valuable and needed improvement.

A new roadway should be constructed down the west slope of North Mountain to connect the mountain road system on Hot Springs and North Mountains with Ramble Street, thus connecting the north end of the city with the roads on these mountains. The details of this proposed roadway have been submitted to the department and I understand are now in the hands of the general superintendent for consideration.

Retaining walls and gutters should be constructed along the driveway on Fountain Street, or Happy Hollow as it is known, and connected with the system of walls and gutters on Hot Springs Mountain, and all points on the mountain roads not now protected should be protected by the construction of retaining walls and gutters.

Provision should be made by the Government for the construction of a storm sewer and surface-drainage system to properly care for the drainage of the reservation. This matter is the subject of an exhaustive report submitted to the department in January, 1913, by Geographer Sledge Tatum and Engineer Barnett.

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A new impounding reservoir with a capacity of at least 200,000 gallons should be constructed to better facilitate the handling of the hot water. A good location for this reservoir is in the rear of the Maurice Bathhouse and to the left of the main entrance to the reservation.

The present system of parking on the west slope of Hot Springs Mountain could be greatly and profitably augmented by extension to the summit and the rugged beauty of this portion of the reservation greatly enhanced. The present system for sprinkling could be extended along with this work.

In connection with the item last mentioned, and in order that more time and labor could be devoted to the work embraced therein, Whittington Lake Park, on account of its inaccessibility to the majority of visitors, should be ceded to the city of Hot Springs for a municipal park, being at present largely used by residents in that portion of the city, or the park should be cut up into city lots and sold. If this is not done, however, a new iron fence should be erected around the park, and the bed of the creek running through it protected by a concrete bottom and sides where necessary.

Concrete bridges, similar to those recently constructed on Hot Springs Mountain, should be built at certain points on West Mountain.

Considering the relatively small size of the Hot Springs Reservation as compared with our other national parks, the work outlined above should be easily accomplished, and I am sure that it merits the very best and most earnest efforts of the department.

Approximately $750,000 has been expended in the construction of new bathhouses in Hot Springs during the past four years, and at least half of this amount has been spent in the past two years, and I think we can safely say that we have as fine, if not the finest, bathhouses in the world. The last one completed and opened on the first day of this month cost $200,000.

Recently conclusions have been reached by the department relative to the Superior Bathhouse site, and negotiations are under way for the replacing of this bathhouse with a new and modern structure. There yet remain four of the old frame bathhouses on the reservation front, but the leases on three of these have expired some time ago and the lease on the fourth will expire at the end of next year. It is only a question of a very short time until all of these will be replaced with modern fireproof structures of ornamental design, and when they shall have been completed I sincerely believe Bathhouse Row, with its beautiful lawn and flowers in front and the magnificent and stately Hot Springs Mountain Park for a background, will be one of the most attractive show places in America.

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There are 20 bathhouses now receiving hot water from the reservation, and with their recently increased facilities it is probable they can accommodate comfortably 25 per cent more bathers than bathed during the past year. The highest degree of sanitation and ventilation has been required by the Government in all houses recently constructed, and this policy should be maintained with reference to bathhouses yet to be constructed.

The nefarious practice of drumming patients to doctors was started in Hot Springs some 40 years ago, when visitors were forced to reach this resort by means of the old-fashioned wild western stagecoach, the same as those which were in common use in California in early days. The drummers in those days would ride out 10 miles or more on horseback and meet the stages coming in and solicit the passengers to the different hotels and later to some doctor who would split his fee half in two with the drummer.

During the past 10 years the department has promulgated rules and regulations setting forth conditions under which registered physicians may prescribe the baths, which if followed to the letter would eliminate the practice of drumming, but this office has experienced much difficulty in getting evidence sufficiently strong in character, as viewed by the department, to justify the removal of any of the doctors' names from the registered list for some time past.

When evidence of drumming is taken by the superintendent against any doctor the same is submitted to the Federal registration board who in turn reviews it and transmits it to the department together with such recommendation as in its judgment the case may warrant. The Federal registration board is composed of three members appointed by the Secretary of the Interior, the present members being Drs. Charles Dake, L. R. Ellis, and J. L. Greene, all local physicians of high standing.

Even though the desired results have not been attained with regard to drumming, the constant investigations being made by this office have deterred this practice to a great extent and it is safe to say that conditions have been much improved during the past two years. Drumming as it exists now is usually consummated through a "confidence game," that is to say, the visitor will be approached by some person shortly after his arrival at the boarding house, who secures the confidence of the visitor, perhaps by telling him that he had the same trouble himself when he came here. The strange visitor will almost invariably ask who his doctor is and usually employ him, thereby drumming himself. The proprietor of the boarding house is the person who receives the split from the doctor. However, vigilance by this office has reduced drumming to such an extent that it is now confined to a very few doctors.

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The department has during the past caused investigation to be made as to the chemical contents of these waters, but the physiological action has never been scientifically determined with reference to the effect of the baths on either the sick or the healthy subject.

The baths have been given empirically for such ailments as they seemed to benefit, much as patent medicines are used. Being owned and controlled by the United States Government, a scientific investigation should be made, giving as accurately as possible the physiological and therapeutic effects of the waters of the Hot Springs of Arkansas. No such authoritative information officially exists, and therefore the physician in another State who may have thought of sending patients to Hot Springs does not do so. He would be prescribing an unknown agency. He would not think of prescribing a drug whose effects had not been proven and described physiologically. So the large majority of the physicians of the entire country smile knowingly when a patient speaks of going to Hot Springs and ask why hot water is not just as good at home, hot water being hot water the world over.

Suitable investigation by the department, reported as authentic by the department, would change this attitude, for hot water is not hot water everywhere the same.

The fact is that patients rarely get a really hot bath at Hot Springs—at least, a bath above the normal temperature of the blood. They can get them as hot as can be borne, but the average temperature at which the baths are prescribed at that place is 98° F.

What then is the effect of this water? Let me first call your attention to the effect of a hot bath of the ordinary kind taken anywhere else. You may place a healthy person in a tub of ordinary hot water, as hot as he can get into it, say at 107° F., and after he has been there with the temperature maintained as high as can be borne for 20 minutes, you will notice that his sublingual temperature is unchanged or very slightly so. The skin may be hotter, but the heat-governing centers have seen to it that the conducted heat has been cared for; there has been no increase in general cell activity and usually no increase in the pulse rate after the first shock of getting into the very hot water.

It is necessarily true that the body temperature is the same on the Fourth of July and on Christmas. The thermolytic center, if working, prevents the absorption of conducted heat; if that center is not working properly a sunstroke follows exposure to heat. This rule never varies for warm-blooded animals in good health.

On the other hand, you may place a person in good health in a bath of Hot Springs water even at a temperature lower than his normal temperature, and you will see a remarkable change. The subject with a normal temperature of 98½° F., lying in a cooler

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medium than his own blood, will experience an increase in temperature. Usually in 10 minutes the thermometer under the tongue will show a temperature of 100° F., in 12 to 15 minutes, 101° F., and the subject's temperature is known to have gone much higher. Taking the water internally adds to the rapidity of the reaction. If the water is very active it is not necessary to immerse the entire body in order to get the reaction. If only the feet are kept in the water the subject's temperature will go up, though more slowly, as might be expected.

Where does this heat come from? Certainly not from the water, as it is colder than the subject's blood. At the same time the pulse rate is correspondingly increased 30 or 40 or even 50 beats per minute, depending upon the individual's peculiar heart action. If the heart action is very excitable from any organic or functional cause, sudden syncope is sometimes observed.

When removed from the bath the subject sweats profusely, as he should do when sweating off a fever, and in about 40 minutes his temperature is about normal, the pulse running a little higher than normal for a longer period, depending on individual idiosyncrasy. The period of increased cell activity, also the duration of the sweat and extent of elimination, may be prolonged by a few minutes in the vapor or hot room, or both.

Where does this increase in body temperature come from? Evidently some quality of the water has started a general increase in cell activity throughout the subject's body. The blood cells work faster; the cells of the bone marrow become more active; the cells of every organ must feel the stimulus; the muscle cells give up waste products as after severe exercise, and this general increased metabolism causes a corresponding rise in the body temperature. Something has "started the pot to boiling," as it were, in that subject, and he furnishes the heat himself for this increase in temperature.

The good of the tub bath at Hot Springs is due to this increased metabolism, with the subsequent elimination and reconstruction, and the increase in cell activity is directly measurable by the increase in body temperature.

The results of this increased metabolism are two-fold—eliminative and constructive. The elimination through the skin is shown by the sweating and by the uric-acid eczema which occurs in certain cases from the early baths, to disappear after a number of baths have given sufficient elimination.

The elimination through the kidneys is proven by the high specific gravity of the urine, 1,030 or more, seen in nearly all cases after a few baths even when the water lost in sweating is compensated for by increased ingestion and even when the urine is kept at or above the normal quantity.

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The elimination is also shown, contradictory as it may seem at first glance, by the constipation following the baths. The constipation is due to lack of bile, the so-called natural purgative of the bowels, and the lack of bile is due to the liver cells being crowded with effete material in the process of elimination. The constipation follows the baths whether the hot water is drunk or not. Mild saline purgatives usually suffice to overcome it, though occasionally recourse must be had to classical "liver medicines."

The constructive metabolism following the baths is shown most typical in chronic malaria, where exists anemia, hemaglobinæmia, and a balky condition of the hematopoietic system. After a few baths the picture changes and there can be no doubt that the change is due not so much to elimination as to hematogenesis through increased activity of the cellular elements of the blood, bone marrow, spleen, etc.

The question for years has been, "How does the water cure?" or in other words, "How is the physiological effect produced?"

No drug or chemical known to science will, if taken into the system, cause such an increase in cell activity, and it naturally follows that the repeated chemical analyses of the waters throw no light on the subject. Thinking observers long since came to the conclusion that such an effect must be due to a force and not to a chemical substance, and electricity or some electrical condition of the water was often suggested as the source of its power. But this explanation failed to gain credence because no known application of electricity would produce such an effect.

Since the discovery of the X ray and later of radium and radioactivity of substances brought in contact with the salts of radium, a good working theory has been brought out to account for the physiological effect of the Hot Springs baths.

First, it was found by observers that incidental to the application of the X ray, especially if in small dosage and at comparatively long distances and long duration, a distinct increase in metabolism, followed by increased elimination, occurred, so much so that its use was contraindicated in chronic kidney disease at certain stages. Later it appeared that radioactive substances had a similar effect. And it was found by Profs. Boltwood and Pratt, of New Haven, making tests of this water for the department, that the waters on the Hot Springs Reservation are all radioactive to a marked degree and that this radioactivity is due to the presence of a radioactive gas.

I wish again to call attention to the fact that physicians all over the country are under the impression that these are merely hot baths. They deter, in all honesty, patients from going to Hot Springs, declaring that hot water is hot water anywhere and advising the patient to take hot baths at home. I wish also to emphasize the fact that

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while this water comes out hot, and would not remain radioactive if it came out cold and had to be heated, as it would then lose the gas in which resides the radioactivity, still that water being hot is merely incidental, and that the baths are not given very hot and that the water is just as effective at a lower temperature as at a higher, if not all dead water from the exposed cooling tank.

The increase in metabolism is not the only physiological effect of a Hot Springs bath. There also occurs a marked fall in the blood pressure. This fall is fully equal to that obtained by the high-frequency D'Arsonval current used with the autocondensation pad. It will average 20 millimeters of mercury in normal individuals and a 50-millimeter fall has been noted during one 20-minute bath in one case of very high blood pressure. This fact is not known officially, and before the present war began thousands of Americans went to Nauheim for treatment for high-blood pressure, leaving a more efficacious resort at home.

There is also a rise in the opsonic index in patients suffering from most diseases, tuberculosis and cancer being notable exceptions, as the increased cell activity in those diseases means increased destruction and waste. In cases of chronic malaria we have a most marked rise in the opsonic index, meaning the ability of the white blood cells to destroy disease germs.

To cure a disease of bacterial origin we must give immunity, and in no other way can health be restored, and the question arises, How can be the radioactive baths give immunity? Increased cell activity is probably the answer. The method of this brings up for our consideration the effect of forces upon all cell life, and brings to mind many things analogous but not directly bearing upon the subject. The house plant, pale and white and stunted, an example of sluggish cell action, becomes, when put out in the sunlight, the acme of cell activity. There are certain rays we may say which are necessary to the growth, health, and good color to plant life, an example of the effect of a force upon cell action.

In considering the physiological effect of any crude drug due attention is paid to the quality of the various specimens of the product. Now, it must be admitted that as used the Hot Springs baths are crude, and, as might be expected, the results vary at the different bathhouses. The radioactivity of the water depends, according to Boltwood and Pratt, who made the first department tests, upon the presence of a radioactive gas. This gas is, of course, lost to some extent by exposure of the water in the cooling tanks which each bathhouse provides, as there must be a tank of cool water with which to temper the bath, the hot water being delivered to the bathhouse at a temperature of from 135° F. up.

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This variation of results at the different houses, even when supplied with water from the same reservoir, is not due to any change in the water as it emerges from the earth, but, as before stated, to the duration of the exposure in the primary reservoir and to the age of the water in the cold tank at the individual bathhouse. Bathhouses with very large cooling tanks would be expected to have a slow bath, the larger bulk of water cooling more slowly would be longer exposed and become more inactive and would probably also be delivered at the tub even warmer than from a smaller cooling tank, thus requiring more of the inactive water to cool the bath and a greater dilution of the fresh active water from the hot side. The results could be made more uniform if the primary reservoirs were made as small as possible to still serve their purpose and if the cooling tanks were done away with and the water on the cold side of the tub faucet delivered through a refrigerating coil.

There are adjuncts to the baths at Hot Springs—the vapor bath, the hot room, the needle bath, and shower—which may be used, as at other places, to meet some of the indications of hydrotherapy or thermotherapy, but none of these are peculiar to the place, and in the tub only is seen the true Hot Springs effect.

We have summed up crudely what we know about the physiological effects of the Hot Springs baths—they increase metabolism, raise the body temperature, accelerate the circulation, increase elimination, lower the blood pressure, and raise the opsonic index by increasing the activity of the phagocytes, and also have the usual hydrotherapeutic and thermic effects of other hot water.

How valuable it would be if we had an authoritative presentation of the therapeutic effects of these hot baths—their effect on the sick. Thousands of sick people need Hot Springs baths, and there is no one to tell them so, while, on the other hand, hundreds go to Hot Springs who can not be helped by the baths and many who can be harmed by them. Consumption and cancer have been mentioned as contraindicating the baths. Any disease in the fever stage is also contraindicated. Organic heart disease is supposed to be a contraindication, but in certain forms of valvular troubles the baths are very beneficial. These facts should be known. Other patients who have taken a lifetime to acquire gout or arteriosclerosis or chronic joint conditions go to Hot Springs expecting to get as good results in three weeks as a case of subacute rheumatism, when they should be told before leaving home that they can only get results in months, not weeks. The baths are wonderful enough and have a very wide scope of usefulness; they can kill your taste for liquor, cure chronic malaria, promote fecundity in the female, do beautiful work in subacute rheumatism, good but slower work in neuritis, give help in arterio-

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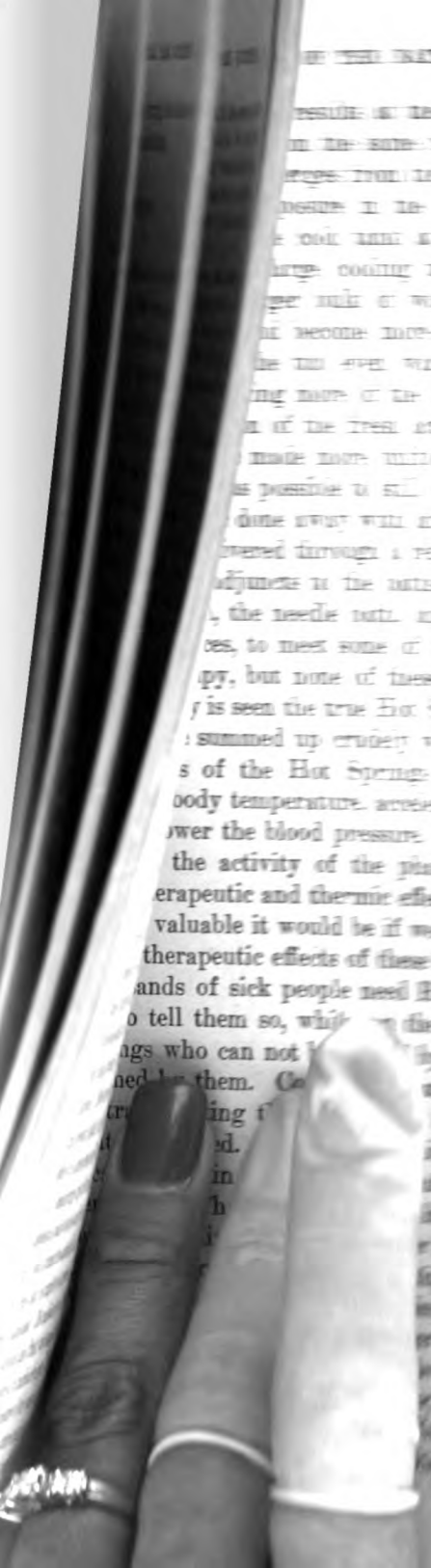
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sclerosis, eliminate uric acid to some extent, and aid all forms of lowered metabolism, and then some other things; but the public needs definite information. A few years ago a bill was introduced in the House of Representatives to appropriate $100,000 for the expense of a commission which was to take two years in which to investigate the physiological and therapeutic effects of these waters. It is to be regretted that the bill did not pass. Such an investigation would secure data for publication which would enable any physician in the world who chooses to inform himself what patients to send to Hot Springs and which to keep at home.

MR. DANIELS.

I was rather skeptical of Arkansas Hot Springs until I visited there. I have seen people who have gone to Arkansas in wheeled chairs, crippled and distorted with rheumatism, and I have seen them shortly afterwards, after taking the treatment of the baths, run at a pretty good speed and catch a train. Hundreds of people who have taken the course of baths at Arkansas Hot Springs annually have been greatly benefited, and there is absolutely no question of the efficacy of these waters in certain cases. I believe that Dr. Parks's paper brings out a point that is very, very important, that of classifying the diseases and illnesses that would be remedied by the waters of the Arkansas Hot Springs.

If we ever hope to get any appropriation necessary to defray such expense we can only do it by the backing of a sufficient number of people who will urge the matter before the Committee on Appropriations in Washington.

We have another park in which there are medicinal waters, and during my visit there I met some 60 or 70 people. This was at Sulphur, in Oklahoma, and Col. Sneed, who is superintendent of that park, suggested that I ask these visitors who were congregated in a room at the hotel why they came to Sulphur, Okla. I found that out of the sixty and odd that there were only eight who had not come there either to die or with the hope possibly of getting well. I never saw a huskier crowd of men in my life. The medicinal qualities of the Platt National Park springs have not been published and there are not many people in the country that know about them, but Col. Sneed is here, and I believe he has a little paper or at least can give us a little talk on the subject. Have you anything you can give us, Colonel?

COL. SNEED.

Ladies and gentlemen, my trip since I left Platt Park has been a wonderfully pleasant one and a liberal education. I have enjoyed the different talks and papers that have been read before this con-

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ference. I have learned something about our national parks that I never dreamed of before.

Platt National Park, at Sulphur, in Murray County, Okla., meets many conditions of national character. The waters are varied and bounteous. The landscape is characterized by a conglomerate rock formation of rare occurrence and immense masses of late Travertine formation.

Historically Platt Park is a monument to the amicable relations which the Indians of the Five Civilized Tribes maintain with the white people among them.

Provision for the segregation of the area included in Platt National Park was first made in the agreement between the Federal Government and the Indians of the Choctaw and Chickasaw Nations for the allotment in severalty of the lands which these tribes had held jointly and in common. This agreement was a voluntary concession by the Indians of this tract for public uses, in which the white people of their country might share. The agreement was submitted by act of Congress of July 1, 1902, to a vote of the Indian tribes and was ratified by them on September 25, 1902. The original area was 629.33 acres. An additional 218.89 acres was granted by act of Congress of April 21, 1904. The original designation of "The Sulphur Springs Reservation" was changed to "Platt National Park" by joint resolution of Congress of June 29, 1906, in commemoration of Senator Orville H. Platt, of Connecticut, who had interested himself greatly in its establishment.

The Sulphur Springs of Platt National Park have been a favorite resort for the Indians since their migration westward, and their old Council Rock is a notable feature of the park.

There is not a shadow of race antipathy between the white people of Oklahoma and the Indians of the Five Civilized Tribes. These Indians are excellent people, intelligent, manly, and independent, and are frequent visitors to the park. The Platt Park congressional district until recently was represented by one of these Indians, and another one now is United States Senator from Oklahoma. The retiring governor of Oklahoma, who is a Kentucky gentleman of the best type, is an intermarried citizen of the Choctaw Nation.

Within the Platt Park are many mineral and three nonmineral springs. The waters are highly medicinal, especially the outflow of the Bromide and Medicine Springs, which are in constant demand for nervous affections and disorders of the stomach. Extreme care is required in the conservation of the Bromide and Medicine waters, but the flow from the other springs is abundant. The Antelope and Buffalo Springs, which are nonmineral, approximate a discharge of 5,000,000 gallons daily, although once in the history of the park and

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once before in the memory of the old Indians the flow entirely ceased for a short period. These springs are the head of Travertine Creek, which is fed continuously along its course from other springs hidden in the bed of the creek. It would be possible to develop several of these springs into distinctive features. Medicine Spring and Cold Spring have been developed in this way since the park was established.

The elevation above sea level at the Bromide Spring is 929 feet, at Antelope it is 1,080 feet, and at Buffalo Springs it is 1,078 feet. Travertine Creek courses 2½ miles wholly within the park from its head springs to Rock Creek, and in the immediate vicinity of its mouth are the principal sulphur springs. It is a beautiful brook walled with and flowing over travertine rocks and bordered by narrow vales heavily timbered with native trees. It has a fall of approximately 150 feet and does not overflow its banks. More than a dozen cascades and as many shining pools have been deemed worthy of particular designation, and have been photographed by thousands of visitors.

Rock Creek is much larger than Travertine, and is subject to periodical overflows. Until the numerous flowing wells in the city of Sulphur were developed Rock Creek did not flow steadily above the mouth of Travertine Creek. There are now 20 of these flowing wells which show no sign of abatement after six years, and the flow of the springs does not seem to be affected by them. All but one of these wells within the city limits are now capped, but three outside of the city are flowing without restraint. It is hoped the State authorities will assist in regulating them also.

The general altitude of the Platt National Park is about 1,000 feet above sea level, but it has several hills which rise 200 feet and more higher. One of these hills, from beneath which Bromide and Medicine Springs emerge, faces Rock Creek with a towering wooded bluff about 250 feet high. Alongside this bluff, about midway of its face, a trail has been hewn which looks out to the north across a broad, rolling prairie. This trail was one of the earliest improvements made in the park, and it continues to be one of the most popular.

In the beginning of the park its resources were principally applied to developing and protecting the sources of water supply and making roadways for public travel.

During the administration of the second superintendent about 40 young trees were planted. One half of them had died by May 1, 1909, and but few of them are now living. During the next administration 178 young trees, including elm, oak, walnut, pecan, and box elder, were planted and about one-fourth of them are now living. Already during this administration, which began February 14, 1914,

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180 young trees have been planted and all of them are in thrifty condition.

From July 1, 1913, until October 25, 1913, Platt Park was without an appropriation for maintenance, but out of the previous year's appropriations the four superintendents had laid out, graded, and macadamized 1,525 linear feet of new driveway along Travertine Creek, with six culverts, and on June 30, 1914, there was a total of 10,337½ linear feet of similarly macadamized driveways and 25,062 linear feet of other graded roads. At the end of the new macadam road along Travertine Creek a new spring of pure water was developed and improved, and designated "Cold Spring." About 50 acres of wooded dell adjacent to Cold Spring were cleared of underbrush and a picnic ground established with benches and tables for the accommodation of picnic parties. Forty-eight new benches were placed elsewhere in the park, and the work of eradicating the Canadian thistle was prosecuted vigorously. All general work toward the maintenance and improvement of the park was suspended after June 30, 1913, until a new superintendent was appointed in February, 1914, but in the meantime a sanitary sewer was constructed by contract under the direction of Mr. E. A. Keys as supervising engineer, at a total cost of $20,238.13, which was paid for jointly by the Federal Government and the city of Sulphur. The total length of the main line of this sewer through the park is 7,900 feet, and it has four branch lines aggregating 4,700 feet in length. The main line crosses Rock Creek by means of a siphon which involved serious engineering problems, but which is a pronounced success. One of the branch lines has a siphon across Travertine Creek to reach the administration buildings of the park. This sewer will accommodate a population of 16,000 persons.

After the completion of this sewer, Mr. Keys and his assistant, Mr. R. R. Hornor, upon the request and recommendation of the present superintendent, remained for several weeks and completed an extension of the macadamized driveway along Travertine Creek for a distance of 11,715 feet from Cold Spring to the head of the creek, including a loop which encircles the Buffalo Springs. This extension cost $3,483.99 from the park appropriation for that current year, and the completed road is 13,240 feet in length. It has 26 cement culverts. The grade between ditches is 18 feet wide, and the macadamized surface is 14 feet wide with 6 inches of gravel. The road material is found in the park and is of excellent quality and when placed upon the roadbeds becomes cemented and solid. It has been pronounced by expert engineers as the best for road-making purposes. The driveway follows closely the windings of Travertine Creek and crosses it frequently. It is well shaded through the summer for the whole distance and the pleasing prospect and sooth-

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ing sound of the running water in the shaded dells which it traverses are very restful and attractive to the wearied visitors who frequent it.

No attempt has been made to alter the rustic features of Travertine Creek, but the willow growth in Rock Creek had become so dense that the beauty of that watercourse was obscured, and much of that growth was cut away in the spring of 1914. No other permanent improvements were made in the past two years, but maintenance work has been carefully kept up, and 48 additional benches for visitors were added this year for use in the several parks, and the little fields of alfalfa have been carefully conserved. All of the spring houses and pavilions in the park and the superintendent's residence were repainted and the residence renovated. Much attention has been given to the propagation of such rare plants as were available, and some of the flower gardens are very attractive. Red, white, and Japan clover has been started at various places, and it is hoped to demonstrate the utility of these grasses in future plans for the park. A total of $242.81 was realized from the surplus crop grown in the park in 1913. The surplus hay crop of 1914 is not yet all sold. For the present year the pasturage on certain undeveloped areas has been contracted, with the approval of the Secretary of the Interior, for an additional $120 rental.

The birds and wild flowers of the Platt National Park deserve the attention of every visitor and of the department. Every month during the spring, summer, and autumn brings a distinct variety of blooms. One student has identified 52 species, and the classification of countless others has not been determined. Another student reports that in the month of January, 1914, he had recognized 30 distinct varieties of birds, some of which he had never seen listed so far north at that season, and one, the painted bunting, which is very rare in this section of the country. The mocking bird is at home in the Platt Park the year round, and during the breeding season sings all through the night. Quail, plover, and squirrels are especially protected and are very numerous and, with the blue jays, are almost domesticated, as are also the cardinals.

The winter climate of Platt Park is mild, the district is free from malaria, and all the year round the park has it quota of seekers after health and recreation. A record of visitors to the Bromide Spring is constantly maintained and shows a daily attendance ranging from less than 50 on some days to over 2,000 on others. The whole number of visitors to the park during 1914 probably exceeded 30,000. At any rate, the attendance is greater than to any other national park except Hot Springs Reservation. This is uniformly true despite the fact that there are no amusement features of any kind at or near the park, which is very much deplored and detracts from the popularity that this beauty spot should enjoy. It is patronized wholly

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for health and rest and recreation, and it is the only spot in Oklahoma, Texas, or Kansas designated or especially suited for such joint use. Turnstile registers at all pathways entering the park have been suggested and ought to be installed. The wagon roads through the park are regularly used for local travel, and it would be difficult to register visitors by automobiles and carriages.

The discipline of the park has never been a serious problem, and the general character of the visitors is well shown by the fact that no rangers or other character of police supervision is maintained by the present administration, and none is necessary. Visitors are not permitted in the park after 11 p. m., nor on the trails after sundown. Fishing with hook and line is permitted, except during the legally closed season, and both Rock Creek and Travertine Creek are well adapted to bass and trout, although no effort has been made to stock them.

Platt Park is conveniently accessible to a well-developed agricultural country which is rapidly growing, and it can readily and easily be made self-sustaining. Its medicinal springs are almost useless without bathhouses and hospital accommodations. Its streams of running water might easily be converted into fish preserves, swimming pools, and boating courses. Rock Creek from the mouth of Travertine Creek to the park limits, about 1 mile of distance, has a fall of 19½ feet and has good banks. Excellent grounds are available for golf courses, and Oklahoma is badly in need of an athletic field and stadium for scholastic meets and similar gatherings, and tourists by auto are more and more frequent every year. Licenses for summer cottages would find ready sale at a good ground rent. A public camp ground away from the city is now provided and is well patronized, but no public conveniences of any kind are provided for such visitors. Another camp ground accessible to uptown conveniences has become a necessity for a great many people who want to spend their summers in the open and do not want to be burdened with housekeeping cares. Frequent applications have been made to license amusement pavilions in the park, and new and ample pavilions are badly needed at the principal springs, and such pavilions would afford opportunities for the sale of concessions.

The problem most perplexing in the administration of Platt Park is to conserve its mineral waters and bring them into more general use. The nature and properties of these waters have been carefully studied and are well understood, but their origin and extent have not been scientifically studied. No survey of the underground waters has been undertaken. None of the wells in the vicinity flow above the thousand-foot level, and the Mystic Cave, about 8 miles distant from the park, gives access to an underground river of considerable volume which flows at about the same level. About 30

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miles distant to the north, the south, and the west are natural gas fields of considerable extent. Exposure to the air soon deprives the sulphur water of all indications of mineral character and it is frequently suggested that natural gas is the characteristic of these waters. Several wells in the immediate vicinity have shown some gas in strata near sea level.

The conglomerate rock with its associate standstones are the only rock measures in Platt Park, except the late travertine deposits. Together the conglomerate and travertine rocks form the most pleasing features of the landsscape, and the conglomerate is particularly puzzling. Loads of it have been transported for landscape embellishment, and competent engineers have pronounced it an exceedingly rare formation. It is several hundred feet thick and is persistent throughout the park. It is necessary to blast holes for tree planting to get satisfactory results where it lies near the surface. The Bromide Bluff and the Council Rock are the most notable occurrences of the conglomerate.

Platt Park is not in the arid belt and its natural vegetation is luxuriant, but the climate is subject to extended droughts and it would add enormously to the natural advantages if a system of irrigation was adopted for the available areas, which are extensive. With such assistance admirable effects could be secured in floriculture, horticulture, and arboriculture. An effort to propagate the Eucalyptus tree in that region would be particularly desirable. All flowers, shrubs, and trees of the Temperate Zone are indigenous to the soil in Platt Park. Excellent opportunities are also available for the preservation of rare animals, and the establishment of a bird refuge would be a charming feature and ought not involve much expense.

The superintendent and supervisors of all of the parks ought to have the counsel and cooperation of a competent engineer and expert landscape gardener. If all the superintendents and supervisors were supervised by the same counsel the work could be correlated and some degree of unity maintained in the national system. Platt Park particularly shows the effect of constant changes in plans for its development. When our national parks are reduced to a system and brought into immediate relation one to another it will be easier to make their advantages known and bring the public to appreciate them as they deserve. Then, and not until then, will Americans appreciate the natural beauties and advantages of our own country.

Platt Park is accessible to the main lines of the St. Louis and San Francisco and the Atchison, Topeka & Santa Fe Railroads by branch lines, which are so operated as to meet all main-line trains, and an interstate highway from Wichita, Kans., 225 miles north, to Dallas, Tex., 115 miles south, passing through Platt Park, has been carefully logged and provided for. The section through Murray County is

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now practically completed. Another highway connecting the Hot Springs Reservation, Platt Park, and the Fort Sill Reservation and Forest Reserve has been suggested as an experiment in national highways, and would certainly be justified. There is enough local interest along that route to assure adequate cooperation. Platt Park is about 75 miles due east of Fort Sill and about 225 miles due west of Hot Springs. The Indian base line passes through Platt Park and Hot Springs and 6 miles south of Fort Sill.

The policy of the present administration to exploit the move to "see America first" is a step in the right direction, and should be commended by the American public to the extent that they will make it their duty as well as their pleasure to assist in this patriotic movement.

MR. DANIELS.

In North Dakota we have a national park which has neither an appropriation or revenues. This park is under the supervision of the superintendent of the Fort Totten Indian School, Mr. Charles M. Ziebach, who will tell us something about the Sullys Hill Park.

MR. CHARLES M. ZIEBACH.

The Sullys Hill Park was set aside by Executive proclamation dated June 2, 1904, under the act approved April 27, 1904 (33 Stat., 319). The park comprises about 960 acres of rough and hilly land bordering on the south shore of Devils Lake, N. Dak., and has about 2 miles of shore line. The western border of the park is about 1 mile east of the Fort Totten School. The tract is well wooded and has an abundant supply of fresh water from numerous springs which feed a small lake in the southwestern part of the reserve, known as Sweet Water Lake. There are numerous shade trees around this lake in which the undergrowth has been grubbed out and provides an ideal picnicking ground. Nearly all of the people who visit this park during the year provide themselves with a basket lunch, which is eaten at this place.

The park for the most part is still in its original state, as no appropriation has ever been made for the improvement of the park, and no improvements have been made other than cutting out a few trails through the timber for roads and clearing up a place around Sweet Water Lake for picnic grounds. Nothing, as yet, has been done toward making permanent roads or otherwise beautifying the grounds. The natural beauties of the park and its popularity as a picnic ground have drawn an aggregate of about 2,000 people to the place for a short time. A very small portion of these people has spent a single night there, and none, so far as is known, has camped in the park for a longer time.

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An appropriation was made by Congress in the year 1914 of $5,000 for the establishment and maintenance of a game preserve in this park, and more particularly to fence the tract and provide corrals, etc., for this purpose. Bids for a contract to fence the park were opened in the office of the Secretary of Agriculture on February 2, 1915, but I am advised by the honorable Secretary of the Interior, in his letter of February 24, that no contract for the construction of the fence has yet been awarded, as the lowest bid received was considerably in excess of the appropriation made by Congress.

There should be some permanent roads built in this park, so as to make it more accessible to the public, as there are many people who would visit the park who do not otherwise on account of there being no easy access by automobile. A dock should be built on the lake shore so that launches could draw up to it for a landing, as Devils Lake is provided with several good gasoline launches and a number of sailboats, the latter of which are owned by a boat and yacht club of the city of Devils Lake and the former by private individuals, some of which are used exclusively for passenger purposes. The only manner of landing on the shore of the park is by rowboat, from the larger craft.

The beach at the foot of the large hill within the park, from which the park derives its name, offers one of the best bathing places on Devils Lake. Some bathhouses should be built and other minor improvements of this character made. It is anticipated that if a game preserve is provided within the park a caretaker will be employed and a residence provided for him. If none is provided from this source, one should be employed and suitable residence provided for him.

The track of land lying east of the park, consisting of the remainder of section 10 and the north half of section 15, not already within the boundaries of the park, the north half of section 14 and the balance of section 11 bordering on the shore of Devils Lake, comprising 765.54 acres, should be purchased so as to enlarge the park. I believe that this land could be purchased at about $7 per acre.

An appropriation of about $10,000 would improve this park so that it would be of easy access to the public, and would make it one of the most noted resorts in the State of North Dakota.

MR. DANIELS.

In addition to the beauty spring, which brings out a divine complexion, there is the sulphur spring, which aids digestion to such an extent that it is almost impossible to find anybody in the town of Sulphur who has bad digestion. Then there is the bromide spring, which is a sleep producer equal to Jack Johnson's right hook.

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Prior to my last visit to Platt National Park in my ardent pursuit of official duties, after having been interrupted by smallpox, which I contracted on my way from one of the parks, I contracted an attack of a form of insomnia which stayed with me for some time. I had been suffering from that for about 10 days before I reached Sulphur. Col. Sneed suggested that I drink several gallons of that bromide water, but I thought that if there was any efficacy in that bromide water, I could get it out of a quart. I took it skeptically and at Col. Sneed's urgent request, but I had not the slightest idea that there would be any beneficial results. When I retired that evening I did so anticipating no results, and with the thought that I would occupy the night figuring out how long it would take me to get to the next place, where I would be called upon by some of the department heads to answer questions that no answers could be given to. I was surprised when I awoke nine hours later and found that it was considerably after breakfast time. I am convinced now that that good night's sleep was produced in me by the bromide water in Platt Park.

Mr. Acker probably is the man who knows more about the secret thought and nefarious schemes of supervisors and superintendents than any one man in the service. I believe he is the oldest man connected with the park service. I believe, I should say, that he has been connected with the park service longer than any other man, but at that he is older than he looks. Administrations may come and administrations may go, but Acker stays on forever, or at least I hope that he does. I will ask Mr. Acker to tell you all he can about the relation between the Federal and State jurisdiction in the parks without telling you any of the secrets that must be kept back.

Mr. W. B. Acker.

Mr. Chairman, ladies, and gentlemen, I will not detain you very long. What I have to talk about is considered rather dry material and it is probably old to most of you. I see some new park superintendents here, however, and what I have to say may be of interest to them.

Congress in 1872 first inaugurated the policy of establishing national parks for the benefit of the people generally and preserving in these reservations the wonders of nature. The first park created was that of Yellowstone, in Wyoming and Montana. The act providing for the creation of this park authorized the Secretary of the Interior to promulgate rules and regulations for the government of the park, as well as for the leasing of lands and granting privileges of various kinds, but this act made no provision for the enforcement of the regulations in the courts, the only penalty for violating same being

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ejectment from the park. The park was administered by civilian superintendents under the regulations promulgated by the Secretary of the Interior up to and including 1883, when Congress inaugurated a new policy by removing the civil authorities in the park and substituting for them troops detailed by the Secretary of War for protective purposes. The troops have been continued in that reservation for protective purposes up to the present time.

At the time of the admission of the State of Wyoming into the Union in 1890, the United States reserved exclusive jurisdiction over the lands embraced in Yellowstone National Park. It failed, however, to provide any law which could be enforced in regard to the handling of the people generally in that reservation, the protection of the wonders therein, and particularly in reference to the conservation of private rights. There were Federal laws that provided for the punishment of persons charged with larceny, murder, etc., and those were enforced. The administrative difficulties in the park, owing to a lack of proper laws for its government, continued up to May 7, 1894, when Congress passed an act for the protection of birds and animals in the Yellowstone Park, and to punish crimes in that reservation, and for other purposes. This act prohibited the killing, wounding, or capturing of birds and wild animals in the park and provided for violations of the regulations for the government of the park. It designated such offenses as misdemeanors and subjected the person offending to a fine of not more than $1,000, or imprisonment of not more than two years, or both, as well as to pay the cost of all proceedings. That act has been in force since 1894, has been successfully administered, and many convictions obtained thereunder. Congress evidently intended that offenses under this act should be dealt with as a misdemeanor to be tried and punished as such by the commissioner in the park. Since the act, however, authorized the punishing for not exceeding two years for offenses committed under it, they could not be regarded other than as crimes within the meaning of the Constitution of the United States to be prosecuted under indictment in the regular way. It was only in 1913 that this defect in the law, which had been known to the department for many years, was brought to the attention of the Department of Justice by the United States District Attorney in a case arising at that time, and he held that in all cases under this act proceedings thereunder should be had with the United States commissioner, who would merely act as a committing magistrate, the case being thence sent to the grand jury for consideration. As a result of this determination much hardship has been imposed upon the people who have been charged with misdemeanor under the act. For instance, a man going through the park with a child. The latter might stop and break off a piece of formation. That

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would be a violation of the park regulations, and would be presented to the United States commissioner and the accused held over to the grand jury. Bail would have to be given. The accused in all likelihood would have to go home and then go to Cheyenne, Wyo., where the court meets, and be tried. Then in all probability he would be acquitted. The department has sought to remedy this condition of affairs by presenting the matter to Congress with recommendation for the park act to be amended so as to make the term of imprisonment prescribed thereunder not exceeding one year, instead of two years as at present. It is to be hoped that the necessary legislation will be enacted by Congress at an early date.

Between 1872 and 1915, thirteen national parks have been created, embracing probably, in round numbers, 4,700,000 acres of land. Each of these acts creating the parks was drafted practically along the lines of the Yellowstone Park act in so far as authorizing the Secretary of the Interior to prescribe rules and regulations is concerned. They differ from the act in relation to Yellowstone Park in certain minor particulars, for instance, in some cases they authorize the location of mining claims; in other cases they authorize the maintenance of restaurants; and in other cases provision is made for the elimination of patented lands within the metes and bounds of the park and the selection of other lands in lieu thereof. In all other respects, as far as regulations are concerned, they are practically the same. Some of these acts provided a penalty for the violation of any regulation provided therein. The majority of them, however, did not. Those regulations, of course, notwithstanding the penalty for violation thereof, could not be enforced in the courts of those States where exclusive jurisdiction had not been ceded by that particular State to the United States.

In 1893, I think it was, the Legislature of Arkansas ceded exclusive jurisdiction over a portion of the Hot Springs Reservation to the United States. The Government had long desired that legislation in order to protect people against the nefarious system of doctor drumming, which had grown to be a stench in the nostrils of the public generally, through the actions of physicians down there in performing fake operations and taking the money of the patient for claiming to do things which they did not do. Subsequently a bill was introduced in Congress accepting jurisdiction extending over that portion of the Hot Springs Reservation, on which the hot springs are located, and provided a penalty for the violation of the provisions thereof. This bill, while pending in Congress, raised the question as to whether or not a State was precluded from surrendering jurisdiction to the United States over any portion of its territory. The matter was discussed before a particular committee of Congress, and in view of the authorities brought to their attention it was concluded that

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the State did have a right to cede jurisdiction to the United States, and accordingly the bill was reported on favorably by the committee and subsequently became a law. That was the second case in which the United States obtained exclusive jurisdiction over territory within a park; the Hot Springs Reservation is designated by law as a park.

In Sulphur, Okla., we have the Platt National Park to which reference has been made by the superintendent, Mr. Sneed, in his paper. At the time the statehood bill, the bill providing for the admission of Oklahoma as a State, was under consideration in Congress, the department, knowing that it had this reservation to administer and having had the experience in administering similar reservations in other parts of the country, suggested a paragraph in that bill reserving exclusive jurisdiction over Platt Park, and any other reservation that might thereafter be created by Congress within the State. That received favorable consideration and the bill became a law with that paragraph in it, so that at the present time we have Platt Park, where there is exclusive jurisdiction; Yellowstone National Park, where we have exclusive jurisdiction, except certain strips of land in Montana on the north and west of the park and on the west side of the park in Idaho. As to those small strips of land, the State laws still obtain over them and the regulations of the park would not be enforceable in the courts if any violations occurred in that territory.

In 1901 the Legislature of Washington ceded to the United States exclusive jurisdiction over Mount Rainier National Park, to become effective when the United States should assume jurisdiction over the reservation. A bill was prepared substantially along the lines of the bill in the Yellowstone and was introduced in Congress and referred to the department for report, and it was favorably reported upon. When it was before the committee the same question arose as was presented in the case of the Hot Springs Reservation. The matter of the constitutionality of the act was very thoroughly thrashed out, and the committee concluded to report favorably on the bill, principally upon the ground that the park was an instrumentality of the Government, over which the United States could accept and have exclusive jurisdiction and administer it exclusively. Unfortunately, that bill failed to become a law.

In 1911 the State of Montana ceded exclusive jurisdiction over the Glacier National Park. Bills were prepared along the lines of the Mount Rainier bill, but in a somewhat modified form, and received favorable consideration by Congress; and very recently that bill became a law, so the United States has exclusive jurisdiction over the Glacier National Park.

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In January, 1915, the State of Oregon ceded exclusive jurisdiction over the Crater Lake National Park. The department has not had an opportunity to present that matter to Congress in the shape of a bill.

In California no important steps have been taken for the reason that there are very large areas of patented lands in those parks which it is desirable to eliminate as far as possible before securing exclusive jurisdiction.

This gives briefly and chronologically a history of the situation as regards the administration of national parks, and the enforcement of regulations therein to the present time. It is highly desirable from an administrative standpoint that the department secure exclusive jurisdiction from the other States in which the other parks are located, and steps will shortly be taken looking to that end. Many problems present themselves in the administration of these parks where they are under State laws which can not be solved except at great cost to the Government; they also cause great annoyance and much perplexity to the officers in the reservations to know what to do in particular cases and how to apply the proper remedy. I thank you.

MR. DANIELS.

It may be said that the department is now very arduously doing work trying to draft some sort of uniform regulations and laws which will bring the administration of all the parks under one system. It is to be hoped the work will be finished soon.

We are to have some discussions and talks by the concessioners, but it is my personal experience that no one afternoon is going to suffice to hear their troubles. I have therefore suggested to Secretary Mather that we devote a half or three-quarters of an hour this afternoon to that purpose. I would like to hear now from any of the concessioners in Yellowstone Park who may have any compliments to pay us, or other things to say to us. Have you anything to say about Yellowstone Park? Then we will take up Glacier National Park. Mr. Emory, is there anything regarding transportation problems you would like to take up for discussion here?

MR. EMORY.

There are 26 miles of road there on the Indian reservation, and there is no maintenance of it at all. We expect 30,000 people there this year to go over that road. There is nobody looking after that road. Those roads are in the Indian reservation.

MR. DANIELS.

What about the portions of the road that are within the park boundaries?

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MR. EMORY.

They are all in most excellent shape. They are handled by Mr. Ralston, and kept up in fine shape. We have about 4 miles of road there that I do not believe we could handle three horse-drawn vehicles on. The automobiles can not go over it at all.

MR. DANIELS.

You feel, then, that some arrangement should be made for maintaining the roads in the Indian reservation?

MR. EMORY.

It is rather a joke for the park officials only to spend money on the Government roads inside of the boundaries. There are different points that people want to go and see, and they have no way of going to those points in case of bad weather. Somebody ought to look after them. Certainly the concessioners can not when you are held down by the Government in the charges you make for taking tourists across there.

MR. DANIELS.

If the concessioners operate on those roads, it would be wise for them to maintain them.

MR. EMORY.

Well, let me charge enough so I can afford to do it and I will gladly do it.

MR. DANIELS.

Would you like to make an application to raise your rates?

MR. EMORY.

I certainly would.

MR. DANIELS.

The Department of the Interior can not spend any money outside of the park area.

MR. EMORY.

That outside road is a very serious proposition. The Great Northern road has spent $98,000 on that road.

MR. DANIELS.

I would suggest that you memorialize the Secretary of the Interior to see if some of the funds of the Indian Service could not be used for the maintenance of that road in the Indian reservation.

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MR. EMORY.

That is all that confronts us up there—that condition.

MR. DANIELS.

I see Mr. Curry sitting patiently up there. What are your problems in Yosemite National Park, Mr. Curry?

MR. CURRY.

I think I will make some remarks in addition to what I made two or three years ago when we had a meeting in Yosemite Valley. I believe we need some hotels, and we ought to have better hotels also, but I want to begin with an answer to something that was said yesterday regarding hotels in national parks—that they should be handled under one management in the interest of the tourists. It was proposed that we go into a monopoly and put somebody in charge of each park and have all of the tourist business in one park done by one company or one person. I am very thoroughly against that proposition. If you want to put all of the hotels in a park under one company, I have no objection to that, but if you combine hotels and camps and private camps, I am bitterly opposed to it, and I believe that it is opposite to anything that is democratic in the American people. I have seen the effect of combining hotels and camps belonging to the same parties. I do not believe in it. I believe we should have camps that are made as good as people can make them, and the hotels should be just as good as hotel men are willing to make them. There is a cry all the time that we ought to have a four or five or six dollar a day hotel. The camp men do not care if there are a dozen such hotels in Yosemite Valley. I would not care if there were such hotels all through the national parks, but the trouble with such hotels is that they will not pay expenses.

An illustration was given of the service along the Santa Fe Railroad—the Harvey system—where they charge 75 cents per meal. I have eaten many of the Harvey meals, and I have got no complaint to make of them, but I say that two-thirds of the people who travel on the Santa Fe do not eat those meals, because they are too high in price for them. People all over this western country say that the price of the Santa Fe meals is too high. But the transportation interests are telling us that we want high-priced hotels. What we want are camps that are good. We have nothing to say about the hotels.

I am going to talk about our own park, the Yosemite Park. The reason we do not get business to Yosemite is on account of the high charges to get there. It is not due to the Southern Pacific Railroad,

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nor to the Santa Fe, but it is due to the Yosemite Valley line. There was a good deal of talk here yesterday about the parks being run in the interests of the common people, and all of the people, and we can do that when we have these private camps as we have in Yosemite, public camps as we have in Yosemite, and we might have a good hotel there, too, if anybody will put up the money to run it. But when they talk about putting up money for good hotels and at the same time absorbing the camping interests, I say that is impossible.

Another thing, it is all right for the railroad companies to run a sleeper if they run also a chair car or a coach. The sleeper weighs three times as much as a coach, and it does not pay one-third of the revenue that the coach ordinarily pays. Let us put the cart before the horse and give publicity to our parks, and I believe we will treble and quadruple our attendance. I have been traveling throughout the State here for the last three or four months, and I believe we are going to have lots of people out here this season. We ought to have 50,000 people visiting Yosemite Valley. Publicity for our national parks is what we need, and then we will get the people out here.

What I would like to get is lower rates for trips to our parks. I do not believe any other park in our country has as exorbitant rates as we have to Yosemite. It is a side trip that costs too much. I want lower rates.

What we want in our parks are business men who will go into the business and stay in the business, and will be willing to put the last dollar they make into the business. I have just been on a visit down in Riverside, and there is a man there that puts $10 into his business for every $5 he gets out of it. If we had people here like that we would have people who would take up that work as their life's work, and they would be willing to put all of the money into it that they possibly could.

MR. DANIELS.

I do not think it was the intention of Mr. Ford Harvey to say that he believed in such a monopoly as you suggest. I think it was in his mind to consolidate the various different classes. I distinctly stated in my remarks yesterday that there should be three classes of service. Each of these three classes of service should be kept distinctly in its own class. I believe in competition, but I would rather see it between classes of service than between the same class of service. I do not think such a thing as the combination of hotels and camps could be tolerated. I do not believe Mr. Harvey even thought of that.

As to the publicity you speak of, the Secretary has entered into a campaign of publicity. He has not as yet actually entered into that campaign, but he is preparing to enter into one, and has secured the

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services of one of the most prominent publishers in this country, who has been the editor of one of our greatest magazines, and whose name is known to us all. He is going to concentrate his time and energy particularly on disseminating information.

As to long-term leases, I am thoroughly convinced that we should have long-term leases. On Mr. Mather's arrival here we took up the question of long-term leases in the parks in general. We have now thrashed out a scheme which, I think, will be adopted, and which, if adopted, will be uniform in all of the parks. It is a plan of co-partnership between the Government and the concessioner, and will be arranged something like this: The concessioner will write off his office charges, his cost of maintenance, and his cost of operation and his depreciation items. Add 6 per cent to that, and what is over, if there is anything, will be shared between the concessioner and the Government, in some equitable proportion which will be determined at the drawing up of the contract. That makes the concessioner substantially a partner with the Government. It makes the concessioner interested and the Government interested. It ties together a mutual interest in a way that I think will solve many of our problems. By establishing that sort of a system we can use it uniformly throughout the parks. Then there will be no necessity of drafting a peculiar or unusual contract for each particular concessioner. We will eliminate the tremendous amount of detail that has to be followed now, and I think it will result in a better feeling all around. I see other concessioners here from the Yosemite. I would like to hear from them if they have anything they want to say.

MR. WEIGHTMAN.

Being familiar with the conditions where I am, near Glacier Park, I would like to enlighten you upon some matters. There is one road there that is about 2 miles in length. The material of the soil is of clay, and during the excessive rains the road becomes impassable. It is that road that Mr. Emory referred to. It is a stretch of road that is probably 3 miles in length right through the leaf mould. During the rainy season it gets very soft. If it is possible to secure any money from the department to fix up that road, it ought to be done.

MR. DANIELS.

Is that outside of the park?

MR. WEIGHTMAN.

Yes; I have no jurisdiction to fix it, and I know you have not; but I wanted to call that matter to your attention.

I would like to say a little in regard to the western entrance to Glacier National Park. I am one of the concessioners there, and did

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some of the first work, as far as transportation is concerned, between Belton and Lake McDonald, a little short road, about 3 miles long. Originally that was the only entrance to what is now known as Glacier National Park. It is on the line of the Great Northern, and it is 60 miles from the eastern entrance. There is no wagon road between those two points, and before Mr. Hill came there the only entrance to that park was from Belton, a distance of about 3 miles. Fifteen years ago we had people there from all over the world, and the accommodations were very poor. I feel as though I am one of the ones that created the tourist travel into that park. Maj. Logan, our first superintendent, built the road there for about 2 miles, I think, a good macadam road, with crushed rock and everything of that kind. It was a very expensive piece of road. At that time Mr. Keyes made a survey from the top across the park, the top on the west side of the river to the park—the river is the dividing line. He made a survey there for a bridge to the park across the river from what we call Schneider Hill, which was a distance of about half a mile. The County Automobile Club and one thing and another spent $17,000 to build an automobile road from Kalispell to Belton, 30 miles. From the top of the bridge it is in the neighborhood of one-quarter of a mile from the bridge to the top of this Schneider Hill. The county, when it got to the top of the grade, stopped working on that road and thought they would build a bridge. The Government thought the same thing and did not improve the road between this hill and the bridge; consequently it made a muddy, bad piece of road. Last year it was fixed a good deal, and we will probably have a good road.

All around Lake McDonald there have been lots of people who have put in permanent residences. A lot of people come there every year to camp. Probably most of that land between Belton and the lake is owned by private individuals, and especially around the foot of the lake at the Government dock. Mr. Lewis, near the head of the lake, put up a large hotel on the plan of the Glacier Park Hotel at the Glacier Park entrance, and consequently we all feel as though we had some rights there. I myself have a residence there, barn, and all accommodations. etc., at the foot of Lake McDonald, and I have conveyances, tally-ho, wagons, and surreys enough to carry a hundred people from one train or boat. I find that the largest share of the tourists that come through do not care about the automobiles. They prefer the stages, and I must say that the horse accommodations throughout the park have been considered very, very poor, with the exception of my teams. Money can not buy better horses, better conveyances, or better harness than I have got, and nobody can get any more courteous and sober men than I have got for drivers. The fare is—I established it myself 15 years ago—50 cents for each

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person, 50 cents for a trunk, and 25 cents for 100 pounds of freight, and all that sort of thing. The proposition is that at the entrance to the park the land has been homesteaded by the innkeeper, postman, and hotelkeeper by the name of Dow. I understand that the Great Northern tried to make some arrangement with him to purchase that ground and put their headquarters there, but I do not know whether they did it or not. I believe that some of them paid six or seven thousand dollars each for little pieces up in the rocks, where they have now got chalets, and I think the Great Northern deserves credit for all that it has done through there.

My horses have been furnished to the Geological Survey and the State land survey, and everything of that kind. The conditions are such on the eastern entrance, where the land is poor, and there is no automobile road that comes in there. People do not come in there with automobiles, because they prefer to travel on the stages. We handle about 7,000 fares. I do not mean 7,000 round trippers; I mean 3,500 round trippers. We haul all of the freight up in there. I have wagons that haul freight for the hotels and everything of that kind. Mr. Lewis purchased some property up there, and he is now putting up a lot of cabins, and intends to take care of some of the Lake McDonald tourists. Well, I think I am talking a whole lot here. I have come here a long distance to talk about this matter and pay my respects to Mr. Daniels and Mr. Mather, and I hope to see them privately before I go away and have a talk with them. I can explain it more fully to them than I can here now.

There is no automobile competition at the eastern entrance. Mr. Emory, I believe, of the Glacier Park Transportation Co., is thinking about putting on a line of automobiles. I think they can give good service; but we can give just as good service as he can. I have an investment there of over $14,000. If there is too much competition there the tourists will grow dissatisfied. There are several hundred people there that have to be taken care of.

MR. DANIELS.

We have with us to-day one of the officials of the Southern Pacific Co. who might be considered as a party to the crime alleged by Mr. Curry. I wonder if Mr. Fee would care to say anything about the transportation conditions to Yosemite Valley?

MR. CHARLES S. FEE.

I do not feel at liberty to discuss that subject because it has been a matter placed in the hands of the California railroad commission. We are not a terminal line in the Yosemite Valley. Our rails do

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not touch the Yosemite Valley Railroad, but of course we are interested in the travel to that valley; but I would prefer not to discuss that feature of it for the reasons I have stated.

MR. DANIELS.

What is your guess on the effect the exposition is going to have on our tourist travel in regard to numbers? We have all made a conjecture as to that. Of course the more people we can get out here the more reasons we can give the concessioners for expending a little more energy.

MR. FEE.

I sometimes think, Mr. Chairman, that I can guess about as good as another one. My own observation in regard to the travel this present year and my own estimates have appeared to some to be somewhat high. Prior to the European war I made an estimate with reference to the attendance at the exposition at San Francisco of 17,000,000 people through the gates. That did not mean 17,000,000 in San Francisco, but included the people of San Francisco—17,000,000 admissions through the gates. That contemplated that perhaps from four to five millions of those people would be concessioners going and coming there sometimes several times a day.

My recollection is that at the Chicago Exposition there were 26,000,000 admissions, of which 21,000,000 were cash admissions. At Paris, 10 or 12 years ago, there were 35,000,000 admissions, twenty-seven or twenty-eight million of which were cash admissions. I have said that in my judgment, and I will have to modify this, however, because the estimate was made prior to the European war, that we should have crossing the Sierras 750,000 people. I still hope we will have that many. I really hope that we will have more, but if we have half a million people crossing the Sierras during this year 1915 I shall feel very much disappointed, at the same time not greatly surprised. I am hoping, however, that it will wind up and show that my original estimate was perhaps under rather than over.

Now, what the attendance at these parks, consequent upon this exposition in California, will be it is pretty difficult to say.

I remember the chairman speaking yesterday and stating the three factors that were absolutely necessary for the conduct of a great resort such as the Yellowstone or the Yosemite, and that the first one was transportation, the second publicity, and the third hotels. If the chairman permits, I will move to amend and place it in this order: First, transportation, for without access to these great playgrounds a large attendance upon them is not probable; but the

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second, instead of publicity, I will substitute hotels and accommodations. By hotel accommodations I am including hotels of sufficient size to accommodate three, or four, or five hundred people, supplemented by chalets and accommodations such as we have in the Yosemite to-day, substantially in the manner indicated in the chairman's talk yesterday, in which I was very much interested. I say that without the hotel accommodations the publicity falls far short of accomplishing what it should. You must have a place to eat and sleep for people of all classes at prices that will suit their own pocketbooks. The man who has but a dollar a day, or 50 cents a day, to spend for his accommodations should be provided for. The man who wants to spend, and is in the habit of spending, four or five, six, or ten dollars a day should be given an opportunity to spend that money and leave it in the places where these great national parks are to be found. I have regretted extremely that it does not seem possible to interest outside capital to the extent of building at the Yosemite, and at some of the other national reservations, such as Sequoia National Park, hotels that would compare favorably with those elsewhere. I realize that you must treat each one of these parks differently, and that you can not say that the same plan that may be followed with success in the Yellowstone can be followed with success in the Yosemite National Park. In Yosemite National Park you have grouped, not within a stone's throw but within a very few miles, seven-tenths of all the features, the commanding features, of interest within that region. I have always felt that until some very large commodious hotel was built in the Yosemite at a central point within the sound of the Yosemite Falls neither we, the transportation people, nor any of the concessioners, can expect the volume of travel that we should have. It is not possible. I do not feel that the fault is with the transportation or with the rates. I do not feel that you have a right to require a man who wants to make the trip to Yosemite as quickly as he can to rob that man of two days. If he wants to travel at night and have his daylight in which to see the wonders of nature, you are bound to give him that privilege. If you can supplement that by the additional opportunity to travel by daylight for those who want to go that way, all well and good.

With reference to transportation into the Yosemite Valley it is a matter, as I have said, that we do not hold the key to. We are anxious to cooperate and do what we can to make it easy and more convenient to go into the Yosemite National Park. As to the travel to the Yosemite during the present year I think, perhaps, there are some who are in a better position to judge of that than I am. I have not given that a great deal of thought, but if people are not return-

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ing in 30 or 60 days, and they can secure the accommodations they want, and they can be provided, I would say that 30,000 people in the Yosemite this year was a very conservative estimate.

There was one feature of your talk yesterday that appealed to me greatly, and that was in regard to establishing a line of chalets in the mountain regions. I have seen all in the way of scenery that is to be found in North America. In the Kings River and Kern River Canyon regions there is scenery which is second to none on the American Continent, and yet it is comparatively inaccessible. If accommodations such as you have spoken could be provided in the Yosemite and elsewhere—that is, having chalets conveniently located at points of interest, leading back into these great mountain regions—it would be for the benefit of the State of California and for all of us in any way interested, either as concessioners or transportation agents. It would be a grand thing for this whole coast, the whole State of California.

MR. DANIELS.

It is within five minutes now of striking the hour. There is no possibility of our ending within a reasonable time a discussion of the problems of the concessioners, or begin to cover all of them now. I think we had better adjourn and continue this discussion to-morrow afternoon at the conclusion of our program.

To-morrow we will meet at the Fillmore Street entrance of the exposition grounds at 10 o'clock, and we will be conducted by the exposition officials and a band to the Southern Pacific Building, where the National Park Service will be presented with a bronze plaque. We will meet in the theater, or the hall, in the Southern Pacific Building and adjourn for lunch, then meet in the afternoon and conclude our program.

MORNING SESSION, MARCH 13.

ASSISTANT TO THE SECRETARY MATHER.

This is the third day of the conference of national park superintendents and supervisors. The other two meetings have been held in Berkeley. I will call upon the Hon. Arthur Arlett, representing the governor of the State of California, to say a few words.

HON. ARTHUR ARLETT.

Mr. Chairman, ladies, and gentlemen, during the last few weeks it has been my privilege on several occasions, similar in many respects to this, to say a word of greeting and of welcome on behalf of my

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illustrious chief and, through him, for our Commonwealth. To-day, however, I have the unique distinction of being absolutely a trinitarian. As a member of the exposition family, it is my privilege to recognize your presence here in the presentation of a plaque. I am here in my official capacity representing his excellency, Gov. Johnson, but what appeals to me in this hour most strongly is that I am here to say a word of greeting to those men in loyal service, who are teaming in a great caravan of progress, under the leadership of my intimate personal friend, Secretary Lane. And with those three angles of vision this morning it is no wonder that I feel myself peculiarly honored.

You men are experienced in the things that are being considered in your conference, of course, and no word of mine would be of value, and it would be presumptuous if I even suggested it. I do not want to make any comment on your great work, but somehow or other you men are dealing with primal things, and primal things are measureably understood and measureably appreciated even by the veriest tyro.

I was thinking only the other day as a group of people came from Marin County to share in the exposition feast—I was thinking of the marvelous aspects which men like yourselves in this great work of national parks, and of conservation generally, of the great assets that you are making for all of us. No man can go out into the places where your work especially lies and fail to appreciate the wealth that is his in a common possession of these great assets. For no man may step reverently, as we all must, through the aisles of nature's cathedrals, such as we have here at Muir Woods, and such as you have in your places of labor up there, without knowing that there is being added with each moment something that makes for his eternal greatness. You men and you women, I have wondered, if with your constant contact with the problems that confront your department, sometimes, you do not because of your very familiarity with them lose, perhaps, some of the inspiration and gleam. It is that word in speaking a word of welcome to you on behalf of my chief, and in welcoming you here into the activities of this exposition to-day—it is that word of high challenge and great opportunity, of full vision, which your department calls for, that I would remind you of.

As we sit in conference to-day, as you have been sitting in conference for several days last past, may we not remember that the equation which has made your great chief great as he is, and those who are associated with him, wonderful contributors to the Commonwealth. Is it not this, that these gifts of God may be gathered to ourselves and preserved to our children, that men in growing into a likeness of the Creator may through this inspiration step by step

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go up. So, Mr. Chairman, it affords me especial pleasure for the reasons just stated, and for those intimate and personal reasons that every man must have, as he measures up with you, your associates in this work, that I present this plaque, simple yet beautiful, perhaps reminding you of the things with which you are most interested. Accept it with the exposition's very best wishes and the hope that the measure of contribution that you make to-day to the exposition may be a real and a lasting contribution to the feast of the nations.

Assistant to the Secretary Mather.

Mr. Arlett, first I want to thank you on behalf of my chief, Secretary Lane. He is an old friend of mine, also, back in my boyhood days in California. Secretary Lane has a warm sympathy with the entire work we are here trying to do on behalf of the national parks, and he wants to bring the parks closer to the people. He wants to make the parks better known. That is one of the duties which has been assigned to me when he called me down a few months ago to Washington to take up this work.

It is an especially keen pleasure to meet Mr. Arlett and to be here in my own native State and to feel that right from this center much of the work on behalf of the national parks is to radiate. We have here to-day the superintendents of every one of the national parks, a total of now nearly 5,000,000 acres, all of them with a zest and interest in the work of each of their parks. If you could have seen them as they sat around the board at their meals over in the house in Berkeley where we were living and noticed the keen interest that each took in the problems he had to present and the problems that every one of the other superintendents had to present, you would feel that we were really going to accomplish something in the work which has been laid out for us and which our worthy chief is so anxious to have accomplished.

I think it will be especially interesting to you and to the audience here to know and to realize that here at San Francisco is practically the headquarters of the national parks; that another loyal Californian besides our chief is here in charge of this work. Mr. Mark Daniels is the general superintendent and landscape engineer of the parks. His office in San Francisco will be the central point to which all of the superintendents of parks will report. At first glance, perhaps, to our eastern friends it might seem that San Francisco is a little distant from the parks, but as a matter of fact it is the nearest central point, the nearest average central point to all of the parks, particularly when we consider that four of our large parks are here on the Pacific coast. It will be our pleasure to encourage the great tide of eastern travel to visit this great exposition

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on the shores of the Pacific; also to let each tourist know, at the same time, what a priceless heritage he has in these parks.

I feel while this creation of the sculptor and the artist here near the golden gate is beautiful beyond description, it is but a symbol of the greater and infinitely more enduring expositions that await us in the Sierra Nevadas. And if we can lay the proper foundation in the years to come, we will see tourists flocking across these mountains, visiting our parks and find joy and life that have never been theirs before.

I think now that it is only fit that I should turn over this plaque to Mr. Daniels, and in that busy office of his, busy now, but which will be still busier as the work will go on for the parks, he may keep this as a memento of this very auspicious occasion. I will now call upon Mr. Mark Daniels to speak.

MR. DANIELS.

Mr. Secretary, on behalf of those engaged in the national park service and their associates I wish at this time to express my appreciation of the honor that has at this time been conferred upon us. This event will no doubt remain long in the minds of those members of the national park service who are now engaged upon the work, and will act as a stimulus and inspiration to those who shall follow. Many of the men who are now engaged in our national park service have devoted the better part of their lives to this work with little or no more encouragement than the realization that they are doing their work and doing it well.

The Federal Government has wisely set aside certain areas in its public domain in which nature has done her utmost to create scenic wonders of marvelous beauty, and has done so in order that they may be protected from vandalism and in order that these areas may not be devoted to commercial uses by people who would profit in their exploitation.

The superintendents, supervisors, and rangers of these parks are called upon annually to report to the Federal Government on the progress of their work, and in their requisitions for the meager sums of money to carry on their work that is vital to the existence of the parks they are confronted by the question from those who control the purse strings, "Are not our parks almost fully developed?" That is a question that is self-evident of the lack of knowledge on the part of our department officials, and Government officials in general. The parks are not developed. Our work has just begun. There are roads to be built, and there are bridges to be built, and there are trails to be built, and there are hotels to be built, and sanitation must be taken care of. Insect pests must be removed.

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We are just fairly lodged on the course of our work, and yet as each of these supervisors works and labors on the problems of his particular park he does so without any consideration of when the money is to come, or whether he is to get more, or whether he is to get less. I feel that there is nothing that can be too strong or that would be too high in the praise of the service of the men who are devoting their lives and their energies to the preservation and maintenance of these parks.

This exposition here has been established to commemorate a great event. Our conference, of which this is the third day, is the crowning of one of the most successful conferences that I have ever attended, and it also, in my opinion, commemorates an event. The exposition is primarily in commemoration of a new era in commerce. I believe this day, which is the closing one of our conference, will commemorate a new era in the administration of the national parks. Nothing is more fitting than that we should hold the closing day of our conference at this exposition.

Mr. Secretary, on behalf of the superintendents and supervisors of national parks, I want to express our heartfelt thanks for the honor that has been conferred upon the service in the presentation of this plaque.

ASSISTANT TO THE SECRETARY MATHER.

We will now begin with the work of the conference and continue it from where we stopped yesterday. We are all very much interested in the question of the preservation of the trees in the parks, and in the last two or three years some very interesting work has been carried on between the Department of Agriculture and the Department of the Interior in this matter. I am going to call upon Dr. A. D. Hopkins, of the Bureau of Entomology, United States Department of Agriculture, who will talk to us on the subject of "Insect investigations as affecting the national park forests," and some of the work that has been done under him in Yosemite Valley and other parks.

DR. A. D. HOPKINS.

Mr. Secretary and members of the conference, I am especially glad to meet with you all and to talk with you again about the insects which are a menace to some of the beautiful features of the national parks.

At the conference held in the Yellowstone National Park in September, 1911, we called attention to the character and extent of the damage by tree-killing insects to national park forests, mentioned some of the peculiarities in the habits of the principal insect depredators, some of the natural and artificial conditions which were

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favorable and unfavorable for the multiplication, and referred to general methods of control and prevention. This is now available in published form.

To avoid repetition we will this time call attention to some specific cases of insect depredations in the forests of the Pacific slope and Rocky Mountain regions and how they have been investigated and finally dealt with; also to try and show from the results of our investigations and experimental and demonstration control work that the protection of the forests of the national parks from their most destructive enemies is, in fact, a comparatively simple, inexpensive process, and then explain how we are prepared to go into the forest and show a practical woodsman how to do it.

It may be of interest in this connection to mention that the investigation of forest insects as a special feature of the research work of the Bureau of Entomology of the Department of Agriculture was begun here in Berkeley about 16 years ago, or, to be exact, on April 18, 1899. A number of new species of forest insects and the habits of known ones were discovered here for the first time in the trees on the college campus. The next day an insect enemy of the redwood was discovered at Guerneville, Cal.; on the 21st the destructive habits of the western pine beetle were discovered at McCloud, Cal.; and at Grants Pass, on April 26, the mountain pine beetle was discovered in sugar pine. The western pine beetle and the mountain pine beetle have since been found to be the most destructive insect enemies of the pines of the Pacific coast and northern Rocky Mountain regions. In fact, from what we know now, after 16 years of investigations, we feel safe in saying that these two beetles are, in the long run, the most destructive natural enemies of two of the most important species of western pines—the western pine beetle as a destroyer of the yellow pine and the mountain pine beetle as a destroyer of yellow pine and sugar pine.

During the past 10 years we have had field stations located at different places in the States of California, Oregon, Washington, Idaho, and Montana, with one or more specially trained forest entomologists at each station devoting their entire time to the study of forest insects and insect problems. Special attention has been given to the study of the two beetles mentioned to determine the essential details in their life histories and habits, the character and extent of their damage to the forest, and the problems relating to methods of control and prevention. Much of the results of these investigations has been published in both technical and popular form for the information of the entomologists and the practical forester, but a great deal has been determined within recent years about the actual extent of the damage caused by these insects that

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has not been published. Special cruises of representative areas in northern California have been made which show that from 10 to 30 per cent of the entire stand of merchantable-sized yellow pine had been killed by these beetles within a period of 10 to 30 years. A careful cruise of 5⅛ sections in the Klamath National Forest was made by the State forester and a representative of the Forest Service, and showed that there was 12,628,800 feet board measure of living yellow pine and 5,623,100 feet board measure of dead yellow pine on the area, and that 90 per cent of the dead timber had been killed by insects within a period of 25 to 30 years. This area was said to be a representative of that section of the forest, and from my personal knowledge of conditions, supplemented by the reports of our investigators, who for the past three years have studied the subject, it is representative of extensive areas in northern California and southern Oregon, all of which indicates that the average annual loss of yellow pine from insect depredations is at least one-half of 1 per cent of the total merchantable stand of yellow-pine timber in northern California and southern Oregon. This may seem to be a comparatively small loss; it does not attract much attention, scattered as most of it is throughout the forest, but when we consider that according to reliable authorities there is more than 100,000,000,000 feet board measure of yellow-pine timber in California, and if one-half of 1 per cent of this, or 500,000,000 feet, is killed each year, we will realize that this is considerably more than the recorded annual cut of yellow pine in the State, and that the loss in stumpage value alone at $2 per thousand feet board measure amounts to $1,000,000 annually.

We have one of the most striking examples of the destructive work of the mountain-pine beetle in the Hetch Hetchy and Tenaya watersheds of the Yosemite National Park. There are extensive areas here in which from 50 to 90 per cent of the lodgepole pine has been killed by the mountain-pine beetle during the past 10 to 15 years.

Our attention was first called to the trouble affecting the timber of this region in 1903, and in the spring of 1904 I was instructed to make an investigation. I reached the Yosemite Valley over the old Yosemite Trail on June 13, but could not get into the affected area on account of deep snow and unfavorable weather conditions. Considerable time, however, was devoted to the general investigations of the work of the insects in the valley and the region between the valley and the Mariposa Grove, which convinced me that the extent of of the loss of some, affecting the best sugar pine and yellow pine of the park caused by insects, was vastly greater than was realized by the park officials.

In 1906 I sent one of my assistants, Mr. H. E. Burke, to continue the investigations. Mr. Burke entered the park on May 28 and con-

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tinued his investigations, with headquarters at Summerdale, Cal., until July 3. He found that the death of the timber in the Tenaya and adjacent areas was caused by the mountain-pine beetle and not by a needle miner, as had been supposed by the rangers and others who had visited the area. He found at that time areas of 1,000 acres or more in which 95 per cent of the trees had been killed.

In 1910 continued destruction of the lodgepole was reported to the Secretary of the Interior by the park superintendent, and in 1911 investigations were made by a forest pathologist of the Department of Agriculture for evidence of any fungous disease which might be the cause of the trouble, but he reported that the damage was caused by insects.

In October, 1912, one of my assistants, Mr. J. M. Miller, was detailed to make further investigations, and went over the area with Park Ranger Gaylor.

In July, 1913, control work was started under our recommendations and special arrangements with the Department of the Interior by which we gave the instructions and the department furnished the men and facilities for carrying on the work. Mr. Miller was placed in charge of the project, with Entomological Ranger Sullivan as his assistant. During the summer and fall 1,584 infested trees were treated, at a cost of $1,169, or about 74 cents per tree.

In 1914 further funds were provided by the Interior Department and arrangements made to continue the work under the supervision of Entomological Ranger Sullivan under instructions to begin operations in the yellow-pine areas at the lower elevation and work into the lodgepole higher up as the season advanced. Two thousand and sixty-eight infested yellow pine and lodgepole pine were treated during the season at a cost of $2,789.40, making the total number treated during the two seasons 3,652 at a cost of $3,937.40, or an average cost of $1.05 per tree with an average diameter of 24.8 inches.

The areas treated in 1913 were inspected by Miller and Sullivan in the fall of 1914. They found that in the Cathedral Creek project where 74 per cent of the infestation on the actual treated area had been disposed of (or a much less percentage when the infestation of adjacent areas was included) had resulted in 87 per cent reduction of the infestation in 1914, while in the Tenaya project, where the work was conducted later in the season when the beetles were flying, showed only about 33 per cent reduction. This latter result was plainly due to the fact that only a very small percentage of the infestation of the entire adjacent area had been disposed of, and that the beetles had been attracted to the control area by the control operations.

Judging from the results of more than 26 demonstration projects carried on in different sections of the Rocky Mountain and Pacific

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Slope regions during the past 10 years, the work done on the Hetch Hetchy and Tenaya watersheds should have a marked influence toward protecting the remaining living timber from any further depredations of a serious character.

Since 1905 the control projects carried on under our recommendations and immediate instructions has involved the treatment of over 202,000 trees at a cost of about $74,800. The average cost per tree in the several projects has ranged from nothing to over $4. In one case the infested trees were converted into lumber and sold at a profit of $1.12 per tree, so that the average net cost per tree for all of the projects was 37 cents.

In no case has more than 75 per cent of the infestation of the treated and adjacent areas been removed, and in some projects less than 25 per cent of the infestation has been removed. In every case where the control work was done at the proper time and carried out in accordance with the requirements marked reduction of the infestation has followed, ranging from 75 per cent to 95 per cent below that of the year preceding the control work. A few of the more striking examples may be cited. The Tongue River Indian Reservation project involved an area of about 75,000 acres, where in three years 45,000 trees had been killed by the Black Hills beetle. The treatment of 11,017 trees, or less than 73 per cent of the infested timber, in 1912, at a net cost of $903.53, or about 8¼ cents per tree (the work having been done by the Indians under the instructions of two of our entomological rangers), resulted the next year in 97 per cent reduction, or practically a complete control.

The northeastern Oregon project (Whitman National Forest and adjacent privately owned timber) involved a treated area of about 90,000 acres of yellow pine and lodgepole pine, where it was estimated that more than 400,000 trees had died within a period of six years on and adjacent to the treated area. The treatment of 34,490 trees (or less than 50 per cent of the total infestation) in 1910–11, at a cost of $28,851.67, or about 85 cents per tree, resulted in 1912 and 1913 in a reduction of over 90 per cent in the number of trees killed within the treated area and within a radius of 1 to 4 miles in the adjacent untreated area.

The Klamath River project, including the Craggy, Barkhouse, and McKinney Creel areas of national forest and privately owned lands, involved a treated area of 32,400 acres, or (including the adjacent forests) a total area of 82,000 acres, where it is estimated that over 60,000 yellow-pine trees had died during a period of 25 years. The treatment of 1,098 trees in 1912–13, or about 27 per cent of the entire infestation of treated and adjacent areas at a cost of $4,602.97, or about $4 per tree, resulted in a reduction within the entire treated and adjacent area of over 91 per cent, or practically complete control.

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Now, the significant part of the results is in the fact that the disposal of from 27 per cent to 75 per cent of the infestation of an area has been sufficient to bring the depredations of the beetles under control.

This means that instead of spending a great lot of money in a vain attempt to exterminate the beetles a comparatively small amount of money properly expended in disposing of a part of the infestation will give the desired results.

This is what we call the percentage principle of insect control. It is based on the well-known fact that the depredating beetles have to contend with a multitude of opposing agencies in nature, and that it is only through the power to overcome these agencies that they are enabled to maintain their position or to multiply to sufficient numbers to attack and overcome the natural resistance of vigorous healthy trees. Therefore, if by natural or artificial means they are reduced in numbers to a point where they can not kill the trees they are no longer a menace.

The Department of Agriculture, through its Bureau of Entomology and experts on forest-insect investigations and forest-insect control, is prepared to give advice, make special recommendations, and give instructions in the forest on the application of this principle and to conduct further demonstration control projects. The only thing we ask is for the Federal, State, and private owners to furnish the men to be trained in connection with actual work in the forest, and when they are trained and recommended as qualified, to put them in charge of the insect control and prevention work, wherever the conditions in Federal, State, and privately owned forests justify their employment. If this is done we can predict that within a few years the value of the timber protected from destruction by insects will represent a return of more than 100 per cent on the money properly expended for this purpose and that the benefit will be cumulative during a long period in the future.

We have a project which has been presented in which we propose to furnish one of our expert entomological rangers, who is one of the experts of the Bureau of Entomology, on the practical details of control work.

These men have had many years of experience in these different control projects, and are prepared to go to the park rangers and give instructions on the practical details of locating infested timber and carrying on the control operations at the least possible cost. We feel that the park officials can well afford to give the matter serious consideration. It means the protection of one of the beautiful features of the parks—the natural forests—and keeping them in a healthy condition, which can be done at a very low cost.

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Now I will be glad to answer any questions in regard to this matter.

ASSISTANT TO THE SECRETARY MATHER.

This certainly is one of the most important pieces of work that could be done in the national parks. Those who will look over the damage will see how the destruction has gone through the forests almost like a fire. Look at the pine trees in the upper Yosemite Park—it is as though a fire had swept through them.

This proposition of Dr. Hopkins to train up our rangers to look after this matter is very interesting. I am going to ask General Superintendent Daniels to conduct the discussion and say a few words from his standpoint.

MR. DANIELS.

The pursuit of this elusive bug that in so short a time becomes a bore is something that has occupied the mind of almost every supervisor, and it has certainly occupied mine and kept my hands busy scratching where dead leaves have fallen as I passed under the trees. In Glacier National Park there are several miles where there is not a living tree—a specter forest. The doctor has mentioned the possibility of cooperation, and in my private life I have had occasion to use that same system, and I am very glad to think we can do it in the department. We certainly need it, especially in California, where the tree doctor, or, as he is called, the tree dentist, has excavated the interior of a tree that is diseased and filled it with concrete. His work has been by the day at very exorbitant prices. They excavated so much wood from the tree that I can not speak of a tree in the abstract, it is always in the concrete. I found that at the end of six or eight months they had spent something like $35,000 to preserve something like 50 trees on a man's estate. Immediately we realized that it had to be stopped. We went to the University of California and secured men who could instruct the gardeners. We also hired in our agricultural department an expert and sent him down, and he instructed the gardeners on the ground. He spent two or three days telling them what to do and how to handle each specific case, then the gardeners did the work. We cleaned up and repaired, I think, a hundred and sixty-five trees at an average cost of $8 a tree.

Now the Government has this problem of tree protection. We can establish the same system. We can have Dr. Hopkins or his representative teach the rangers in the parks how to do this insect fighting. They are skillful enough to do fighting in all other forms, and I have no doubt they will readily adapt themselves to this form.

I would like to ask Supervisor Ralston if he has any comments to make or any requests or any question that he would like to ask of

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Dr. Hopkins regarding the method of treatment that would be advisable in Glacier National Park.

MR. RALSTON.

I have had no experience in fighting the tree beetle, and I should like to have the doctor explain how it is done and what method of treatment is followed. There are a great many beetle-infested trees in Glacier Park. The trees are principally the white pine.

DR. HOPKINS.

We did considerable work in the Glacier National Park some three or four years ago. You have the same beetle there that has infested the pine trees in the Yosemite Valley. We have two species of beetles on the Pacific coast and the northern mountain region, two beetles which affect the pine tree. They are easily recognized by their work. You do not have to know much about beetles or you do not ever need see a beetle. Faded foliage, turning yellow, indicates the presence of the beetle. By removing the bark from the trunk, a small portion of the bark, the very characteristic work is shown. This piece of bark here is hardly large enough, but it shows the work of the mountain pine beetle, which attacks the sugar pine and the mountain pine, or silver pine and yellow pine, by entering the bark—the beetle enters the bark from the outside and then excavates a long longitudinal gallery, sometimes 2 or 3 feet long, running almost directly up the tree in the inner bark. The eggs are deposited on each side of these in small groups, three or four in a group. When the eggs hatch the grubs or larvæ radiate in the inner bark. That is where they get a footing, in the inner layer of the bark. When they are matured they make a little case like the parent, and then the next thing they bore out through the bark and fly away to a different tree. To get rid of this particular beetle it is not necessary to cut the trees down, but remove the bark from the main trunk and leave the tops, because the principal beetles are in the main trunk and the eggs, after they are exposed when the bark is removed—these young, tender grubs are exposed to the elements and soon die.

It is not necessary to burn anything. It is really entirely unnecessary to burn the tops, because the tops are filled with a lot of secondary beetles that are the natural enemies of these insects. If the tops are burned, you burn up a lot of your friends. In that case it reduces greatly the cost of treatment by simply removing the bark from the main trunk, and that leaves the tree available for lumber if it is in a location where it can be converted into lumber. It will remain there for several years. It is only necessary to treat the principal sections infested. The scattered large trees and small trees

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will be left just as they are, with the tops on, because they support the natural enemies of these insects. They will take care of them. That is a fact that has been proven over and over again. It is an established fact that we can rely on.

There is another beetle which is quite different and more abundant here in California and of great destructiveness to the yellow pine. That beetle seldom, if ever, attacks the sugar pine. Instead of making a longitudinal gallery it makes a peculiar winding gallery. It is necessary to know all about the insects that you can, but it is not absolutely necessary to any more than be able to recognize these galleries to know what is the matter with the trees and to know what to do. We have published the method of treatment.

Now, in the case of this beetle the bark must be burned, because the young, instead of being exposed in the bark, are in the inner bark. In fact, they live just back of the inner, living layers of the bark, in the outer portion. When the larvæ are matured they go out in this outer bark and excavate little cases, where they transfer to beetles; therefore it is necessary to remove this bark from the main trunk, but not from the top. The trees die rapidly after they are attacked by this beetle. They have a struggle to overcome the resistance of the tree and the resin thrown into the gallery, and they must throw that out.

These beetles make longitudinal galleries in the trees, and the trees will remain green for nearly a year after they are attacked. Trees attacked in August will be green and healthy looking apparently until May, perfectly green, but after that, as soon as the hot weather comes on, they fade quite rapidly and are easily recognized. These trees with the living foliage may have every particle of the bark dead, but there is enough vitality that remains in the sapwood and in the branches to keep the foliage green. In such trees they are more difficult to locate. In this case the work should be completed, depending upon the latitude and altitude, about the middle of June, or the work can be continued until about the middle of July. That gives plenty of opportunity to locate the trees that have begun to fade.

Here we have the work of another beetle which is peculiar to Yosemite Valley, not entirely, but it is found in the Yosemite Valley. This is the Jeffery pine beetle. It is very much larger than the mountain pine beetle, and confines its attack largely to the Jeffery pine, and requires the same treatment, but it is nothing to be compared with the other two. These two beetles here are found in timber on the Pacific coast and the Rocky Mountains, and I think I am safe in saying that they have destroyed vastly more timber than forest fires in the past 50 years. All through the forest regions you will find fallen trunks and snags, indicating that at

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one time it was covered with fine matured timber which has been killed by these insects. That can all be prevented. It is a simple matter now that we have worked out the history and habits of the insects; it is an absolutely simple matter. You can go into any national park, no matter how far away, and cut out a few trees there, sufficient to stop this depredation, and by a little careful management it can be maintained forever, because this beetle has a hard struggle to live and overcome the resistance of these trees. It has also to overcome the influence of its natural enemies, including the parasitic insects and all sorts of things. It does not take very long to get results. It is far easier to control beetles in the forests than in our orchards and our cultivated crops.

MR. RALSTON.

Do they ever attack the balsam?

DR. HOPKINS.

No. There is a beetle that does attack the balsam.

MR. RALSTON.

In the Glacier National Park there are large areas in balsam that are apparently dead; just a few green limbs coming out from the top and the balance of the leaves are all dry.

DR. HOPKINS.

There are a number of beetles that attack different species of trees. The greatest damage they do is to cause a decay, which follows a primary attack. They attack the trees and excavate their galleries in the living bark, and in that way they cripple the tree. The injury forms a dead spot in the side of the tree, which is exposed for a long time before it is healed over. In the meantime fungus germs get in there, and then the tree starts to decay, and in the end results in the death of the tree.

The fir tree, I think, is more affected by root disease, which contributes to the death of that tree more than anything else. The great problem is to deal with these insects in the open. There is also one class of beetle that attacks the Douglas fir. It is very destructive to the Douglas fir, but not so destructive as the others.

MR. DANIELS.

I would like to ask you whether a ranger whose knowledge of entomology has been rather neglected would distinguish a tree that was attacked by one of these beetles before it would die.

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DR. HOPKINS.

That I would have to show you in the woods.

MR. DANIELS.

Is there any way of telling it by the bark?

DR. HOPKINS.

Yes; by the pitch. There is a small amount of pitch, or resin, that flows out of the entrance. Those are called the constituents of the tree; but in many cases those are not found. Our expert insect-control rangers can see a tree that is infested among a lot of others, and by pointing it out to a ranger you would show him in a little while.

MR. DANIELS.

I had in mind this cooperative scheme about which you spoke, so that our national park rangers would be able to carry on this work. I was wondering just what method they could pursue in order to take care of the tree before it was too far gone.

DR. HOPKINS.

The less he knows about entomology the better we like him. We can teach him all that is necessary to know about entomology as he goes along. It is not necessary for him to know too much about the insect. It is only necessary for him to know how to locate these infested trees; how to select those that should be treated, and then treat them. It is a simple proposition.

ASSISTANT TO THE SECRETARY MATHER.

I wonder if Dr. Jepson, from his knowledge of trees, would like to say a word? We would like to hear from him.

DR. JEPSON.

Mr. Secretary, I am not an entomologist. I am a botanist. I do not pretend to know anything about the matter upon which Dr. Hopkins has spoken. I have only learned some things from my entomological friends. As a botanist I should think that some of these beetles represent a pretty high type of beetle life. For this reason an entomologist told me that these beetles, or certain of them, restrict their activities to one kind of a tree. They do not range from one species to another. They have the power of discriminating with great accuracy the different species to work upon and confine

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their attention strictly to one kind. Now, that is something the botanist sometimes finds it difficult to do. Botanists do not always agree upon what are the different species of trees. Trees in the different portions of a range are very variable, and that is interesting to the botanist from that particular standpoint. In the Yosemite Park the botanists, in traveling through certain portions of the park in recent years—for a good many years—have been almost appalled by the destructive effects of the beetle that works upon the pine. We have here upon the coast a species of tree which we have thought, some of us, to be different from the pine in the North, and have spoken of it under a different name, but it now appears that the species of beetle which works upon that pine in the Sierras and works upon those trees in the Yosemite is the same kind of a beetle, so it would look to me that these beetles were exactly of the same species.

If the secretary will permit me, I should like to say a word about the flowers of the parks, just for a moment.

I think it will be generally agreed that one of the most important resources of the parks is the flowering vegetation. The flowers of the parks in California can not make their maximum appeal to the people at large until two conditions, I think, are fulfilled. There is no reason why there should not be as much interest in our flowers as in the Alpine flower fields. The first condition to be fulfilled is that the flowering plants must be better known than some of them are known to-day. If our flowers are to make a strong appeal they must be better known and in time we shall have a larger amount of knowledge available in that way. A few species have a very great interest for travelers. We have every reason to suppose that there are many species that have a very interesting and almost marvelous interest in the matter of their life history and habits. As that knowledge becomes known and becomes disseminated there will be on the part of the people a very much greater interest in the flower fields of the Sierras.

The second condition is that we want more common names, more folk names, for the plants in our parks. By a folk name, I mean a name that has been given to the plant by the folk, by the people who have lived amongst the plants, and know them from their point of view. Of course the botanist has named practically all of the plants in the parks. He has given them scientific names, but scientific names very rarely make an appeal to the people at large. When once you have folk names, then the interest in the flower fields will be very much greater. Take mountain misery, for example, which is found in the Yosemite Park and the Sequoia Park, that plant at once shows the flavor of the soil. There are many more such names, but

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many more must be invented either by us or by the people who live in the mountains or live in the parks.

I was coming down out of the mountains on a trip, and I had been studying what we botanists call *Calandrinia caulescens* var. *menziesii*, and I met some children that had in their hands a bunch of the flowers; so I stopped and asked the children what they called those flowers. After some little hesitation they said, "Kisses." I asked them why they called them kisses, and they either would not or could not tell. But as I went on I heard the larger or elder child say, "That is a botany man, and he is always asking why." You can not always tell why. Sometimes you just do things. So it is with many common names, you can not always tell why those names have been given. A mountain name, like mountain misery, at once makes a strong appeal to the people. Common names indicate the way in which the plants have affected the people who live there, whether they are conscious of that or not. I think in time we shall have these two conditions fulfilled. Imagine the thoughts of a person going to the meadows and seeing the mountain grass filled with shooting stars. I have seen as many as 500,000 flowers and shooting stars in a Sierra meadow, making a most wonderful sight. Now, when that plant is known to the people as is the edelweiss in the Alpine country, then we shall have created a desire on the part of our people that will be shown in their making excursions to our national parks.

ASSISTANT TO THE SECRETARY MATHER.

I am very glad to hear those words from you with regard to our wild flowers. What you say about the shooting stars bring back to my mind some very wonderful fields of that flower that I saw in the Sequoia National Park. They also bring back to my memory the sight of that wonderful flower *Erythronium montanum* in Mount Rainier National Park. I think the most impressive sight I ever saw in wild flowers was that wonderful white flower under the trees in great white masses. I can see the members of the Sierra Club standing there with drawn breath as they were looking on that wonderful sight. I remember the mountain misery very well, although I thought we had another name for it. As I came out five years ago from a trip up into the Kings River country and went into a telegraph office the operator sniffed a little bit and said: "You have been up in the mountains." I said that I had. "How do you know?" And he replied: "Why, I can smell the bear clover." It has a very distinct pungent smell, that old mountain misery.

We have a man that knows something about the mountains right here on the platform and I am going to have him say a word to us. He is an enthusiast in the congressional delegation from California.

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He is an important member of it. Congressman Kent has been a tower of strength, as also has Congressman Raker, in whose district is included Yosemite Park, and he has taken a great interest in the work there.

Our official party, coming from Washington, had the pleasure of the company of the Congressman from the seventh district, Hon. Denver S. Church. I am now going to call on Congressman Church to give us a few words about parks from his point of view.

Hon. Denver S. Church.

Mr. Chairman, ladies, and gentlemen, I naturally feel very timid here to-day. I am not familiar at all with the subject matter about which you have been discussing, to start in with. You have been talking about beetles and bugs. I can not discuss that, I am sure. I have in my time come in contact with a good many humbugs, and that is the only kind of a bug that I know anything about. I can not talk about them here to-day. I am sorry, indeed, that I have not had the opportunity of being at this conference until just now. I do not know what you have done, but I will grant that you have done something good.

I had the privilege some time ago of meeting my old friend Mark Daniels; by the way, I guess he is my young friend, though. I think I am the old fellow, in Washington, and I found that he was just full of national parks. Then, as I came along on the train from Washington I had the great pleasure of falling in with Mr. Mather and his party, and they could not talk about anything but the national parks. Now, I wanted to talk to them about California, because I am a native son of California, and I am glad of it; but they would not stand for that. They wanted me to come in with them and talk about national parks, and nothing else. I listened to them talk about national parks all over the United States. I am interested in national parks from the standpoint of California. They would not let me talk about California on the train, but I want to tell them right now that I am going to talk for a few minutes on the biggest subject on the face of the earth, a subject a thousand miles in length and 350 miles in width, bounded on the north by Oregon, where it rains 365 days in the year, where web feet are seen—maidens, men, and boys—seen, however, more often on men and boys; bounded on the east by the sagebrush State of Nevada, with its 80,000 men, women, and children, its 1,000,000 coyotes, and its million jack rabbits, horned toads, and billy owls. When the Creator of all things chose the very best dirt that he could possibly find from His great universe of worlds and made His great masterpiece, California, and hurled it out

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into space, I am sorry that it landed so near the sagebrush State of Nevada. However, that is no knock on Nevada. I do not intend it should be. I was married in Nevada, and my oldest child was born in Nevada. California, bounded on the south by Arizona, the land of the gila monster, and bounded on the west by the boundless waves of the great sea.

When I was a boy, and, by the way, that is a long time ago, my father built a cabin in the woods just on this side of Old Baldy. Often at eventime I climbed up the old rock and looked out and saw the sun going down behind the waves, and I saw the crimson streak as it reached downward toward the shore, and I saw the great waves meet and dash against the bleak and ancient rocks; saw the tide come in and the great ships pursue their lonesome, solitary way.

California! There are so many phases to this great subject. There is California in the springtime, when the earth is green and the landscape covered with flowers, when the meadow lark is singing down in the meadow, and the dove is cooing on the tree top, the quail is whistling back of the barn, the ground squirrel chirping on the rock below, and the grouse calling from the mountain top—California in the springtime.

Then there is California in the fall of the year, when the autumn winds begin to bellow and the great white clouds, sentinels of the winter storms, drive majestically across the sky.

Then there is California in the wintertime, when the fog rushes down the brow of the old blue mountain, and the storm clouds hover around Mount St. Helens, Mount Shasta, and Mount Diablo.

Then there is California in the nighttime, away late at night; California by daylight; and California by moonlight. Oh! The great big California moon. Twice as big and twice as bright as the moon of any other land. Do you remember, Mr. Chairman, the time that you stood on the street by a lamp-post and looked over toward the Sierra Nevada and saw two moons rising instead of one? Talk about the California moon. I have been over in the East and I have seen their little, old, freckled, measly, weather-beaten moon out there, not even a half sister, or a sister-in-law, or a mother-in-law to the great big California moon that we have out here.

Then, there is California by the seashore; but, oh! the treacherous sea, the treacherous waves, the treacherous undertow, and the 10,000 treacherous summer girls clad in airy garments. It is no place for us to linger by the shore; but let us go back into the mountain heights and stand 10,000 feet above the level of the sea along in the Sequoia Park, if you please, where the pioneer stood in 1849. We must tread lightly, though, because this is holy ground, for here is

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where they slept the first night on California soil; from here they made trails and picked their way; they ran their drifts and they dug their shafts and they washed the sands in the mountain streams for gold. But they are gone; their camp fires long since have ceased to burn, and their cabins have fallen by the way of all things, like their broken picks and shovels. Their work is done; they are still; but let us hope when they took their departure that they simply journeyed a little farther west, and that to-day away over beyond where the sun goes down—away over beyond where the shadows start—for their western children they are watching and waiting.

From where we stand we can look across the great canyons, clad with their drapery of green, and the great mountains that rise above the Yosemite. Over there where the storm king reigns upon his granite throne; over where the eagle builds her nest; over there where the rivers fall from towering heights and the rainbows paint the sky—from there we go down into Tehipite Valley. I hope you will all go there and look at the great dome that rises 5,000 feet perpendicular, washed and smoothed by the winter storms and the winter winds. There the fishes swim, eager to grasp the hook, the wild deer feeding on the hillside, and high pine trees overhead will just simply shame your heart.

Go right across the way to the great Sequoia Grove, with its old monarchs of days long since past and gone; go to the forests on Mount Whitney, which is only 100 miles from there, and it lifts its snowy, ancient head above all other mountains on that range; see its great trees, standing without kith or kin, sentinels of an age that is past and gone. Oh, if they could only speak, what stories would they tell; but they can not speak. Did I say they can not speak? Why, in days gone by they have spoken in silvery tones to me. When I was a child I tried to climb their rough, rugged trunks. They spoke to me. And in after years when I went there and camped amid their groves and heard the forest wind sigh through the branches of the trees as the great moon drifted overhead, they spoke to me; and in after life, in the wintertime, when fond memory constrained me to visit my ancient friends, I found them there, standing as they had stood for all the ages, these sullen, sulky giants, clad in their overcoats of snow, and they spoke to me. They taught me my lessons that I have never forgotten. I have never asked them a question in my life that they did not answer, and just three lessons to me that they have imparted—they taught me to love the lesser trees; they taught me to love all the mountains and woods; they taught me to love my fellow man. They made me wander, and as I wandered I thought of God, the destiny of my country, and the human race.

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The mountains are full of wonders, and a man who is in love with the mountains can not stay out of them if he would. Some people like the cities, with their noise, their woes, and their great white ways, but give me the mountains, clad in verdure of green; take me to their canyons, deep, dark, and steep, down which mighty waters rush and plunge and fall into great pools flooded with daylight, in which speckled fishes swim, around which masses of ferns and wild flowers grow. Up there there are waterfalls, where bluebirds fly and snowbirds mate, and the rainbows are charmed and wooed and won to captivity by the mists. Up there the mountain lion shrieks and the great owl hoots at night, and the voice of God can be heard murmuring in the highest branches of the trees. Up there the crystal dew is as pure as angels' tears, falling gently as the night. Up there the skies are blue, the stars are big, the days are calm, and the nights are filled with peace. I am in love with the mountains. I am in love with the national parks; and after taking it into consideration, I do not care where the park is located or where the great mountains in this country are located, I am in love with them.

I believe the national parks ought to receive greater attention than they have in times past, and I am encouraged, ladies and gentlemen, to find these men, who are full of this subject, uniting shoulder to shoulder for the betterment of our national parks, uniting upon plans to get people to come to the national parks to visit them and see the mountains of our great land. It is nonsense for the people of this country to go to other lands when we have the great Sierra Nevada Mountain Range here upon our east and our great Rocky Mountains and parks in the northwest, mountains that you can not see in any other land. I say that I am very much encouraged with the thought that these men have united upon the proposition and that a new era has dawned for the development of the national parks for the purpose of getting people to come to our national parks. It is gratifying to know that everybody is working harmoniously to bring about the same great results. I am glad to have had the privilege of just saying these few words to you, ladies and gentlemen, upon this great subject and to lift my voice and say "God bless you" and "God speed you."

Assistant to the Secretary Mather.

If one does not get the spirit of the parks and the mountains in his soul after that it is not worth while. About those two moons. I have not seen those two moons, but I have seen something up there that is a whole lot better. I have been up in the Kings River country, in the region of Rae Lake. I have seen the sunset over in the west, and just as the sun went down I saw the full moon come up

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in the east. The sight of the great, full sun going down on the west side and the great, full moon coming up on the east is far better than any two moons you could possibly see from any lamp-post in San Francisco.

We are now going to hear something about the business of our most easterly national park, not merely a national park in name only, but at the same time a part of that great system in which we are all interested, the Hot Springs of Arkansas, with an original Government reservation of but a few hundred acres. We counted in hundreds then, where we now count in hundreds of thousands in our parks. Notwithstanding the fact that it has been known in the East for many years for its curative waters, it has not been thoroughly appreciated. Some years ago the then Secretary of the Interior, Secretary Hitchcock, was in charge of the Hot Springs, and asked an architect in New York to see if he could not work out some idea for the broad-gauge development. Mr. Hitchcock thought there were great possibilities in the Hot Springs and that they could be made to line up along with the great baths or spas of Europe if they were properly presented to the people and if it were possible for the people to have an opportunity of enjoying themselves there as they do at the spas abroad.

There was prepared at that time, at Mr. Hitchcock's request, a comprehensive scheme, worked out by means of topographical maps. This was the work of Mr. Howard Greenley, of New York, but at that time he had not seen the park. I was very fortunate in having an opportunity of meeting Mr. Greenley a few weeks ago in Washington, when he revived this scheme. Mr. Greenley consented to come out here to San Francisco and attend this conference, and also agreed on the way to stop at Hot Springs and study the matter thoroughly and then give us the ideas that occurred to him, visualizing the possibilities of the park along the lines suggested.

Here were these plans originally made lying away in the department, as many a good scheme has been treated before. I do not know whether this one can be resurrected or not, but we are going to try it. Mr. Greenley is very much alive to it. He will do his part toward resurrecting that scheme he put before Secretary Hitchcock several years ago.

Mr. Howard Greenley.

Mr. Secretary, ladies, and gentlemen, I feel, after the last speaker, somewhat at a disadvantage in having been born in the East.

I have had the honor to be asked by Mr. Mather, the Assistant to the Secretary of the Interior, to present to you a report embodying a suggested improvement for the Government reservation at the Hot

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Springs of Arkansas. I greatly regret that it was impossible for me to be present at the conferences which have already been held. It is very stimulating to learn of the admirable work which is being carried out by the Department of the Interior in its projects for the intelligent development of the national park reservations along lines of permanent improvements.

My acquaintance with the Hot Springs Reservation began in 1906 and 1907, during the term of office of the Hon. Ethan Allen Hitchcock, then Secretary of the Interior. He was greatly interested in this reservation, and asked me for suggestions which would make for the physical improvement of the locality as well as simplify the problems of administration. I therefore submitted a plan and a report based on such information as I could obtain. This plan, which I shall show you later, might at that time have been largely carried out. At present, however, improvements of such substantial character have been made as to require a very considerable modification of it. I am encouraged to believe, however, that with Mr. Mather's and Mr. Daniel's enterprise and activity some admirable results may still be possible.

I shall refer briefly to the history, geographic location, and topography of the reservation and to the Hot Springs and their therapeutic quality.

These Hot Springs are situated in the geographical center of the State of Arkansas at the easterly base of the Ouachita Range of mountains, a southerly extension of the Ozark Range. They are associated by legend with the visit of De Soto on his expedition to the Mississippi River. He may have discovered in them the mythical fountain of youth of which he was in search. The lands were ceded to the Government by the Indian tribe in the vicinity of 1818. By act of Congress in 1834 the springs and the territory adjacent thereto were permanently reserved for the United States Government, thus creating the first national park reservation of the country.

In 1877 the Government appointed a commission which recommended a permanent plan of improvement. Under that plan (the report states) the land which was unessential to the reservation was subdivided and the lots assigned to various individuals. By reason of this generous distribution the extent of the original reservation, amounting to 2,529 acres, is now reduced to 913. I regret not having a lantern slide of the map showing the way the plotting of the streets and alleys was done at that time, but it is quite evident that the plan was not submitted to any art commission. And this is where all our trouble began back in 1877. The conclusion of the work of the commission resulted in the retention of the Hot Springs Mountain, North Mountain, West Mountain, and Sugar Loaf Mountain as the permanent reservation.

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The hot waters issue from the base and the lower slopes of the Hot Springs Mountain, east of the valley. The area is a narrow strip a few hundred feet wide and a quarter of a mile long. There are 46 springs, of which 44 are hot and 2 cold, with temperatures for the hot springs varying from 95° to 147° F. and 46° to 55° for the cold. The hot springs seem to be more abundant in their flow than the cold springs, and the total estimated amount of water is nearly 1,000,000 gallons a day.

There was no chemical analysis made of the waters until 1899. They contain various elements in combination or as acid salts, but in very small amounts. The hot springs are radioactive to a marked degree, but as a radium emanation or gas in solution and not from the presence of a radium salt.

The source of the waters is meteoric. They correspond closely to the ordinary springs of the neighborhood, except in the element of heat. They derive their heat, in all probability, from still heated igneous rocks, which convert deep-seated waters into vapors, and these in turn ascend through fissures toward the surface, meeting spring waters, which are thus elevated to the existing temperature. There is no indication that these springs are dying. The flow remains constant, and the loss in maximum temperature is inappreciable, amounting to 1 degree Fahrenheit in a little over 50 years.

The curative value of the waters of these hot springs is very well known abroad, and in not a few instances have been recommended by foreign physicians to patients seeking relief from ailments who have visited European resorts with this object in view. This demonstrates the need of disseminating more general information regarding them in our own country.

The Government administration of the reservation and the regulation of the baths and bathing privileges show constant improvement. In contrast to this the municipality of Hot Springs, the greatest beneficiary, shows almost no inclination to assist in the Government's regulative policy or to enforce civic improvement along æsthetic lines in conformity with the Government's policy on the reservation. There has been cooperation on the part of certain associations and private persons and lessees which, fortunately, has been of value in adding to the attractive appearance of the reservation and immediate neighborhood.

The charges for the use of the waters by the various bathing establishments, supplemented by rentals and other sources of income, is disbursed variously in salaries of the administrative force, in the maintenance of the free bathhouse, and the improvement of the reservation.

So much for the description of the Hot Springs Reservation, as it is. In the report submitted to Secretary Hitchcock I described

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a program given at the Ecole des Beaux Arts, which shows a French interpretation of a problem of this character. This program presupposes ideal conditions and the solution is naturally an ideal solution, eliminating the element of the sea baths, the requirements of the program might perfectly well suit conditions for the conception of any thermal establishment. Make it a center of attraction.

Having had the opportunity on my way out of seeing existing conditions at Hot Springs, I can not recommend this scheme as practical at the present time. It is to be regretted that the commission appointed in 1877 did not have the foresight to retain sufficient property to permit of it in their impartial distribution of land. I present this scheme as though it were practical if only to furnish a basis for discussion and from which a modification may to a great extent still be carried out along lines of least resistance.

One of the dozens of reasons why I think this was advisable is from a clause I read from the superintendent's report on the Hot Springs in 1905. This report goes on to say:

In my opinion, experience has demonstrated that the present system of operating the baths through the medium of private lessees is in conflict with public opinion and is incompatible with local conditions, and that the Government should, as soon as practicable, consistent with existing conditions, assume absolute and complete control of this reservation and operate the bathing interests under Government supervision and control, thereby eliminating the spirit of commercialism which is manifest under present conditions, and through scientific equipment, perfection of system, order, discipline, and intelligent direction, extend the benefits to be derived from the healing waters, with rates adjusted to cover prudent operating expenses and necessary improvements. The present system, if it ever had any meritorious features worthy of consideration, has outlived its usefulness and should be supplemented by full Government control in the management, operation, and supervision of the baths. The present bathhouses should be replaced with substantial, extensive houses, built upon approved plans with perfected detail as regards system of bathing under proper medical direction, trained service with modern equipment and furnishings, preserving all sanitary and hygienic features of light and ventilation.

That, I think, was the idea that Secretary Hitchcock had and which I attempted to carry out.

(Mr. Greenley exhibits series of lantern slides, during which Mr. Greenley said: The public free bathhouse should be separated from the paying bathhouse on the Government reservation.)

ASSISTANT TO THE SECRETARY MATHER.

Now, if there is anyone who would like to ask a question, I would be very glad to hear from him.

MR. W. T. S. CURTIS.

You suggest the removal of the old free bathhouse. Where would you suggest it be removed?

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MR. GREENLEY.

My idea was to remove it to some other part of the reservation.

MR. CURTIS.

Beyond the superintendent's house?

MR. GREENLEY.

Yes. That is one of the things I think should be done.

MR. CURTIS.

I understand the property on the left-hand side of that avenue you exhibited, Fountain Avenue, is privately owned?

MR. GREENLEY.

Privately owned on that strip, on one side; but nearly all of the property which is located on the east of this scheme of development, with the exception of that on the west side of Central Avenue, is a very inferior type of property. I mean by that that it is not improved to any great extent, and it looks as though it might be acquired for a comparatively small expenditure. There are buildings there of the type I exhibited to you, and all that sort of thing, on the other side of what is called the Opera House.

MR. CURTIS.

This general type of architecture that you have spoken of would cause a pleasing effect in the sky line, would it not? If that plan were followed, the sky line would be very pleasing?

MR. GREENLEY.

Yes. There is only one thing that I regret that was done back in 1888 or 1889, and that was the covering up of Hot Springs Creek, which ran directly through the main street, and which was simply used for surface water drainage. One of the features of the baths at Carlsbad is that through the central street runs a very beautiful stream, with bridges and various landscape effects, making a very attractive view. At the Hot Springs this was covered up with a solid concrete tunnel, and I have no doubt that stream is going to be buried in that tunnel permanently, because it is a very substantial piece of work.

ASSISTANT TO THE SECRETARY MATHER.

Have you a word or two to say, Mr. Daniels? We would like to have your thoughts on this matter so far as they have occurred to you.

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MR. DANIELS.

I do not believe there is a place in the United States which the Federal Government has anything to do with that cries out so much for remodeling as Arkansas Hot Springs. We hear a great deal about the planning of the landscape architecture in Europe, with the idea of developing the picturesque there. Absolutely the reverse has been done in Arkansas. I think the place has been allowed to grow up much like Topsy. If there is anyone who is interested or who has a sincere regard for the holdings of the Federal Government throughout the country, and especially at Arkansas Hot Springs, I am sure that he will go back with the firm determination to do all that he possibly can to bring about the execution of such plans as Mr. Greenley has presented to us here to-day. It struck me while I was on the ground that almost the exact plan that he has presented here to-day is the only thing that would fit the conditions there. I do not wish to claim the honor of having thought of the same thing that he has thought of, but in sketching out some of the possible arrangements at Arkansas Hot Springs I drew almost the same diagrammatic plan that he has here. I do not believe that there is any other plan that could be successfully worked out. As to the details, of course, I know nothing; but it is hoped that some such plan as has been shown here will be adopted by the Federal Government. One hundred and forty-five thousand people annually go to that place, and each one goes away with a very depressed feeling and a great deal of disgust instead of admiration for our Federal Government.

ASSISTANT TO THE SECRETARY MATHER.

I want to thank you, Mr. Greenley, on behalf of the department, for the time and attention you have given to this work. You have been very valuable to us, and I hope it will be possible for us to develop something from this later on. If we can not reach this particular problem right now, I hope we shall be able to get to it before very long.

We shall begin our afternoon sessions at half past 2 to-day. We will have a chance then to hear from Mrs. Sherman on behalf of the General Federation of Women's Clubs, and the work that it is doing in the furtherance of our aims.

After we adjourn I would suggest that you look through some of the exhibits in this building of the various parks which the Southern Pacific Co. has installed. The superintendents and others will arrange to gather at the Old Faithful Inn for lunch.

We have with us here now a representative of Mayor Rolph, Mr. Edward Rainey. I am going to ask Mr. Rainey to say a word or two to us on behalf of the city's executive.

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Mr. Edward Rainey.

Mr. Chairman and friends, when those pioneer ancestors of ours were called to the great beyond, just a little farther west, as your representative in Congress so beautifully put it a moment ago, they left behind them in hearts of all men in California and the West what is known as the spirit of the West, which is typified, we think, more in California than any other part of the West, and it is in that spirit of the West that I want to briefly welcome you gentlemen representing the Government of the United States to our city of San Francisco.

We are certainly pleased to have this conference come to our city. We want you men who have come from other parts of the United States to feel that you are as welcome here as though you were our kith and kin. We want you to enjoy your visit to San Francisco, and we hope that you will profit by your visit to this exposition. We hope the cause which you represent will profit by the papers and discussions which are to be heard during your conference. I have nothing more to say, because I know you are anxious to get over to Old Faithful Inn for lunch. We welcome you sincerely and hope that this will not be your last visit to San Francisco.

As a municipality we touch your branch in the Federal Government only at one point in the Yosemite National Park—in the development of the Hetch Hetchy Reservoir and Lake. I want to say to you that the city of San Francisco is going to and will continue to carry out its agreements in regard to the Hetch Hetchy to the letter. We are not going to destroy any of the beauties of the park. We are going to improve the beauties there. We are going to live up to everything we promised to do, and I want to say to the superintendent of the Yosemite National Park, if he is here, that he will receive the hearty cooperation of the city authorities at any time and upon any subject which he wishes to bring before us.

Just one word more of welcome, which comes from the mayor of San Francisco, and from the people of San Francisco. We wish you well in all of the things in which you are interested.

Assistant to the Secretary Mather.

We will now adjourn. I want to say right now that there will be two or three more of the parks taken up this afternoon. Also the concessioners will have an opportunity to be heard during the afternoon. I want them to feel that they are a part and parcel of the parks and that they will have a full opportunity to be heard.

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AFTERNOON SESSION, MARCH 13.

ASSISTANT TO THE SECRETARY MATHER.

The conference will now come to order. We are going to have the pleasure now of hearing from one who has taken an interest in national parks for some years and who is now doing some intensive work through the General Federation of Women's Clubs. Mrs. John D. Sherman has been very active in the work of women's clubs and has recently been appointed chairman of the conservation department, and I now take great pleasure in introducing Mrs. Sherman to you.

MRS. JOHN D. SHERMAN.

Mr. Chairman, and friends of our national parks. With nearly 2,000,000 women already at work for our national parks it is particularly gratifying to the conservation department of the General Federation of Women's Clubs that the Interior Department of the United States Government is also going to work for an adequate national park service. The General Federation of Women's Clubs directs its activities through 11 departments of work. The conservation department has to do entirely with the conservation of our natural resources. The work of this department is subdivided under eight division heads—natural scenery and national parks, forestry, soils, water, and waterways, the establishment of good roads, and the roadside planting of the Lincoln Highway from New York to San Francisco. The conservation of natural scenery and the development of national parks is a comparatively new feature of the work of the conservation committee. The club women have undertaken this work because they recognize the growing and imperative need for more recreation places out of doors. A nation progresses largely according to the use that is made of the leisure time of its people. As Stevenson so well puts it, there is nothing that should be so much a man's business as his amusements. Now there is one of the strongest of forces that controls the people during their leisure hours. It is a splendid antidote for the conditions growing out of a civilization that has become too complex to be wholly sane and wholly safe. Outside of home influences the intimate acquaintance with nature is one of the strongest and greatest that can be brought into the life of a child. It has an influence that lasts all through life. Because of this we are asking the public schools all over the country to give more attention in the future to the study of the things of interest in the natural world out of doors.

Every community should have a place in which the people may spend some of their leisure time, where they will be brought in direct contact with things of beauty and interest in the outdoor world.

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For this reason we need more city parks, more county and State parks, and especially more national parks. There never was a more fitting time than the present to arouse the people to a greater appreciation of the value of America's natural scenic beauty. These natural scenic areas are rapidly decreasing in number and size. Those that remain of them are in increasing danger of two kinds; one danger is that they may become privately owned and the public be excluded, and the other danger is that they may be used for commercial purposes and their beauty destroyed.

The women of the General Federation—and there are nearly 2,000,000 of these—believe that the first step in this campaign for natural scenery is the development of the national parks that we now have. We believe that the people will make use of their great public playgrounds when they are made ready for the traveler, and the club women of the country stand ready to do their share of the work in getting them ready to be seen; but we are not willing to stop here; we are not satisfied to stop; we want more national parks, and we are going to keep right on working for them. We had a share in the making of the new Rocky Mountain National Park, and we are now engaged in making a natural scenic area survey of the United States. It is our aim to have the women make a list with a description of all of the scenic areas in every State that are now being used for park or recreation places, and in addition, we are to have a list of those areas of natural scenic beauty or scientific interest that should be preserved. Some returns have already come in along this line of work, which show that the women of Arizona are going to work for the Grand Canyon National Park. The club women of Utah have indorsed the Sawtooth National Park project, and the women of New Mexico are particularly alive to the value of the conservation of natural scenery, and at the next Congress they will ask that three of the national reservations in New Mexico be created national parks.

Another feature of the campaign for natural scenery that we are conducting is to urge all of our clubs, the clubs all throughout the country, to have one program, at least, during the club season devoted to natural scenery and national parks; and we furnish the programs of the bibliography for such programs, and the State federation at its annual conference will have an afternoon or evening devoted to this subject.

The Government now owns many scenic areas that are splendidly fitted for park purposes. These areas are of nation-wide interest, and are better suited for park purposes than for any other use. Can the American people do a more rational thing at the present time than to help make these places national parks? The general federation has conservation committees working in every State in the

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Union. Through these committees, we shall reach nearly 2,000,000 club women, and, through them, we shall arouse public opinion to the value, both ethical and economical, of the natural scenery of our national parks.

We shall bring to the people the message of John Muir, the greatest of all nature lovers and nature writers, to come to the mountains and get their good tidings.

Assistant to the Secretary Mather.

We were to have Mr. Henry S. Graves, the Chief Forester. But Mr. Graves could not come, hence he sent Mr. Potter, associate forester, who will read Mr. Graves's paper, "National Forests and National Parks."

Mr. Potter.

Mr. Chairman, ladies, and gentlemen, I am sure that Mr. Graves regrets very much that the need for his personal attention to important matters in Washington made it impossible for him to be here with you to-day; but it is an ill wind that blows no good. Therefore it is my good fortune to be here to visit California, which I also have the good luck to be a native of, and it is the State in which I was raised. It is a great pleasure to see this beautiful exposition, which has grown up where I used to stroll along the beach and tramp over the barren sand hills.

Mr. Graves's paper is as follows:

"The development and administration of the national parks and of the national forests are related in the most intimate way. Both classes of reservations have been established to be retained permanently in public ownership and to be administered for specific public benefits. The parks are nearly all either contiguous to national forests or surrounded by them. Many of the present national parks formerly constituted a part of some national forest; most of the parks that may hereafter be established will cover areas now within national forests. The parks contain great areas of forested land, which present problems of protection from fire, insects, and disease identical with some of our national-forest problems. Both the parks and the forests are in considerable part still in a state of wilderness and require improvements to make the different parts of them accessible for protection and for use and enjoyment by the using public. Physically interlocked, they call for a correlated system of fire protection and a correlated system of transportation and communication.

"Just as there are in the national parks very definite forestry problems, so also in the national forests there is a definite and fully recognized problem of development and use for recreation purposes. The

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national forests are chiefly in mountain regions and contain areas of unsurpassed scenic beauty and interest. Scores of such well-known mountains as Baker, Olympus, St. Helens, Jefferson, Shasta, Hood, Whitney, Pikes Peak, Ouray, Washington in New Hampshire, and Pisgah in North Carolina, are in the national forests; but there are also many hundreds of little-known mountains and innumerable lakes, streams, and other scenic features that afford ideal spots for the use of those seeking health and recreation. Already these areas are becoming more and more used. Probably not less than one and one-half million people visit the forests every year for recreation purposes; and this is a use of the forests that is being fostered and developed by the Forest Service just as other uses are encouraged. In the national forests the recreation problem, or, if you please to call it so, the park problem, is not confined merely to certain large areas of extraordinary and spectacular scenic character, which may some time be considered as desirable for national parks, but it is one that concerns thousands of points throughout the forests—a problem that is being handled with forethought and in a constructive way, just as are handled the development and use of other resources like timber, forage, water, and land.

"These considerations point to the fact that the national park problem is not confined to certain areas set aside under that name and administered with the recreation resource as the dominant if not the only resource to be considered. We have a much bigger problem—that of properly handling the recreation resource as one of the interrelated resources which are combined in a vast public property now held permanently by the Nation. That resource is a very great one. It must be protected, fostered, and developed for its maximum use. But in the case of the forests it can not be handled as though it were either the sole or ordinarily the dominant resource. Along with it must be handled other natural resources whose proper use and development are essential to the industrial upbuilding of the regions and of the country at large. There are places where the recreation resource overshadows all other and the property must be handled with this form of use primarily or exclusively in view. But, as a rule, the timber, forage, and other resources must be regarded as dominant. Nevertheless, they should be developed with such restrictions as to provide for the protection of scenic values.

"This large conception of the problem, on the one hand, of the recreation resource as a whole, and, on the other hand, of its relation to other economic resources, is essential in laying the foundation for a sound policy of national-park development. It underlies the proper selection of areas to be set aside as national parks. It underlies the determination of boundaries of these parks. It underlies a correlation of the development of the parks themselves with the development

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of the recreation resource in the national forests, or, if I may express it thus, with the development of thousands of miniature parks in the forests, each of which on a small scale is serving the same public benefit as the national parks themselves.

"An essential element in this broad conception of the problem is what I would call a national viewpoint, combined with a constructive spirit. It is necessary to look far ahead, to foresee what the best public welfare is going to call for, and to make such plans and such provisions that the needs of the people of the country as a whole will have been most effectively provided for. The second-best or third-best or fourth-best thing should not be done instead of the best merely because it happened to be proposed, was believed to be good, and was therefore accepted without inquiry to learn whether there was something else still better. It is a waste both of money and of opportunity to develop as a national park an area which will be less valuable to the public at large than some other area in the same general region. The question of accessibility and probable use should be considered not from a local but from a national standpoint. Every national park should contain natural attractions worthy of national fame and of development by the use of national funds. On the other hand, provision for needs of a more local character should be made through the development of the recreation resource of the national forests, where national forests are in existence and available for this purpose.

"A failure to recognize these broad principles leads inevitably to a haphazard selection of areas as national parks, mistakes in boundaries, and unnecessary obstacles retarding progress in park development. The narrow view is at the basis of the mistaken idea held by a good many that the recreation resource can not be conserved and developed in a national forest, and that every area of special scenic interest must be put into a park if it is to be handled properly. Personally I regard the national parks as very necessary, but I regard them as meeting but one part of a greater problem that involves not only our great natural wonders, but also a vast number of less striking yet locally important areas which the public controls and which ought to be developed in the interest of the public.

"In the administration of the national forests it is a cardinal principle that each class of land should be put to its highest use and render its greatest service by use. In some cases certain areas are either suitable for a single use only or susceptible of proper protection and development only when devoted exclusively to one purpose. Ordinarily, however, with a certain measure of restriction here and there the different resources can be developed side by side. The forage is used for grazing, but it is made secondary to

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timber production and is not allowed to be so handled as to injure the forest. In some places the protection of the water resources and prevention of erosion and slides is the most important matter. In such places cutting of timber is not carried on. In some places grazing is prohibited on city watersheds to insure the prevention of erosion and the safeguarding of the purity of the water. In some cases the grass is held for the use of the elk and other game. And, finally, the protection of scenic roads, lake shores, and other points of special esthetic value is carefully safeguarded in the cutting of timber and in other forest work. In short, consideration is given to the use which will accomplish the greatest public benefit.

"As occasion arises to consider establishing national parks from areas now in national forests, the fact that protection of the scenic features is one of the purposes of the present administrative control should be borne in mind. Roads and trails are being developed, as this can be done in connection with the protective work and development of other resources. As the funds available for road building increase through increasing receipts from the sale of timber, there will be possible much more attention to the needs of scenic sections of the forests for road development. Where, however, there are areas that should be devoted exclusively to public recreation, and that can be more quickly opened up as national parks, they should be made such. But that action should be based on the larger consideration of a national system of recreation development. Parks should not be established merely because of a local demand for roads or for advertising some city or town or to boost real estate near the proposed park. Only such areas should be selected as are to be devoted practically exclusively to park development, and then only as a consistent and orderly part of a large plan. Otherwise the areas should remain in the national forests, and be handled from the standpoint of recreation development side by side with other resources.

"If this principle is followed, there will not arise any difficulty about conflicting use of resources, because only areas are included in parks in which the recreation development so overshadows other resources that they may remain unused or entirely subordinated to park purposes. It would be a great mistake to include in parks great bodies of commercial timber merely to include some mountains or canyons of scenic interest. This would result either in preventing the use of the timber or having a national forest under the name of a park.

"The same principles should be followed in laying out boundaries of parks. It should be remembered that the forests are carefully laid out units of administration. Each is handled along lines of forward-looking working plans. To establish a park or draw the boundaries of a park with thought only for the park problem and forgetfulness

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of other public property that is being handled on long-time plans is to fail to understand the larger public purposes of both forests and parks. To illustrate: I have for four years been urging that the Grand Canyon be made a national park. I have urged this because it is one of our greatest natural wonders, one of the greatest in the world, and because it should be handled exclusively for park purposes. In drawing the lines, however, there should be considered not only the needs of administration of the park but the needs of administration of the Kaibab and Tusayan National Forests and the enterprises that have already been initiated upon them in the use of their resources and in developing the industries of the region.

"Wherever national forests and national parks are contiguous their administration should be very closely correlated. This is especially important in fire protection and in building roads, trails, and other improvements. In fire protection there should be the same tying together of lookout and telephone systems, trail and patrol routes, and patrol and fire-fighting organizations as between two contiguous national forests. Much is already being done now in that direction; it should be more. In the matter of roads, many of the approaches to parks are through national forests. At present the road funds of the Forest Service are absorbed in construction primarily for fire protection and to aid in community development. There is but little available for strictly tourist travel. With the increase of receipts this condition will later on be much improved, and contributions can be made for highways which will develop chiefly the recreation resources of the region. Meantime most of these park approaches will have to be built from funds specially appropriated for the purpose. In my judgment, when money is appropriated by Congress the approach to the park through the forest might well be included; and authority should be granted to use park funds when the roads cross into a forest here and there. Provision for this could be made merely by adding a few words to the bill. It would avoid the embarrassment of present lack of authority and prevent the effort to change the park boundaries merely to cover a few miles of road.

"My final word is to emphasize that there are not two separate and distinct problems—parks and forests. There is one great problem of development of the scenic features of our public lands for recreation use and enjoyment, and both the parks and the forests are contributing to it."

ASSISTANT TO THE SECRETARY MATHER.

That is certainly a very interesting paper. That keynote of cooperation is very interesting. There have been one or two specific matters in which we have already cooperated with Mr. Graves since

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I have been in Washington. One of them is the matter of a road to Lake McDonald in Glacier National Park. That is practically all within the park boundary, but the land along the park is in private hands. It becomes necessary, if we are going to save the lake there for its scenic value, to arrange for an exchange of timber in the national forests, just as was done in the Yosemite National Park. We worked out an arrangement that was satisfactory both to the Department of the Interior and the Department of Agriculture. If it had not been that the settlement was brought about near the close of Congress, we would have had the bill through. It was impossible to get it out of committee. It would have passed if it could have only reached the floor, having already passed the Senate. We will have to wait over until the next Congress before we can bring it up again.

Also at Mount Rainier there is another condition there outside of the park—the beautiful road that leads from Tacoma up to the entrance of the park, with its splendid Douglas firs along the road. Work is now being done by Tacoma and Seattle people upon a bill that will make possible an exchange of the land owned by the lumbermen along that road for other land so that a strip along that road may be preserved for all time.

Mr. Daniels, have you a few words of comment on the paper read by Mr. Potter, or any features of it?

MR. DANIELS.

Mr. Secretary, it is particularly gratifying to hear Mr. Graves, who is the Chief Forester of the Service, reiterating the slogan of the national park service regarding those particular characteristics which should determine the selection of a national park. It is gratifying because it is an encomium on the skill and good judgment of those who have selected all of the national parks in the past, for there is not one exception to the rule that these areas should be selected for exclusively scenic purposes. Every national park we have in the United States is primarily for recreation in its character.

There are, of course, in the national parks some problems relating to forestry. I find that I can not entirely agree with Forester Graves that the park administration and the national forest administration should be unified. The prime purpose of the development of national forests is commercial, and if it is ever successfully consummated and carried on the spirit of commercialism must pervade the organization. The prime purpose of the development of the national park service is quite the antithesis of commercialism. It is idealism. The problems in the administration of a national park are as foreign to the problems of the administration of national forests as a com-

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mercial enterprise as anything could possibly be. It is quite true that the national forests involve problems that are similar to the problems of the national parks, and it is also true that in the administration of a national park the problems that are common to foresters are quite frequently present. However, the recreational features in the national forests are incidental, and the forest problems in the national park administration are incidental.

I had several discussions with Mr. Graves while in Washington, and together we worked up a scheme for cooperation in which the National Park Service was to give its advice predicated on its rather intensive experience in the problems of parks to the Forest Service in those occasional instances where they have recreational features. On the other hand, the National Park Service was to call upon the Forest Service for their administration in such problems as the sale of timber, for instance. I believe that this will eventually result in a simplification of the problems of each of the two departments. I do not believe I have any further comment to make upon this paper, Mr. Secretary.

MR. POTTER.

I am sure that Mr. Graves agrees with every word Mr. Daniels has stated. It is exactly his idea of the way the two great reservations should be handled—national forests and parks—and what Mr. Graves had in mind in the suggestion of working together was in those things where our interests are identical, such as in fire protection and in fighting the enemies of forests. I am sure we shall be able to cooperate.

ASSISTANT TO THE SECRETARY MATHER.

We are on the right road. Let us only keep going on that road. We will now have the opportunity of hearing from Mr. Robert B. Marshall, chief geographer of the United States Geological Survey. Now, Mr. Marshall is not a Californian. I want to state that right now. He is a Virginian. But in the course of surveying this country from one end to the other he also surveyed the ladies of the land. So when he came to survey California he happened to survey one of the fairest ladies of California. His fate was settled forthwith. He married the California lady. For that exhibition of excellent taste we consider him at least three-quarters Californian.

MR. R. B. MARSHALL.

Mr. Chairman, ladies, and gentlemen, as Mr. Mather has stated, I did find the most fascinating girl of my life here in California in the Yosemite National Park when I was making the topographic map of that

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wonderful and beautiful country in 1893, but I want to assure you that when I got to the point of asking her to share the rest of her life with me I was not much more embarrassed than I am right now. You have heard many interesting talks during the Third National Park Conference, and other far more able speakers than I are here. Mr. Mather knew when he was in Washington that this would be so, and I am therefore still wondering why he insisted on my attempting to address you on such an important subject. However, I was told yesterday that I would be next to the last speaker. That gave me consolation, for I know that we carry away with us our last impressions, and I was to precede Mrs. Sherman. I knew she would clear the atmosphere and that my simple words would be forgotten in remembrance of hers. But here I am at the end of the program, following Mrs. Sherman's all too short and most interesting talk.

Where shall I begin? To tell you of the 20 years of my life spent in God's glorious mountains, partly in our national parks, is a task too dear to my soul to rush through thoughtlessly. There are so many pleasant memories that come to mind of which I would like to tell you. I want each of you to know and to love our national playgrounds as I do, to feel their inspiration, to have worlds of friends in the old storm-seared peaks, the trees, the birds, the flowers, the streams, the animals, all beckoning, calling to you to come and live among them. And when you can rush away from the busy life and go to them they will greet you smiling and laughing, swaying all about in genuine glee as do children greeting their favorite playmates. Oh, it is glorious beyond description, and so satisfying. The wonders of the parks can never be told; you must go to them and absorb their influences.

For many years I have looked forward to the time when the national parks would be recognized by the people and the Nation, and I have been deeply discouraged until very recently, when Secretary Lane announced the appointment of Mr. Mather as his assistant, with the care of the national parks as his principal duty. My joy was beyond control. The Secretary believed in the parks and wanted to handle them himself, but he could not give the time, and so he selected the one best man in the whole country, Mr. Mather, and turned the work over to him. Thereafter, during the last four months, the light has been creeping in. I am sure that you gentlemen of the park service are feeling his masterful influence, and that each of you will go back to your station determined to make your park the best of all; that you will impart the inspiration to others; and that our guests in attendance will pass the word along until we shall have thousands and thousands of people thinking and talking national parks. The more the better. Get everyone you know to go to one park once; they will go again. Talk parks all the time.

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Briefly, this is my message to you after 20 years' acquaintance with the parks. Details and stories I will tell you another time.

But don't forget that we must all pull together. That is the object of this conference—to bring us together so that we may unite in the endeavor to get just as many of the people as we possibly can to visit the parks. One reason why we can not get legislation in Washington is that to the majority of the Members of Congress the parks are practically unknown. They are too far away. I believe everyone who heard the talk this morning of Congressman Church got the impression that there is one man who is going to be of great service to us in Washington. He is going to win a lot of people for us. The only way that we will ever get the money needed for the parks is to get Congress to come and see for itself; then we will get the money we need.

We heard Mr. Ford Harvey over at Berkeley the other day make some very telling statements. He recalled to my mind the first time that I went into the Yosemite and observed how the people were handled there. They were pulled and hauled from one place to another, from the camp to the hotel, then from the hotel to the camp. Mr. Harvey said that all concessions in any one park should be under one management and that for the protection of the people the Government should control that management. Some of you may not agree, but Mr. Harvey is right. That is the only way in which the people can enjoy the full benefits of the parks, the purpose for which they were created. We must have roads and trails planned from a scenic as well as from a get-there point of view. Many people want to get there fast, but more of them want to see as they go along. In the past one superintendent would build trails and say they were all right; then the next superintendent that came along would say they were no good and go some other way. In the Yosemite country you can start in any direction and see blazes everywhere. It used to be said that when the soldiers went into the parks they were afraid they would get lost when they turned off the roads onto the trails or across country, and so they blazed each tree they came to. I have gone through sections of the country where almost every tree was blazed. I did not blame the soldiers. They did not know the way and had no signs to guide them. Mr. Mather will tell you himself that he made a trip through those glorious mountains of the Kern River country and got lost because there were no signboards.

One thing we must not forget when we get down to working together, and that is we must have all the friends we can get, both in and out of the parks. I sympathize with the owner of private holdings in the parks. He is entitled to his rights and must have them.

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We can get what we want far more easily by persuasion than by fighting them.

I might go on for hours talking on this fascinating subject, but there are others who are to talk and I want to hear them.

ASSISTANT TO THE SECRETARY MATHER.

The thought has just occurred to me that perhaps Mr. Colby, secretary of the Sierra Club, might have a word or two to say. He has not been with us during this conference until to-day, but he has always been tremendously active in our line of work. He has taken a tremendous interest in our work, in our own Sierras in California, and in other parts of the country.

MR. WILLIAM E. COLBY.

Just give me a few moments to collect my thoughts. If you will defer for a few minutes, I would be very glad to say a few words.

ASSISTANT TO THE SECRETARY MATHER.

Very well, Mr. Colby. We would like to hear a word or two from Mr. Yard. He has been attending our conferences very faithfully all over the country, and I think perhaps he can give us, from his own standpoint, some of the impressions he has received as to whether this conference has been really worth while or not.

MR. ROBERT STERLING YARD.

Mr. Secretary and friends, I have no business to be here, as I think you all know, for the reason that I am a tenderfoot. I have no right to stand up here talking to mountaineers. Why, they showed me trained dogs at Albuquerque and told me that they were tame coyotes. They joshed me all the way across the continent. When it came to putting our names down in the visitors' book at the Sigma Chi House in Berkeley, where we have been living as a happy family since we have been on the coast, they insisted upon my writing down the name of my park. I entered my park as "Central Park, New York." I have been hammering the streets of New York for a good many years. It is a dozen years, at least, since I have cast a fly in any water inhabited by anything of a finny character.

Nevertheless I have got the stuff inside of me. When I am in the woods I feel closer to God than anywhere else. I think the hour of the deepest devotion and the highest spiritual uplift of all my life was an hour I spent all alone, solitary and silent, in a great beech

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woods in the northwestern corner of the Adirondacks. I have not qualified for the Rocky Mountains. But I know I shall qualify, because the qualification for the mountains, as I well know, lies inside of one, lies in the soul, and not in one's accomplishments. So it is that I, the treader of dusty city streets, boldly claim common kinship with you of the plains, the mountains, and the glaciers. For the love that is in your hearts is also in mine. There is the human appeal that is our common possession. We share the human point of view.

It is largely from the human point of view that I have looked at this conference that we have been having at Berkeley for the last two days. I have looked at its results, too, also from this human point of view. And I think there is one result that stands out with tremendous force, and I think it is the greatest thing of all. This conference, no matter what else it has produced, has produced this one unconquerable thing—it has brought about solidarity.

When we first got to Berkeley and sat down to breakfast in the morning, there were a lot of people there from the parks. Very different kinds of people, indeed, were those who sat down to our first breakfast; while it was a crowd gathered for a single purpose, it was not a crowd that spiritually was together. Every one of us was an individual; every one of us had his own purpose and had his own point of view; and each one sat there looking more or less askance at his neighbor. There was a new chief in the park service, too, and each man looked askance at the new chief. What manner of man was he? It was one of those nervous gatherings so full of strain and discomfort.

But when we broke up last night over there in Berkeley that same silent, nervous group had become as closely bound together in bonds of sympathy and common effort and affection as any crowd of 24 men I have ever seen. It was a great idea of Secretary Mather's getting us together in Berkeley in the atmosphere of that old college, his alma mater, which he loves so dearly.

Past conferences such as this have been held in the parks, under the inspiration of the trees themselves, but Mr. Mather's idea was to get us all together, living under one roof, and eating at one common board. He was fortunate in securing the clubhouse. It was an ideal spot to gather and eat together, talk together, and work these problems out from different points of view. The object was to have everybody express himself.

Now, as to the results of this conference, I do not believe anyone can speak at this time; and last of all I. But there are several important things besides solidarity which have been accomplished, and there are several things, I perceive, that inevitably are coming.

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One of the things that I see coming is this: That the dream of the motorist is coming true. The national parks are going to be opened to the motorist. The roads are to be connected up and highways put through across great sections of our national parks, and they are to be opened up for the common use of our people who drive any kind of a machine.

Another thing that I perceive is coming is the business development of these parks, and by a business development I mean the development of these parks as a system on a big, broad scale. The man who is in charge of the situation to-day is a business man. He is a man who has for many years met all kinds of situations, all sorts of emergencies, and met them promptly and successfully. Such a man is the only kind of a man who is fitted by years of experience to take hold of so big a problem and meet it successfully from a business point of view.

Now, the parks should not be dependent entirely upon the generosity of our National Congress. The parks are a great business proposition, which should pay every year a handsome revenue to be turned back into capital and spent upon themselves. I know that that is our dearest dream. I do not know of anyone who is better fitted to bring that about than the man who is at present in charge of this work.

There is another thing that I perceive is coming, and that is the real popularization of the national parks. When everyone working in the parks and in the Congress and throughout the Nation are all united together for one object, then, as in every great business undertaking, things will move with a vim and speed that will bring about the results that we have dreamed about for years, but which have never so far been even in sight. At last the people are coming into their mountain heritage.

When I was a boy an old man died whom everybody thought was the richest man in town. He left a widow and she went about town as if she enjoyed her former prosperity. She grew thinner and paler with the weeks and months, but she held her head high and no one suspected that she was starving to death—too proud to confess her need. She died, and the tragedy of her pride was bared. And then, too late, $10,000 was found stowed away in the chimney of that house of which even she knew nothing.

I recalled that the other day when I was thinking of the real magnitude and value of the wonderful mountain heritage of our people. To-day they are dying of starvation because they know nothing of it.

Before I started West I asked myself how many national parks there were, and I could think of two—Yosemite and the Yellowstone. Then, after some hesitation, I thought of Sequoia, and that is all that

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I could remember at the time. I considered myself thoroughly well informed. Coming out on the train I told this to some people I met, and one of them told me that among a large number of men of broad education and knowledge of the world of whom he had asked that question—I think he said he asked about 20—there were none that could name more than two. But I perceive that the time is coming when the people are going to know what they possess.

With a business administration, an administration that will make the parks make profits, these profits to develop the parks, charges inevitably will come down, because cheaper prices always result in bigger business. The greater the patronage the lower the costs, and the lower the costs the greater again the patronage. It is a problem in practical business—a familiar, practical problem. That time is coming, just as sure as the sun is going to rise to-morrow, and it is coming reasonably soon. It is beginning right now; and the reason it is coming is that the man is here to bring that about.

ASSISTANT TO THE SECRETARY MATHER.

I will say this, that there is a big opportunity for service, and service in the last analysis is the greatest thing one can offer.

Now, the Sierra Club has rendered us a tremendous lot of service for the parks, those particularly in California, and if Mr. Colby has now collected his thoughts, I think a word or two from him would be in order.

Mr. COLBY.

Mr. Secretary and friends, my mental processes the last few minutes have been rather complex, trying to listen to the outline of the talk by Mr. Yard and at the same time trying to outline something that would be worth while saying to you here; but I have talked so often on the mountains I feel that I should not be at a loss to say something on the subject.

When I heard that Mr. Mather had been appointed Assistant to the Secretary of the Interior I had a feeling come over me of more genuine pleasure than any information that has come to me in a long while. The reason for it was that I have known Mr. Mather so intimately and so well that I knew he was thoroughly in sympathy with everything that appertained to the welfare of our national parks. I knew that the star of the national-park idea was in the ascendency, and I wrote him to that effect. At the same time I wrote him that I felt that he was making a sacrifice in taking hold of this kind of work, because I knew of his business connections. He felt, on the other hand, that, instead of it being a sacrifice, it was one of the greatest opportunities that had ever come to him. He was

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glad of it, proud of it, and the only thing that worried him was the fear that he would not be able to live up to it.

I know Mr. Mather well enough to know that he will live up to it. I feel that his sympathies with the needs of our national parks is something that we have not had really in the administration of the work of our national parks. We must have some one at the head who is in sympathy with this work and has the time to devote to it. There are a great many who have been in the control of these matters in the past who have had the right spirit, and intended to do right, but somehow or other too many other things have demanded their attention. I feel especially glad, too, that Mr. Daniels is the assistant of Secretary Mather, because he, too, has the artistic idea. We are going to have a wonderful day in the national-park idea and the development of that idea.

My presence at this meeting to-day reminds me of the last annual park meeting that I attended. It was held in the Yosemite Valley, and it was presided over by a great friend of Mr. Mather's, Mr. Walter Fisher, of Chicago. I know that Mr. Fisher was in sympathy with everything that pertained to National Parks, but you could see that he was so rushed that he hardly had the time to come out here and attend the meeting. Many other things were driving him all the time.

You who were present at that meeting will remember John Muir. I think one of the most brilliant talks that were made there was made by him. True, it was one of his characteristic, rambling talks, but I remember very well one little story that he told. It will appeal to some of you. It is about an Englishman who started out to visit the Yosemite Valley. He started from the Raymond region, as you had to do in those days, and the mode of travel was by stage coach, and it took a very considerable time to make the trip; in fact, it took a couple of days to reach the valley. There were no roads at all at that time and they had to go on muleback over a trail. This Englishman rode down one gulch and one ravine after another, and you will remember the canyons through which the river runs by Wawona and Grouse Valley, and a number of others—pretty good sized canyons, each one of them. This Englishman had traveled across canyons until he was nearly worn out. Late in the evening they got to Inspiration Point, where they could look out over the Yosemite Valley. The Englishman was so tired that he did not realize where he was. He simply took one look at the valley and said to his companion: "My God! Have we got to cross that gulch, too?"

I think nowadays you will find a greater appreciation and a more sympathetic attitude toward the national-park problems. We find it so in the Sierra Club, of which I have been the secretary for a

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number of years, and it has kept its hand, as it were, on the pulse of the public in reference to national-park affairs. We believe we are creating a sentiment which is bringing about an indorsement of these projects more and more as the days go by.

This national-park idea is developing tremendously. We have had a good many fights on our hands. I remember the Yosemite concession fight, which was bitterly opposed here in the State by a great many. At the same time, the general public sentiment was in favor of it. There were many that were interested there that opposed it most bitterly, because it would destroy some interest of theirs there if it should be ceded, and they felt their welfare was in danger. When the Yosemite Valley went back to the Federal Government we were told all about what a difference it would make in the administration of that valley if it were administered away back in Washington instead of from Sacramento. We were told that we might just as well take the valley bodily out of the State and put it somewhere in the East in the vicinity of Washington. I am sure that all of those who are fair-minded and appreciate the situation will realize what a difference in the administration has taken place since the Federal Government has come under control. Of course there are a great many things to be criticized, but we can not do everything at once, but as far as the relative administrations of the valley are concerned there can be no question whatsoever.

Every once in a while a problem of that kind comes up, and the Sierra Club is always ready to help it along. We have now a problem which is very interesting to us, the building of a trail in honor of our late president. John Muir was the president of the Sierra Club during all the years of its existence, from 1892 up to the time of his death, in 1914. We felt that the State in which he lived and the glories of which he wrote so much about should do something to honor his memory, and for that reason we had a trail bill introduced into the State legislature with the idea of appropriating a sum of money which will help to build a trail to connect Yosemite Valley with the Mount Whitney region, a region in which he spent so much of his life and which was so dear to him. Those who have expressed themselves on the subject have felt that no more appropriate memorial could have been thought of than a trail of this character, because if John Muir's spirit dwells anywhere it dwells in those mountains where this trail will lead, from the Yosemite Valley down to the heights of Mount Whitney. I remember a short time ago of reading the address of President Eliot on his return from a trip around the world to his students at Harvard. One of the thoughts he expressed was to devote yourself to those sports that will be the most lasting and which will give you the greatest pleasure for the greatest period of your lifetime. He named a great many which

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brought pleasure, but Dr. Eliot could not have been familiar with mountain climbing as a pleasure, because if he had he would have mentioned that also, as it so vitally typifies and expresses the very idea he was talking about.

Those of you who have been up in the mountains will realize the benefit that is derived from it in your memory. If there is anything in the world that can bring an individual more genuine pleasure that will last a longer time, I do not know what it is.

Finally, I am reminded of a letter that I received this morning from a member of the club who has been very active in spreading the gospel of the mountains and our national parks—Mr. Gleason, of Boston. Some of you will be interested to know that he is going to lecture here this summer. The Southern Pacific Co. has asked him to come here and give some of his wonderfully illustrated lectures. They will be given right here in this theater. I received a letter from him this morning. In one of his recent lectures he spoke of the Sierras of California, and he used as his text one of John Muir's: "Going to the mountains is going home." John Muir, above all others, expressed that in the most beautiful language in the wonderful books that he has written. The idea that going to the mountains is really going home is a true one, because we all know that there we get the greatest amount of pleasure, quiet, and rest, away from the everyday cares of the business life. That is what our national parks are for—to get us away from the business affairs that press upon us. Go out into the mountains and see these wonderful things that appealed to John Muir, and you will see that those things are really worth while, and you will come back to your business with a purer and freer thought than you had before. I thank you for your kindness.

ASSISTANT TO THE SECRETARY MATHER.

I am now going to turn the meeting over to Mr. Daniels.

MR. DANIELS.

Down in Los Angeles the Automobile Club of Los Angeles and Southern California is working very hard on a plan to build a road from Mariposa, or, rather, from Merced to El Portal. That means, if such a road is ever built, that Yosemite Valley immediately becomes an all-year-around resort. It is now impossible to get into the valley with an automobile except a few months in the year, due to the extreme elevations that have to be climbed before reaching the rim of the valley. I do not know of anything that could be more interesting to the concessioners on the floor of the valley and all

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others who are interested in the Yosemite Valley than the eventual accomplishment of this plan. Before asking any of the concessioners to speak, or any of the supervisors, I would like to see if we can not have the unanimous vote of this conference indorsing the plan of building the road from Merced to El Portal up the Merced River. If there is anyone here who does not feel that he will be justified in indorsing such a plan, I should like to hear from him. Since there are none, I shall communicate with them that we have unanimously indorsed their plan.

I am now going to ask Mr. Martin, secretary of the Intercity Club of Tacoma and Seattle, to please tell us something of Mount Rainier National Park and its problems.

MR. T. H. MARTIN.

Mr. Chairman, Mount Rainier National Park has many problems; in fact, too many to review here this afternoon. I am much gratified however, to have an opportunity to bring to your attention, and to the attention of the park officials here, some of the things that relate very closely to the interests of the entire Northwest.

Mount Rainier National Park, although counted among the older parks, is probably less known than any of them. Three hundred square miles and 45 miles of that is a solid ice field. You have, no doubt, heard comment upon the beauties of that park, the beauties of our flowers and our magnificent forests, so I will not take up the time here to discuss those beautiful features, because, let me frankly say at the outset, that my interest in national parks and in that particular national park is purely commercial. I have no other interest. That park is not known to-day as it should be nor are its many attractions, and, Mr. Chairman, that is largely our own fault. I say our fault, but it is because of a long-continued dispute over the name of that most majestic mountain. It is close to two aspiring municipalities, and because of a desire of one to gain an advantage over the other, because of that great overshadowing peak, there has arisen a great controversy and jealousy. I have heard of a man in my home country that came down from the North and went among our people and held some discussion, and told us that the war was over and that we should forget it and take up the problems of the day. My dear sir, people who have lived through a fight that has been a fight do not forget it very quickly. But this is another generation. We have passed now to another generation that appreciates the beauty of that great mountain, a generation that believes that these bitter fights should be forgotten, but there lingers yet in the hearts of the old settlers an intense feeling, and, if I may say it, it is a real problem; and if I might take just a minute or two to

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tell you what the community is doing to get Government support, public support, for the development that we seek in Mount Rainier National Park.

Three years ago this bitterness was very intense. A Congressman could not appear before a committee in Washington and advocate anything without feeling that he ran in danger of stepping upon the corns of some one from Seattle or Tacoma. There the situation rested. Through the invitation of a commercial organization, the commercial organization of Seattle and the commercial organization of Tacoma appointed delegates, and they met in conference to consider this vital matter of the name, because we knew it was the real beginning in the consideration of national park development matters. When we came together we did not sit intermingled. We sat, the Seattle men on one side and the Tacoma people on the other side, and a very solemn meeting it was—all marvelously courteous. When the meeting was finished the chairman asked for Seattle's suggestion, and a gentleman arose and read off the first name and then glanced around to see where the brick was coming from. No objection was made, and he read off all of them, and, when he had finished, Tacoma was asked to express its views; then Mr. Denman, who had been appointed as our spokesman, arose and said that he could not express Tacoma's views better than to indorse every word that Mr. Curtis had said. Then tumbled immediately all of the obstacles that had been surrounding us for years, and the men who were there came to the front for us. No longer was there any question of getting an appropriation, and we have to-day an appropriation for the development of Mount Rainier National Park.

There are some problems that we have common to all parks. I will mention only one or two of them, but I wanted in this way to let this conference know that we have made a good start. We have not quite yet got to the point where we can take up and discuss what the name shall be, but we are getting so that we can discuss it. It must be settled soon, because we are losing thousands and thousands of dollars in publicity; because the railroads can not touch the question as yet. They are still in great danger; but we have started on the way, and we bespeak your help and we bespeak the help of the department at Washington, and we bespeak the confidence and help of all of these park officials, as they meet strangers who ask questions. Tell them that the community about Mount Rainier National Park is making headway in one of its great problems, and that some day soon it will be adjusted.

Now, as to some of these park problems. We suffer along with some of the other parks in this matter of hotels. There is no coordination of any concessions in our park. We have some very definite plans, but as yet they have not been carried into execution.

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We have some great problems in the way of road construction, because in all these years there has been constructed in Mount Rainier National Park only something like 20 miles of road. Since that time we have done nothing but repair and maintain those roads, and just since our last appropriation we have been able to build other roads, but the dream of the committee is to have a highway that shall encircle the entire mountain. We know we can get that in one way only. Our present approach leads into the south side of the mountain, at what is called Paradise Valley. There is another approach being built by the State coming from North Yakima, going into the east side. That will develop some of the beautiful natural parks on the east side. Now, one of the things we are working harder for than all else, because it seems to be the most direct approach, is from the northwest side of the mountain, up the Carbon River Valley. That will open up other splendid national parks, and will go up by that wonderful wall over which avalanches fall constantly. There you will find one of the most magnificent lakes and one of the most inspiring spots you have ever seen. That will be by the east approach.

One county has spent a quarter of a million dollars in making an approach on the south side. The State has expended now fully $200,000 in making approaches, and has authorized an appropriation of a hundred and eighty thousand dollars more to be expended on an approach on the north side and an approach on the east side. But here is the difficulty: Our State laws provide that those approaches shall be from the east side to connect with the Government system inside of the park when built at the most desirable location. Now, we know nothing of where those connections are going to be, and when we go before our legislature, and when we take up the discussion of an appropriation, and are asked the question regarding the definite location of these approaches, why, we are met with the difficulty of not knowing where the Government roads will be inside of the park and we do not know what is going to be done in that regard.

Four engineers discussed that question and every one of them differed in their opinion about where those approaches should be. We want to bring about a cooperation between the State and the Government engineers regarding where those roads are to be located inside of the park, so that we may plan ours outside of the park. Our approaches on the north side and our approaches on the east side are largely imaginary, because we do not know where to put them.

We have in mind a great highway crossing from Puget Sound to the southern border of the Mount Rainier National Park, down into the great fruit valleys, and it will be an inspiration that one will never forget, when, after a comfortable breakfast, he can get into

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an automobile and take that morning drive through those heights, always with this magnificent dome in sight, and have his dinner in the great fruit valleys of the Yakima. What an inspiration!

MR. DANIELS.

Yesterday Mr. Charles S. Fee, of the Southern Pacific Co., made one of the most beautiful speeches I have ever listened to. I think he spoke kindly of me, and, since that reflects credit on the railroads in so far as it goes, I was wondering if it would not be quite in order to hear from some other railroad official who is interested in some other park. I see Mr. Charlton is with us. Perhaps he would be willing to say something about travel to the Yellowstone National Park.

MR. CHARLTON.

Mr. Chairman, ladies, and gentlemen, the Northern Pacific Road I represent is merely interested in Yellowstone Park, but we claim for the Northern Pacific Road that you can see more national parks by using our service than perhaps any other road. We claim all of the national parks are on the line of the Northern Pacific. You start with Yellowstone, then you go to Glacier Park and Mount Rainier, then you come down to Mr. Steel's park, Crater Lake, and then the Yosemite. We think they are all on the line of the Northern Pacific. For that reason our interest in national parks is very great.

I listened to what Mr. Martin had to say in connection with Mount Rainier Park with a great deal of pleasure. This past summer we had quite a delegation in Mount Rainier Park. They entered from the north side, and what Mr. Martin says in regard to Mount Rainier is beyond dispute. You have got to circle that entire park, or the entire mountain, and give an opportunity to reach it from almost any direction before you are going to make a success of it.

My own opinion in regard to Yellowstone Park is this, and I speak from an experience of 31 years. I first visited Yellowstone Park 31 years ago this summer. That was the year that the Mammoth Hot Springs Hotel was completed. It was then in the hands of the laboring men who built the hotel. We were not allowed to put foot on the veranda or look into the hotel, for the reason that they had not yet been paid for the work they had done there. The Northern Pacific at that time dug up the money and paid for the labor before the hotel could be opened. From that day to this I have been in touch with travel to the Yellowstone Park and have come in constant contact with the tourists making the park. They started out 31 years

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ago with the idea of inducing tourists to go through Yellowstone Park in some five and a half or six days. A tourist should go through Yellowstone Park in from 30 to 60 days. You can not rush through it. The greatest pleasure you can have in the park is by camping out. You have got to make it a playground. It is no place to rush through as though you were going to a circus and wanted to get back again the same day.

The transportation in Yellowstone Park is excellent. The roads are good and the hotel accommodations are fine. What we really need is a systematic development of the park, and I believe that we are getting closer to it from what I have heard at this meeting here the past three days. It certainly seems now that all of our national parks are going to have some chance to be opened up the way they should be, and the people induced to go into them and make it their outing place for the summer; not go in and right out, but spend the entire summer there, as you really should do. It requires considerable time to properly see the scenic beauties of Yellowstone Park.

With regard to the question of transportation, whether automobile or stage, I am not prepared to say, as far as Yellowstone Park is concerned. It looks to me as though there would have to be a great deal of work done on the roads if you are going to introduce the automobile. I do not know whether the automobile is a good thing or not. Personally I will regret to see the day when the stages pass out. To my mind, they are one of the features of travel in Yellowstone Park.

ASSISTANT TO THE SECRETARY MATHER.

Could not we possibly have a word from Col. Brett about the scenic beauties of Yellowstone Park, which the average tourist does not see at all?

COL. BRETT.

Down in the southwest corner last year we built a trail leading right into the heart of the moose country. Last year we completed a trail over the mountain, and in traveling over that trail I went through three bands of elk, each one of which I should say contained at least 1,500. We have also completed a trail down the west boundary through the Braley country, and parts of that are very similar to the mountains of Maine and Vermont. You would almost believe you were in Maine or Vermont. We have trails also into the Hell Roaring Mountains and the mountains on the north and east boundaries, in which the scenery is equal to anything you will find in the Sierra Nevadas, in my opinion. The engineer and myself were struck with the view for several miles on each side of the road of the sheer walls, so much like the walls of the Yosemite Valley.

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We remarked on them several times. In two years I expect that we will have complete in Yellowstone Park a trail system that will make every part of that park accessible to the tourist either on horseback or afoot.

MR. DANIELS.

I regret Mr. Charlton's comments upon the tourists not staying in the park for a sufficient length of time. I do not think it is entirely due to the tourists. It is very largely due to the concessioners that are in the park. I think the problem is with the concessioner. He should have a bureau of information right in the hotel for the benefit of tourists, so that they may find out what there is to see there by taking a horseback ride of two or three days back into the mountains. All necessary equipment should be there available to the tourist. Our time is getting a little short now, but inasmuch as we have heard nothing about Crater Lake or its problems it might be well if we had a word or two from Mr. Steel, superintendent of Crater Lake Park.

MR. WILL G. STEEL.

I will state that Crater Lake is about 50 miles north of the California line, directly on a ridge of the Cascade Mountains. Originally it was a mountain 15,000 feet high. At one time it telescoped slightly above the elevation of 8,000 feet, probably at the point which was known as the extreme timber line, and about 17 cubic miles of matter disappeared.

The crater is about 4,000 feet deep, half full of water, so that precipitous walls surround it, the lowest point being about 500 feet high. It was my privilege just 30 years ago this summer to stand upon the rim of that lake in company with Prof. Le Conte; that is one of the brightest recollections of my life, when I stood there with him and consulted with him as to what should be done with that great wonder. The movement to create a national park there was started in the presence of Prof. Le Conte. At the same time I started a petition to President Cleveland to withdraw 10 townships from entry so that settlers could not rush in and take possession of the rim of the lake. Then it took 17 years of hard work and several thousand dollars before that park was created. It was so created on May 22, 1902. Then began the question of its development. Up to the rim of the lake it was almost impossible to drive a wagon. Soon after the park was created $7,000 was appropriated for a road to the rim of the lake, and the very steep road was reduced to what we then thought was a very good road, a 33 per cent maximum grade.

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I felt that we had to have roads and we had to have hotels, so I started a movement by which a corporation was created so that we could get money enough to start a hotel, which will be open this year for the first time. Then the question came up about roads. Finally we got an appropriation of $10,000 and made a sketch of a system of roads which would lead entirely around the lake for 35 miles. That survey was made and subsequently we built roads. We have in the park at this time about 40 miles of road. This road is being extended this year for the first time, and a large portion of the park to the east and south will be open to automobiles to a point on the east at an elevation of about 8,000 feet. That will be directly above the lake about 1,900 feet. In my opinion that will be a most beautiful road.

Development up to this time has been slow. Underbrush has to be cleared away, fallen trees and other débris removed, and it is a great undertaking and can not be done rapidly. It is being done as fast as possible. My idea with regard to these roads is to scatter the native flowers all along them just as though they were put there by nature, so that the whole park will blossom with the beautiful flowers of which we have a great many there. We are working at this time to get in a telephone system, which is absolutely necessary. We are working also to get in a water system, which is necessary. We have got to put in sewers, which are also necessary. We have got to have some support from the railroads, and as soon as we complete our roads we will be about 15 miles from the railroad track.

The people in the surrounding country take an earnest pride in the work we are doing there. Jackson County during the past year has spent $500,000 on a beautiful highway on the north side. Many of the other counties there have also spent large sums of money. If Jackson County can appropriate the money it receives from land sold in the forest reserves, it will amount to about $1,315,000. We hope that law will be passed. If it goes through, the people of Jackson County are willing to appropriate all of that money, and we will be able to do a great deal with it.

MR. DANIELS.

I think Mr. Steel overlooked one feature in regard to Crater Lake National Park that would appeal to everyone who goes there. Emerson Hough, who passed through many of the parks last fall and wrote a series of articles on them, had something to say about the fish in Crater Lake. He is a man who carries a fishing outfit that he assures me cost not less than $250. I never in my life met a man who is so ardently devoted to the art of angling. It is through Mr. Hough's efforts that we are largely indebted for some of our

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national parks and for the creation of many of our national monuments and for the creation of most of our wild-game preserves. Mr. Hough described the fishing in Crater Lake National Park to me in such glowing terms that I thought he was boastful. I fished in the lake myself a month or so later. Around the edge of the lake there is no foliage to entangle your hook and line, and it is the ideal place for the amateur fisherman. When I was there the lake was so clear that you could see to a depth of 40 feet. The fish are greatly magnified through the water, and one is inclined to agree with the farmer who stood before the hippopotamus for a few minutes and then said: "Hell, there ain't no such animal." The first fish I caught I saw catch the fly. I saw every motion of his body until I finally landed him on the bank, which I only did with the aid of one of the concessioners in the park. I do not know of any other place in the world where an amateur fisherman can swing his fly in any direction without danger of catching it on some twig, and when he hooks his fish he can watch every motion of the fish as he fights for freedom. I agree with Mr. Hough in all that he has said about fishing in Crater Lake.

I would like to make an announcement. You will remember not long ago of reading that Mr. Miller, president of the Burlington Route, died of appendicitis in Glacier National Park. There is a possibility that his life might have been saved had we had a good skillful surgeon in the park. In every park where people indulge in mountain climbing there are frequent accidents, some of them more or less serious. In all of our western parks such accidents as sprained ankles and broken limbs occur frequently, and many people are affected by poison oak. In our parks that have been under military control we have had adequate medical service. During certain seasons of the year there are as many as 5,000 people in Yosemite Valley at one time. There is no provision there for medical attendance at all; but we have at last secured the services of a man who has enjoyed for 25 years in the city of San Francisco a most enviable reputation as a surgeon and doctor. We have secured his services. He has volunteered to go to the valley, because he is a mountain lover of the first water, and will take with him an associate surgeon and doctor and establish in the valley a hospital, and also maintain there a trained nurse. The hospital will be equipped with all surgical instruments that are necessary, and in addition there will be maintained and operated a Red Cross automobile. This is Dr. Joseph S. Brooks, and he will be in the valley during the summer time in company with his assistant surgeon. During the entire time either one or the other of them will be there. Under the present arrangements with Dr. Brooks there will be a competent physician and surgeon in attendance at the hospital all the time, as well as a

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trained nurse and an emergency automobile. The hospital will be open 24 hours a day. There will be an efficient and capable doctor on the job 24 hours a day. I hope that within the next few years we will be able to find men who have sufficient idealism to do the same thing in the other parks.

We will now hear from the concessioners. It is Mr. Mather's wish that we continue with that where we left off yesterday afternoon. We will devote the remainder of the afternoon now to discussions by concessioners. I should be very glad to hear from any concessioner present who has anything to say regarding his problems to the department.

[A pause.]

I am happy to say to you, Mr. Mather, that none of the concessioners has any complaint to make. Evidently they are all satisfied.

ASSISTANT TO THE SECRETARY MATHER.

In declaring the third conference of superintendents and supervisors adjourned, I want to thank the president of the University of California, the public-spirited citizens of this and other States, and the park concessioners who have attended these meetings and participated in our discussions. Their deep and sympathetic interest in the national parks and their problems has been a source of gratification and encouragement to me. But I want particularly to extend my heartiest thanks to the park superintendents and supervisors. This has been primarily their conference, and they have made the most of it, both in the public meetings and in the many discussions that were held morning, noon, and evening over there in the fraternity house in Berkeley, where we have all been living together. They will go back to their parks now with the best wishes of all of us for success in the administration of our great national playgrounds.

The conference is adjourned sine die.



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DEPARTMENT OF THE INTERIOR
FRANKLIN K. LANE, Secretary
THE NATIONAL PARK SERVICE
STEPHEN T. MATHER, Director

PROCEEDINGS OF THE NATIONAL PARKS CONFERENCE

HELD IN THE AUDITORIUM OF THE
NEW NATIONAL MUSEUM

Washington, D. C., January 2, 3, 4, 5, and 6, 1917

WASHINGTON
GOVERNMENT PRINTING OFFICE
1917

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DEPARTMENT OF THE INTERIOR
FRANKLIN K. LANE, Secretary

THE NATIONAL PARK SERVICE

NATIONAL PARKS CONFERENCE

IN THE AUDITORIUM OF
THE NEW NATIONAL MUSEUM
WASHINGTON, D. C.

January 2, 3, 4, 5, and 6, 1917

PROGRAM

Tuesday, January Second

Stephen T. Mather, Assistant to the Secretary of the Interior, Presiding

MORNING SESSION, 9:30

Our National Parks

Franklin K. Lane, Secretary of the Interior
Senator Reed Smoot of Utah
Representative Scott Ferris of Oklahoma
Representative Irvine L. Lenroot of Wisconsin
Carl Vrooman, Assistant Secretary of Agriculture
Enos Mills

AFTERNOON SESSION, 2:15

Development of the National Parks

J. B. Harkin, Commissioner of Dominion Parks, Department of the Interior, Canada
Canadian National Parks

Mrs. John Dickinson Sherman, Conservation Chairman, General Federation of Women's Clubs
Women's Part in National Parks Development

Huston Thompson, Jr., Assistant Attorney General
The Public and the National Parks

J. Horace McFarland, President American Civic Association
Economic Destiny of the National Parks

Professor Lowell Jackson Thompson, Princeton University
Typical Development at Mount Rainier

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EVENING SESSION, 8:15

Opening of the First Annual Exhibition of National Parks Paintings in the Galleries of the National Museum

Wednesday, January Third

Educational Day

Robert Sterling Yard, Presiding

MORNING SESSION, 9:30

George D. Pratt, Conservation Commissioner of the State of New York
Organized Out-of-doors

Arthur E. Bestor, President Chautauqua Institution
Organized Popular Education

Professor E. M. Lehnerts of the University of Minnesota
University Classes in the National Parks.

Philander P. Claxton, U. S. Commissioner of Education
Public Schools and the National Parks

AFTERNOON SESSION, 2:15

Dr. Charles D. Walcott, Secretary Smithsonian Institution
National Parks as a Scientific Asset

Herbert Quick, Member of Federal Farm Loan Board
The Author and the National Parks

Gilbert H. Grosvenor, Editor National Geographic Magazine
Teaching by Picture

Rev. Charles W. Gilkey of Chicago
Spiritual Uplift of Scenery in National Parks and the Grand Canyon

William H. Holmes, Head Curator, National Gallery of Art
The Painter and the National Parks

Fred H. Kiser
The Photographer and the National Parks

EVENING SESSION 8:15

Illustrated Lecture by Herbert W. Gleason

Thursday, January Fourth

MORNING SESSION, 9:30

Recreational Use of the National Parks

Enos Mills, Presiding

W. A. Welch, Chief Engineer Palisades Inter-state Park
The Making of a Recreational Park

J. W. Barber
Winter Sports in the National Parks

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Mrs. Ada F. Chalmers
Family Hiking in the National Parks

Dr. Hugh M. Smith, Commissioner of Fisheries
Fish and Fishing in the National Parks

Marion Randall Parsons, Sierra Club
Living in the National Parks

AFTERNOON SESSION, 2:15

Wild Animal Life in the National Parks

John B. Burnham, President American Game Protective and Propagation Society, Presiding

Charles Sheldon, Chairman Game Preservation Committee, Boone and Crockett Club
Mount McKinley

Henry S. Graves, Forester and Chief, Forest Service
National Forests and National Parks in Wild Life Conservation

E. W. Nelson, Chief of Bureau of Biological Survey
The Yellowstone Elk Herds

E. Lester Jones, Superintendent Coast and Geodetic Survey
Future of the Antelope

T. S. Palmer, Assistant in Charge of Game Preservation, Bureau of Biological Survey
National Monuments as Wild Animal Sanctuaries

EVENING SESSION, 8:15

Illustrated Lecture on Mount McKinley by Stephen R. Capps, Geologist, U. S. Geological Survey

Friday, January Fifth

MORNING SESSION, 9:30

Stephen T. Mather, Assistant to the Secretary of the Interior, Presiding

THE QUESTION BOX

AFTERNOON SESSION 2:15

Motor travel to the Parks

Dr. H. M. Rowe, President American Automobile Association, Presiding

George C. Diehl, Chairman A. A. A. Good Roads Board
Touring, a By-Product of Roads Building; or Roads Building, a By-Product of Touring

Orville Wright
Air Routes to the National Parks

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A. W. Seaman, Long Island Automobile Club
Transcontinental Touring Equipment

Frank A. Davis, Secretary-Treasurer National Old Road Trails
Sign Posting the Highways and Byways

David G. Joyce, Chairman A. A. A. Touring Board
Multiplication of American Road Travel

EVENING SESSION, 8:15

Illustrated Lectures by H. H. Hays and Judge Will G. Steel

Saturday, January Sixth

Stephen T. Mather, Assistant to the Secretary of the Interior, Presiding

MORNING SESSION, 9:30
The Grand Canyon

Representative Simeon D. Fess of Ohio
Colossus of Canyons

Dr. George Otis Smith, Director U. S. Geological Survey
The Survey's Contribution to the National Park Movement

Ford Harvey
The Public and the Grand Canyon

Charles Sheldon, Chairman Game Preservation Committee Boone and Crockett Club
Glories of the Cataract Canyon

L. Claude Way
Practical Problems

AFTERNOON SESSION, 2:15
The Greater Sequoia

Representative Frederick H. Gillett of Massachusetts
The Problem of the Greater Sequoia

Enos Mills
Perhaps Our Greatest National Park

Robert Sterling Yard
The Tehipite Valley and Kings Canyon

Emerson Hough
The Top of America—Mount Whitney

EVENING SESSION, 8:15

Bear Stories by Enos Mills

Illustrated Lecture by Dr. Harry O. Reik

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DEPARTMENT OF THE INTERIOR
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PROCEEDINGS OF THE NATIONAL PARKS CONFERENCE

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Apr. 5, 1923
LANDSCAPE ARCHITECTURE
HARVARD UNIVERSITY

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PROCEEDINGS OF THE FOURTH NATIONAL PARKS CONFERENCE.

INTRODUCTION.

The Fourth National Parks Conference was held in the auditorium of the National Museum, Washington, D. C., on January 2, 3, 4, 5, and 6, 1917. In connection with it the First Exhibition of National Parks Paintings was opened in the national gallery on the second floor of the building, and various exhibits were on view in rooms on both sides of the entrance lobby.

Because of the extensive advance in the movement to develop our national parks since the third conference at Berkeley, Cal., in March, 1915, the present conference was greatly broadened in scope and purpose. The creation by Congress in August, 1916, of the National Parks Service to administer the national parks as a coordinated system made it desirable to consider the whole subject afresh from the broadest possible viewpoint and to summon in consultation the best thinking and experience in the country. It was hoped that the conference would result in a body of expert discussion and advice which would prove helpful in the formulation of the broader policies necessary to realize the greater future of our national parks which Congress had in view in the creation of the service.

To this end Members of Congress who have specialized on national parks, representatives of cooperating clubs and associations, educators of national outlook, specialists in forestry, natural science, and wild-life conservation, and men and women in professional and business life interested in the recreational, artistic, inspirational, economic, and other phases of the question were invited to join in conference with officials of the department and the new service, the supervisors of the parks, and the concessioners.

The program was designed to cover as many outlooks as possible, with specialist speakers. A reception for the promotion of acquaintance was held in the national gallery Tuesday evening on the occasion of the opening of the exhibition of paintings. The evenings were

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devoted to popular lectures illustrated with lantern slides and motion pictures of national parks subjects.

The conference was successful in all respects. It became increasingly enthusiastic and developed a spirit of cooperation which promises well for the future. An important element in its success was the hearty cooperation and invaluable assistance of the secretary and officials of the Smithsonian Institution.

This report of proceedings contains a wealth of creative suggestion.

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PROGRAM.

TUESDAY, JANUARY 2.

Stephen T. Mather, Assistant to the Secretary of the Interior, presiding.

MORNING SESSION, 9:30.

OUR NATIONAL PARKS.

Franklin K. Lane, Secretary of the Interior.
Senator Reed Smoot of Utah.
Representative Scott Ferris of Oklahoma.
Representative Irvine L. Lenroot of Wisconsin.
Representative William Kent of California.
Carl Vrooman, Assistant Secretary of Agriculture.

AFTERNOON SESSION, 2.15.

DEVELOPMENT OF THE NATIONAL PARKS.

Enos Mills: "The national parks for all the people."

Mrs. John Dickinson Sherman, conservation chairman, General Federation of Women's Clubs: "Women's part in national parks development."

Huston Thompson, jr., Assistant Attorney General: "The public and the national parks."

Prof. Lowell Jackson Thomas, Princeton University: "Typical development at Mount Rainier."

EVENING SESSION, 8.15.

Opening of the first annual exhibition of National Parks paintings in the galleries of the National Museum.

WEDNESDAY, JANUARY 3.

Robert Sterling Yard, presiding:

EDUCATIONAL DAY.

MORNING SESSION, 9.30.

George D. Pratt, conservation commissioner of the State of New York: "Organized out of doors."

Prof. E. M. Lehnerts, of the University of Minnesota: "University classes in the national parks."

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Philander P. Claxton, United States Commissioner of Education: "Public schools and the national parks."

J. Horace McFarland, president American Civic Association: "Economic destiny of the national parks."

AFTERNOON SESSION, 2.15.

Dr. Charles D. Walcott, secretary Smithsonian Institution: "National parks as a scientific asset."

Arthur E. Bestor, president Chautauqua Institution: "Organized popular education."

Herbert Quick, member of Federal Farm Loan Board: "The author and the national parks."

Gilbert H. Grosvenor, editor National Georgraphic Magazine: "Teaching by picture."

William H. Holmes, head curator, National Gallery of Art: "The painter and the national parks."

Rev. Charles W. Gilkey, of Chicago: "Spiritual uplift of scenery in national parks and the Grand Canyon."

EVENING SESSION, 8.15.

Illustrated lecture by Herbert W. Gleason.

THURSDAY, JANUARY 4.

MORNING SESSION, 9.30.

Enos Mills, presiding:

RECREATIONAL USE OF THE NATIONAL PARKS.

W. A. Welch, chief engineer Palisades Inter-state Park: "The making of a recreational park."

J. W. Barber: "Winter sports in the national parks."

Mrs. Ada F. Chalmers: "Family hiking in the national parks."

Dr. Hugh M. Smith, Commissioner of Fisheries: "Fish and fishing in the national parks."

Marion Randall Parsons, Sierra Club: "Living in the national parks."

AFTERNOON SESSION, 2.15..

John B. Burnham, president American Game Protective and Propagation Society, presiding:

WILD ANIMAL LIFE IN THE NATIONAL PARKS.

Henry S. Graves, forester and chief, Forest Service: "National forests and national parks in wild life conservation."

Charles Sheldon, chairman game preservation committee, Boone and Crockett Club: "Mount McKinley."

E. W. Nelson, Chief of Bureau of Biological Survey: "The Yellowstone and the game supply."

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E. Lester Jones, Superintendent Coast and Geodetic Survey: "Future of the antelope."

T. S. Palmer, assistant in charge of game preservation, Bureau of Biological Survey: "National monuments as wild animal sanctuaries."

Belmore Brown, Camp Fire Club: "Climbing Mount McKinley."

EVENING SESSION, 8.15.

Illustrated Lecture on Mount McKinley by Stephen R. Capps, Geologist, United States Geological Survey.

FRIDAY, JANUARY 5.

MORNING SESSION, 9.30.

Stephen T. Mather, Assistant to the Secretary of the Interior, Presiding.

THE QUESTION BOX.

J. B. Harkin, commissioner of Dominion parks, Department of the Interior, Canada: "Canadian national parks."

AFTERNOON SESSION, 2.15.

Dr. H. M. Rowe, president American Automobile Association, presiding:

MOTOR TRAVEL TO THE PARKS.

George C. Diehl, chairman A. A. A. Good Roads Board: "Touring, a by-product of roads building; or roads building, a by-product of touring."

Cortlandt Field Bishop: "American versus European scenic assets."

Orville Wright: "Air routes to the national parks."

A. W. Seaman, Long Island Automobile Club: "Transcontinental touring equipment."

Frank A. Davis, secretary-treasurer National Old Road Trails: "Sign posting the highways and byways."

David G. Joyce, chairman A. A. A. Touring Board.: "Multiplication of American road travel."

EVENING SESSION, 8.15.

Illustrated lectures by H. H. Hays and Judge Will G. Steel.

SATURDAY, JANUARY 6.

Stephen T. Mather, Assistant to the Secretary of the Interior, presiding.

MORNING SESSION, 9.30.

THE GRAND CANYON.

Representative Simeon D. Fess, of Ohio: "Colossus of canyons."

Dr. George Otis Smith, Director U. S. Geological Survey: "The Survey's contribution to the national park movement."

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Ford Harvey: "The public and the Grand Canyon."

Charles Sheldon, chairman game preservation committee Boone and Crockett Club: "Glories of the Cataract Canyon."

L. Claude Way: "Practical problems."

AFTERNOON SESSION, 2.15.

THE GREATER SEQUOIA.

Representative Frederick H. Gillett of Massachusetts: "The problem of the Greater Sequoia."

E. O. McCormick, vice president Southern Pacific Co.: "National parks and the railroads."

Enos Mills: "Perhaps our greatest national park."

Emerson Hough: "The top of America—Mount Whitney."

Robert Sterling Yard: "The Tehipite Valley and Kings Canyon."

EVENING SESSION, 8.15.

Bear stories by Enos Mills.

Illustrated lecture by Dr. Harry O. Reik.

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FIRST EXHIBITION
OF
NATIONAL PARKS PAINTINGS

CATALOGUE OF A LOAN COLLECTION OF 45 PAINTINGS ILLUSTRATING SCENES MAINLY IN THE NATIONAL PARKS AND MONUMENTS OF THE UNITED STATES, ASSEMBLED BY THE DEPARTMENT OF THE INTERIOR IN THE NATIONAL GALLERY OF ART IN CONNECTION WITH THE MEETING OF THE NATIONAL PARKS CONFERENCE HELD IN THE NATIONAL MUSEUM, JANUARY 2–6, 1917.

This exhibition was opened with a special view on the evening of January 2. On January 16 one painting was withdrawn, and on January 30 fourteen paintings were returned to the owners. The remaining thirty will continue on exhibition in the main room of the gallery, new building of the National Museum, until after March 4. Those withdrawn are indicated by an asterisk.

DEAN BABCOCK:

*The Twin Sisters.
*A Glimpse of the Range.
The Explorers.
*The Crags.
Scenes in the Rocky Mountain National Park. (Lent by the artist.)

ALBERT BIERSTADT:

Mount Whitney.
The Sequoia National Park. (Lent by the Minneapolis Institute of Arts.)
Whyte's Lake, Estes Park, Colo.
The Rocky Mountain National Park. (Lent by the Art Association of Indianapolis, John Herron Art Institute.)

HOWARD RUSSELL BUTLER:

*Sunrise near Mesa Verde.
The Mesa Verde National Park.
Sunshine and Shadow in The Grand Canyon, Ariz.
Grand Canyon National Monument. (Lent by the artist.)

ELLIOTT DAINGERFIELD:

Trees on the Rim of the Grand Canyon, Arizona.
From Rim to Rim of the Grand Canyon, Arizona.
(Lent by the artist.)

W. HERBERT DUNTON:

*Late into Camp.
*The Hunter's Supper.
The Start for the Hills.
(Lent by the artist.)

J. R. FOUNTAIN:

Crater Lake, Oregon.
The Crater Lake National Park. (Lent by the Southern Pacific Co.)

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ALBERT L. GROLL:
Laguna Pueblo.
New Mexico. (Lent by the National Gallery of Art.)

JAMES HENRY HARPER:
Sunset on the Oregon Trail.
(Lent by the artist.)

W. VICTOR HIGGINS:
*Chile Venders, Taos.
Pueblo of Taos, New Mexico. (Lent by the artist.)

THOMAS HILL:
Yosemite Valley.
The Yosemite National Park. (Lent by the Southern Pacific Co.)

SYDNEY M. LAURENCE:
The Trapper.
Alaska.
Mount McKinley.
Alaska.
(Lent by the National Gallery of Art.)

WILLIAM R. LEIGH:
Grand Canyon.
Arizona. (Lent by Snedecor & Co.)

THOMAS MORAN:
A Rocky Mountain Solitude.
The Rocky Mountain National Park. (Lent by the artist.)
In the Grand Canyon of the Colorado.
Arizona. (Lent by the National Gallery of Art.)
Grand Canyon of the Yellowstone.
The Yellowstone National Park. (Lent by the artist.)
Grand Canyon of Arizona on the Santa Fe.
(Lent by the Atchison. Topeka & Santa Fe Railway.)

DE WITT PARSHALL:
The Hermit Creek Canyon, The Grand Canyon.
Arizona. (Lent by the Worcester Art Museum.)
Isis Peak, The Grand Canyon.
Arizona. (Lent by the Syracuse Museum of Fine Arts.)
Granite Gorge, The Grand Canyon.
Arizona. (Lent by the Toledo Museum of Art.)

SHELDON PARSONS:
*Morning in the Canyon.
The Grand Canyon, Ariz. (Lent by the artist.)

F. C. PEYRAUD:
Afternoon in The Grand Canyon.
Arizona. (Lent by the artist.)

EDWARD H. POTTHAST:
The Chasm.
The Grand Canyon, Ariz. (Lent by the artist.)
*Bright Angel Canyon of Arizona on the Santa Fe.
The Grand Canyon, Ariz. (Lent by the Atchison, Topeka & Santa Fe Railway.)

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ARTHUR J. E. POWELL:
St. Marys Lake.
Grinnell Lake and Glacier.
Scenes in the Glacier National Park. (Lent by the artist.)
LUCIEN W. POWELL:
Grand Canyon of the Yellowstone.
The Yellowstone National Park. (Lent by the National Gallery of Art.)
WILLIAM RITSCHEL:
Awakening of The Grand Canyon of Arizona.
(Lent by the artist.)
CARL RUNGIUS:
Near Timberline, Bridges Forest Reserve, Wyoming.
The Yellowstone National Park. (Lent by the artist.)
BIRGER SANDZEN:
*Sunset in the Mountains, Colorado.
The Rocky Mountain National Park.
*The Arapahoes.
The Rocky Mountain National Park.
*Sunset in The Grand Canyon.
Arizona.
(Lent by the artist.)
E. SERBAROLI:
*Mount Tamalpais.
California. (Lent by Hon. William Kent.)
J. H. TWACHTMAN:
*Waterfall, Yellowstone Park.
The Yellowstone National Park. (Lent by the City Art Museum of St. Louis.)
WALTER UFER:
Indian Gardens.
The Grand Canyon, Arizona. (Lent by the artist.)
PETER VAN VEEN:
*Mount Rockwell, Glacier National Park.
(Lent by the artist.)
F. BALLARD WILLIAMS:
Grand View, The Grand Canyon of Arizona on the Santa Fe.
(Lent by the Atchison, Topeka & Santa Fe Railway.)

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NATIONAL PARKS CONFERENCE.

TUESDAY, JANUARY 2, MORNING SESSION.

SUBJECT, "OUR NATIONAL PARKS."

The opening session of the conference was convened at 10 o'clock on the morning of January 2, 1917, with Hon. Stephen T. Mather, assistant to the Secretary of the Interior, presiding.

THE PRESIDING OFFICER, STEPHEN T. MATHER.

The conference which it is my great pleasure to open this morning should be one of deep significance both in the economic and spiritual life of the American people. Our national parks are still unknown and undeveloped in the broader sense, because this Nation has remained unconscious of the mighty development within itself. Like the bursting of the chrysalis, suddenly our childhood falls away. Suddenly we realize our national self, our power, and our responsibilities. Suddenly we put aside childish things and step forward into the vigorous stride of manhood.

Among the many evidences of this tremendous change is the awakening of the Nation to the enormous and neglected opportunities offered by its incomparable national parks, areas of accessible scenic sublimity which in extent and variety are unmatched in all the rest of the world together. Hence the recent activities in this part of work of the Department of the Interior. Hence this conference to consider the ways and means to realize the fullest destinies of the national parks.

Momentous changes have been executed in national parks organization to meet the certain and swift demands of the future. The reorganization of the internal economies of the Yosemite, the Mount Rainier, and the Yellowstone National Parks have been accomplished, as models for all the rest, on a basis of Government partnership with concessioners which guarantees self-support in the not distant future. For our national parks will ill fulfill their natural destiny if they are to remain a charge upon the Nation's treasury. Their inevitable destiny is to become an asset economically, as well as an incomparable source of pleasure and education and spiritual uplift.

Congress has promptly responded to the movement in the public interest. Last August it passed a bill creating a bureau in Washington for the proper and businesslike administration of the new public charge. We now celebrate the birth of the National Park Service.

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The department's efforts to meet the future's demand must not, however, exhaust themselves in financial and economic efficiency. In a hundred ways the national parks will touch vitally the intellectual and spiritual life of this people. It is my hope that this conference will shed a white light upon the way.

I have the honor to present the Hon. Franklin K. Lane, Secretary of the Interior.

HON FRANKLIN K. LANE, SECRETARY OF THE INTERIOR.

Mr. Chairman, ladies, and gentlemen of the conference, it gives me great pleasure to greet you this morning at the opening of the first National Parks Conference, and out of your deliberations I expect will come not only a new enthusiasm for the development of these great public playgrounds but suggestions that will insure their greater popularity; for parks without people are a burden, not a benefit.

Some of you are park superintendents. It is your business to make the best use possible of the money Congress gives for the building of roads and trails; it is your business also to see that the hotel manager and the camp manager and the transportation manager furnish the kind of service which the parks require to make them popular places for all classes. It is your business to suppress the ugliness which men of a mere commercial turn are always fostering and to bring into relief the beauties and grandeurs of nature for which these parks have been saved. You represent Uncle Sam as host toward the people of all nations who wish to see how grand and wonderful a land this is.

Uncle Sam, we are proud to boast, is generous, hospitable, considerate, competent, courteous, and democratic. He is neither a snob nor a sycophant nor a coward, but an upstanding gentleman who respects others because he respects himself; and as he respects himself he respects the man who knows his job. So the call on you as Uncle Sam personified as host is somewhat large, and if you and your rangers can not realize it to the full at all times I know that a kindly public will not expect the impossible.

Many of you have come long distances and at much expense to tell us what can be done to make our parks realize their mission or to give us a truer appreciation of them. We thank you for coming. Uncle Sam needs volunteers in his park service as well as in his Army and Navy service.

These are days when we are taking stock of all our resources, not for days of war only but for the larger days of peace. And the Rocky Mountains and the Sierra are just as real resources as the Mesaba Range or the oil fields of Oklahoma. They can be turned into money, if you please—millions of money every year for railroads and farmers, grocers and butchers and bakers.

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Better still, they can be turned into men; men who love the open and know how to live in it; men who have its spirit in their souls; men who are bound to their country by ties which those who live in cities do not know; men who have been taught by great red granite cliffs, by blue mountain lakes, by stretches of purple desert and by the close study of the long processes of nature—the grinding of the glacier and the cutting of the tiny stream—that a grand thing, a beautiful thing, a noble thing comes slowly, whether it is a noble canyon, a noble character, or a noble nation.

THE PRESIDING OFFICER, STEPHEN T. MATHER.

One of the strongest and best friends that the national park system has among the national legislators has honored us with his presence here to-day. This distinguished Representative of a Western State in the United States Senate has been for years interested in the promotion of the national park system, and has been a consistent advocate of scientific business management in the operation of this park system as national playgrounds for the American people.

It early became evident to our honored guest that an absolutely indispensable necessity for the success of the system was a bureau or service to manage the national parks. Not only did he believe in this principle, but he put his theories into action, and since the year 1912 he has introduced in every Congress a bill looking toward the enactment of legislation that would provide for such a bureau or service. And he has urged on every possible occasion the enactment of a measure to provide for this proposed bureau, which should be under the direction of the Department of the Interior, and which should have for its sole function the handling of the national parks.

Among the first bills introduced in the Senate in the Sixty-fourth Congress was the national park service bill, framed and presented by this friend of the national parks. It so happened, however, that a measure, drawn and introduced in the House by the Public Lands Committee as a result of bills introduced by Congressman Raker and Congressman Kent, secured favorable passage by the House before the Senate bill had been acted upon; and our guest urged the early passage of this bill by the Senate, and helped to secure its passage by that body.

He is interested in national parks, and he is interested in the setting aside of national monuments. Several of the largest and best of these national monuments are located in the State which he represents, among them the wonderful Mukuntuweap, which contains Little Zion Canyon, or what is coming to be popularly known as "The Desert Yosemite." Through an appropriation recently obtained, this monument is now being made accessible to visitors.

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I now have the honor to present to you the Hon. Reed Smoot, United States Senator from Utah.

HON. REED SMOOT, SENATOR FROM UTAH.

Mr. Chairman, ladies and gentlemen, if my memory serves me right the first bill I introduced in the Senate creating a National Park Service was on December 17, 1911, and every session of Congress since that time I have reintroduced a bill for that purpose. I became convinced early in my life that there was nothing that would make man realize his littleness more than by seeing and recognizing the power of God's marvelous creations of nature, and nowhere can that be better demonstrated than by a visit to our national parks, for in them are to be seen many of the most marvelous creations of our Maker.

In 1911 we had 12 national parks. I think we now have 16. We had at that time 28 national monuments, and, by the way, some of them should be national parks instead of national monuments. I have particular reference to the Grand Canyon of the Colorado, in which are to be found some of the most marvelous sights in all the world. I think there must be something wrong with a person who does not love nature or who does not become enthused in seeing the scenic wonders of our country. I do not know of anything that brings me more joy, more pleasure, more information than studying the forests, the life and death of them, and I can not conceive of a greater pleasure to a person than to visit our national parks in which are found nature's greatest wonders. Our dream of five or six years ago has become a reality, and to-day we have a National Park Service. The mere creation of that service will do the people very little good unless funds are provided by the Government to enable the officials of the service to first prepare the parks so that people visiting them can receive comfortable accommodations; second, to educate the people, tell them where the parks are, how to reach them, and what are the chief sights to be seen. We must advertise them by the moving pictures, as has been done in the past by the American Civic Association. I do not believe that there was ever a conference held by that association that converts were not made to the wisdom of the use of our national parks. A convert is generally an enthusiastic park man. We can depend upon this: that whenever a person visits our parks and spends but a few weeks within them he becomes an advocate of them: he speaks for them, and wherever he goes his influence is exerted with other people to enjoy what he has enjoyed.

I was very glad to hear the Secretary give instructions to the officers having in charge the national parks that they should be polite to all visitors. In my opinion, they should have impressed upon them that they are not representing themselves—they are represent-

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ing the great Government of the United States, and every courtesy should be extended by them to the people who come to visit the wonders of the parks.

I never went into a national park in my life and looked at the mountains, their formation, their grandeur, their beauties, whether in winter or in summer, but that I was reminded of the words of the poet which seem to me a complete and fair description of a mountain. They are as follows:

Yesterday thy head was brown, as are the flowing locks of love in the bright blue sky.
I watched thee towering giant-like above.
Now thy summit's white and hoary, glittered o'er with silver snow,
Which the stormy wind hath shaken from its robes upon thy brow,
And I know that youth and age are fraught with such mysterious meanings
As the days are linked together one short dream but intervening.

My friends, in December, 1911, at a meeting of the American Civic Association I had the honor to speak on the subject of national parks, and last night as I picked up a report of that meeting I noticed among other things I said:

I believe in the conservation of our scenic wonders and our natural mysteries. Africa has its jungles; Australia its vast deserts; Siberia its endless wastes; and America its scenic wonders and natural mysteries. It is for the better preservation and administration of these marvelous formations that will, I hope, be acknowledged among the richest of our Nation's natural gifts that this convention has been called.

Secretary Lane has stated to you what he believes was the greatest sight he ever saw in his life. I now say that the greatest sight I ever witnessed in my life was not at Mount Blanc, in Switzerland, nor was it in the scenic wonders lying before me in crossing the De Bazon or the Mers de Glas—no, it was standing on the rim of the Grand Canyon of the Colorado. The night before a heavy rain had fallen, and you people know how it can rain whenever it gets started in that country, and as the warm August sun came up the next morning the vapor began to rise from the heated ground below and there was a gentle warm wind coming up the canyon, strong enough to form the vapor in rolling clouds, and as the rolling clouds ascended from the bottom of the canyon to the heights of Bright Angel Point, where I stood, I could see through the clouds of vapor as through a telescope those great temples of rock, cut out by the hand of the Master Architect in ages past. And then the scene would be shifted, and upon the other side of the canyon we could see the cliffs of most marvelous hues, first the brightest pink and then somber gray, and it was as the changing of one marvelous scene to that of a greater.

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Was it worth to me the few paltry dollars and cents and time that I took to go to the Grand Canyon of the Colorado? Why, my good people, it can not be counted in sordid dollars. My visit to the canyon made me a better man; it made me a better citizen, and I acknowledge with greater freedom the power of the Supreme Being, a thing that in everyday life we so often forget.

Now, I do not want to see our national parks robbed of any of their beauty on the ground that it must be done in order to secure money sufficient to pay the expenses of maintaining them. I do not want to see the trees of the parks destroyed. I do not want to see any of the natural resources taken from them that would in any way mar their beauty. I think that it would be the best money that Congress could spend, to place the parks in a condition that they can be enjoyed by the people of the United States. The people will go when educated, and it will not be long that the Government will have to expend money on them, for already there are five on a paying basis and it won't be long until all of them will be; and instead of a few hundred thousand people visiting these parks there will be millions visit them. The parks must be made attractive and accessible in order to accomplish this, and it is the duty of the Government to make them so.

We must have good roads in the parks. We should keep them well repaired and sprinkled. That's a business proposition, and just as soon as the parks are attractive and accessible and as soon as the American people understand it and their wonders are advertised the question of the maintenance of the parks on a business basis will have been settled. So, I do not worry about the future of the parks. What I want is to have the people understand what it means to them to visit our national parks. Our revenues from the parks will increase year by year and will pay the expenses of their maintenance in a few years to come. The concessions in the parks will assist in that regard, and I want the concessions in all of the parks not to be based upon how much money can be made out of them, but the idea should be to have the Government hold control over them. There are certain receipts in many of the parks that will come from the grazing privileges, although I do not want them overgrazed, and I think grazing should not be allowed in some of the parks. There are other revenues that will come from the telephone service and the light service and utilities that must be established by our Government in the parks in order to make them accessible and attractive to the people who visit them.

I hope that all unsightly advertisements will forever be kept out of the parks. I want some place somewhere in the world that I can go and won't have to read the advertisements of "57 varieties" of pickles, etc., and I will add patent medicines of all kinds. I hope

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that the Secretary of the Interior will see, whenever a concession is given for the erection of a hotel in a national park, that the hotel will be built in conformity with its surroundings. We do not want any seven and ten story hotels in our national parks. We want them never more than two stories, rustic in their appearance, and something different from that which you see in every city that you visit.

I realize that our national parks have been neglected and scarcely heard of in the past, but I am positive their beautiful scenic value, awe-inspiring grandeur, and life-giving virtue will be appreciated by millions in the near future instead of but thousands as at present.

The greater number and almost the entire acreage of our national parks are in the West. The God of Nature in the distribution of scenic wonders of the world lavished them upon the western portion of this continent, placed them high above sea level, and surrounded them with a summer climate fit for the gods, making them the natural recreation grounds for the overworked and nature-loving people. The people of our country do not realize the value of these gifts of nature, but that will come in time and come naturally. I think I can see in the future a great portion of the three hundred and fifty million American dollars now spent annually abroad for recreation, rest, and sightseeing diverted to American railroads, American hotel keepers, American guides, American merchants, and American farmers.

I look for the time when our national parks will be the means of people from different sections of the country being brought together and becoming acquainted with each other; learning each other's aspirations, hopes, and beliefs; learning of their honesty of purpose, ideals of life, loyalty to home, State, and Nation. Results of this character can not be estimated in mere dollars and cents.

I have upon a number of occasions visited Europe, climbed the mountains of Switzerland, gazed upon Mount Blanc with all of its surrounding grandeur; but when I stood upon Bright Angel Point and gazed upon that marvelous gash in the breast of mother earth, saw within it the temple-capped hills, its varied-hued earth and stone, its awe-inspiring greatness, with the river thousands of feet below me, I could not help but exclaim, "Europe has many scenic wonders, but none like the Grand Canyon of the Colorado." To see it convinces man of God's greatness and man's littleness.

I think the time will come when it will be popular for an American to have seen and know the wonders and advantages of his own country. I do not believe that an American's education is complete, nor is it possible for him to know the wonders of his own country, until he has seen the marvelous geysers, boiling springs, and volcanoes, brilliant hued canyons, great lakes 8,000 feet above sea level, in the

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Yellowstone National Park; or the magnificent waterfalls in the Hetch Hetchy Valley, the ice sculptured canyons and forests in the Yosemite; or the big trees, growing in many instances to a height of 300 feet with a diameter of 30 feet and bark 2 feet thick found in the Sequoia; or the glaciers and the rugged mountain scenery of Mount Rainier; or the beautiful lake within the crater of an extinct volcano in the Crater Lake National Park; or the prehistoric ruins of an ancient people in the Mesa Verde National Park; or the wonderful natural bridges, the largest in all the world, found in the southeastern part of Utah.

When better hotel accommodations, better public transportation, including the construction of roads, trails, and bridges, are secured, instead of having 224,000 visitors annually, they will be numbered by the millions. And I do not know, my friends, but that this answers the situation to-day. Only we have advanced somewhat from that time. Every year there are more visitors to our parks, and I hope to see the time that there will be few Americans who will have to say that they have not visited some of the national parks of America, and when you have visited one you want to visit another and when you have visited that other one you want to visit them all; and I see in the future success for the accomplishment of all that Congress had in view in creating the National Parks Service. And the people who visit and live for a while in them, enjoy their grandeur and beauty, will have better health, will be better citizens, will know their country better, and will love it more. And all I have to say is, let us work together to bring this about and hasten the day that all these benefits may be enjoyed.

I thank you.

THE PRESIDING OFFICER, MR. MATHER.

Thank you, Senator, for the interest that is shown by your talk here to-day. It only stimulates and proves to us the interest that you have always taken in the entire national parks matter. With more of such interest there, gradually increasing as it is bound to in Congress, we will have the results that we have been long looking for in the way of larger appropriations, and of course as an outcome of that a larger attendance in the parks.

SENATOR SMOOT.

Mr. Chairman, just before you proceed, I want to beg to be excused. The subcommittee of the Appropriations Committee of the Senate meet this morning, and I had to beg off in order to come here. We have hearings on before that subcommittee, and I hope you will not think that I am trying to run away, if I withdraw at this time.

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THE PRESIDING OFFICER, MR. MATHER.

Certainly not, Senator.

SENATOR SMOOT.

I would have been delighted to stay here.

THE PRESIDING OFFICER, MR. MATHER.

We appreciate your having given to us a part of your busy time when your work is so pressing.

SENATOR SMOOT.

You will excuse me.

THE PRESIDING OFFICER, MR. MATHER.

We also have the privilege of having with us to-day the Hon. Scott Ferris, chairman of the Public Lands Committee of the House. His work at this particular time, with all the important bills to which he has to give consideration day and night, is exceedingly pressing; and I can not thank him too much for having come around this morning to give us of his time. Congressman Ferris has always lent a sympathetic ear to all measures designed to improve and promote the national parks. He has held extensive hearings on the National Park Service bill, and his public hearings afford important information on the parks and monuments. He has done everything in his power to insure the creation of the National Park Service.

Our distinguished guest has several important measures pending at present in Congress relating to the parks system throughout the country which he is studying with his characteristic keenness and enthusiasm; and we may depend upon him to have the interests of the parks continually at heart.

In my work in connection with national parks it has been my privilege to come to know something at first hand of the lovable personal qualities of this distinguished gentleman, qualities which have made it both a pleasure and a privilege to consult and advise with him concerning the management and the furtherance of an ideal national parks system in this country.

I take great pleasure in presenting to you Hon. Scott Ferris, Representative in Congress from Oklahoma, and chairman of the important Committee on Public Lands, who will now address you.

HON. SCOTT FERRIS, REPRESENTATIVE FROM OKLAHOMA.

Mr. Chairman and members of the conference, the total area comprising the United States is 3,026,789 square miles. The total area

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of the 16 national parks and 31 national monuments is 7,500 square miles. This is but one-fifth of 1 per cent of the aggregate. In the minds of thoughtful men can this be too much?

It was a fair day for the Republic when in March, 1872, the Yellowstone National Park was created. That was but 45 years ago, within the lives of most of us here to-day. Is there a man here to-day, or can there be a man anywhere, who regrets the start then made? In the 45 years that have elapsed since that time we have created 15 more national parks and 31 monuments. Five of the 14 parks have been created during my short service in Congress. The total acreage of the 16 national parks is roughly 5,000,000 acres, the national monuments, roughly, 86,000 acres. I am happy that legislation is now pending for four more in the Committee on the Public Lands, and as fast as they can be examined I am greatly in hopes they may be created.

The amount of money that goes abroad each year by tourists is no less than alarming. The best estimate available is that more than $500,000,000 is expended by our American people every year abroad vainly hunting for wonders and beauties only half as grand as nature has generously provided for them at home. Nothing but common prudence will demand that we of the Congress and you members of the conference be found trying to keep at least a part of that money at home where it belongs.

In countries of the Old World, where profligacy has long since taught them the lesson of prudence and thrift, they are collecting vast sums from the tourists each year who scramble to see things less beautiful and less grand than are available on their own fair shores. For example, the yearly incomes from Switzerland from their park revenues is $150,000,000; France, $500,000,000; Italy, $100,000. So for those who are sordid and would have their parks built up for commercialism our park system can well be defended on that ground alone. Fearful, however, that I may be misunderstood, I am not in favor of trying to make them pay. I want them to be one free spot for every citizen of the Republic, and want him to feel it is his and he has the right to occupy it and feel that he is both patron and master of all that he surveys.

Our appropriations from the Federal Treasury for the parks have been light. During the last year but $283,590 was appropriated from the Treasury for this great and growing system of parks. This is less than one-sixth of 1 cent per capita. The city of Philadelphia, with its one and one-half million population, expends $1.25 per capita for parks; Baltimore, with its half million population, expends $1 per capita; Harrisburg, Pa., 42 cents per capita. It will, therefore, be observed that the cities and municipalities are expending lavishly from direct taxes for parks for the few, while the Government has

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been expending quite cautiously, if not parsimoniously, from the general revenues of the many for the benefit of the teeming millions of the Republic.

Our population is growing like the weed in fallow soil, but our parks and nature's beauty spots will not grow in number or area, but unless constantly on guard will diminish at the hands of greed and human selfishness. The jeweled and attractive hand of greed, the plausible and ever present hand of selfishness stands ever at attention ready to help himself to the things that belong to all of us. Let us be vigilant. Let us be persistent in the preservation of these wonders, not alone for the hour or the day in which we live, but for the generations that will follow us.

The new Park Service law is now in full operation. It will bring development and progress. It is the thing that will make the parks what we hope them to be. It will bring order out of chaos. It is the law you park people long have sought and mourned because you found it not.

The Appropriations Committee always asks why we do not get more revenue from the parks. For me and mine I hope they will be able to run these parks with less revenues from the parks rather than more. I want these parks to be the one green spot in this busy Republic where every busy life will feel free at home to lie down in the shelter of the tree. I want the spreading branches of the trees of our national parks to be the property of the humblest man in all the land. For me and mine, I never want them operated with an eye single to commercialism. To so conduct them would be to rob them of their many charms. It would strip them of their grandeur and their beauty. Let them be free to all and every one, to-day, to-morrow, and forever.

Let the mission of the parks be to stimulate and promote the higher and better instincts of men. Let them be a breeding station for patriotism. Let them teach sordidism and sordid things to vanish from the face of the earth. Let them be fountains of youth, health, virility, and rest. As the Nation grows older, as the strong will naturally trample more and more upon the weak, these treasures and virtues just enumerated will be equally essential with the sordid considerations both to the individual and the Nation.

From Muir to Mather, in dealing with parks, the watchword has ever been forward. At no time has the hands of the dial of progress been turned backward. Their faces have ever been forward. Let this conference this day firmly and forever resolve to keep them moving forward. Let our faces ever be eastward in park development. Let us keep Mather as long as we can, and when he must let go let us hastily try and find one fashioned in his image.

Our park sytem is so far-reaching in its scope, so permanent and lasting, hence the more necessary that it be built strong and enduring.

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We should make no error in the building. The structure should be strong from turret to foundation stone. Vigilance must be the watch-word to free it from error and from harm. Let it be the one green spot in all the Republic where the citizen will delight to point with pride. Let it be the spot where extortion is untolerated and unknown. Let the citizen feel it is his park, where his weary feet may ever find a spot of rest, a spot conducted by his Government, which disdains to do any citizen wrong. This will make the parks all that we hope them to be. This will make every citizen their defender. This will make them as enduring as the flag of the Nation, a niche in the heart and the affections of every citizen.

The national parks of the Republic will soon be known as the last refuge for the wild game of the country. This is no small factor and will be no small mission for them to perform as the Republic grows and becomes more and more crowded and congested.

This conference should and doubtless will enjoy a just pride in the thought that they build not alone for the day in which they live. How selfish and unenduring would it be if you built only for the fleeting day. On the contrary, how enduring and alluring to build unselfishly for those that will follow you when you are gone. The former is so short-lived and fanciful, the latter thrice everlasting and real.

So proud you must be that the parks for which you toil are not dependent for their only charm upon iron dogs, spouting gargoyles, stone fountains, and ill-shapen crudities that too often infest parks fashioned by the hands of man. Yours are charged and surcharged with the beauties and grandeurs of nature more sublime than any wrought by the hand of man. Yours are waterfalls and cataracts whose charms are never ending, that entrance and beguile the soul of man as they glisten in the sunlight of God. Yours are the wild flowers whose perfume lingers within the nostrils of the tourist when all else have faded and been forgotten. Yours are the mountains and the crags that the God of the Universe erected as a monument of respect and a solemn sentry of love and devotion to those who are to come and be welcome, enjoy, and observe. These, and ah! a thousand times more, are but few of the joys and charms held in the folds of these wonderful spots concerning which you have met in conference this day. These parks are the spots that the God of the Universe would preserve for all of us as distinguished from the few of us; to keep inviolate for the multitude as long as the tide of them shall stand.

A municipality to-day without a park is a crudity and a curiosity. A nation without parks is a calamity. Let us shun the calamities of the hour as our ancestors have shunned them for the 6,000 years of recorded history behind us.

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Reared in the open air and the sunlight, I was only taught their charms and virtues as the onrushing tide of a busy life divested me of them. How strange we never prize the music till the sweet-voiced bird has flown; and so it is with the beauties of nature. A busy Republic, but for the activities of the thoughtful, patriotic men like yourselves, ever vigilant, ever self-sacrificing, would neglect its richest heritage, these parks. In the years that are to follow these, how enduring and comforting it must be to you of this conference to know you were the pathfinders in this great undertaking of nurturing, rearing, and bequeathing to this thriving, busy Republic a park system that is to be the property of the Nation for all time.

How comforting it will be in years to come for those who bear your names on down through the corridors of time to know that they are of the flesh and bone that left behind them footprints on the sands of time, descendants of those who erected public blessings not alone for themselves but for those that were to follow; blessings that neither moth nor rust can invade; blessings that neither time nor adversity can corrupt, efface, or erase.

Such will be the princely heritage you leave behind. Of such a legacy both savage and civilized will hold a just and enduring gratitude.

Mr. Chairman, I thank you.

THE PRESIDING OFFICER, STEPHEN T. MATHER.

We all have our discouragements in this work that we are undertaking, but we have inspiration in the words that Congressman Ferris has given us to hearten us on our way; that, in spite of the mistakes that we have made, perhaps we are accomplishing something; perhaps there is some development being made from day to day which will count for the future.

I want to call on another member of the Public Lands Committee of the House who has always had a sympathetic ear for the work, and who attended the hearings regularly and gave a great deal of personal attention to the National Park Service bill. He devoted much time to this measure, being most anxious that a thoroughly workable bill should be passed. The Congressman, I may say also, was a tower of strength in its enactment.

But more than this, Representative Lenroot has been and is a consistent friend of the West, and we may depend upon him to remain a loyal, earnest supporter of the national parks system in this country.

I have the honor to introduce to you Irvine L. Lenroot, Representative in Congress from Wisconsin, ranking minority member of the Committee on Public Lands.

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HON. IRVINE L. LENROOT, REPRESENTATIVE FROM WISCONSIN.

Mr. Chairman, ladies and gentlemen, it would be impossible for me or anyone to discuss in 10 minutes, except in a most general way, any phase of the national park question in detail. We who are Members of Congress are interested in this question as every citizen ought to be interested in it, but we are especially interested in the question of a proper legislative policy to be pursued in the creation and development of our national parks, and I hope that before this Congress shall have adjourned some consideration will be given to that great question, and while, as I said a moment ago, I could not in 10 minutes hope to discuss this question in detail, I do want very briefly to outline the views of one Member of Congress as to the policy that he thinks ought to be pursued at this time, and because I wish to get it as succinctly as possible I have committed what I propose to say to writing.

In the creation of national parks by Congress there are two objects in view well stated in the act establishing a National Park Service. One purpose is to conserve the scenery and the natural historic objects and the wild life therein for the enjoyment of future generations, and another to provide for the enjoyment of the same in such manner as will leave them unimpaired for the future. I think it is unfortunate that in the minds of many people the creation of a national park by Congress also involves its immediate improvement. This should not necessarily follow. National parks should be created freely now in order to conserve the scenery, etc., for future generations. They should be created while the land is still in Government ownership, for once passed into private ownership, the opportunity for securing it will be gone. I, perhaps, am responsible more than any other Member of Congress for the provision in the latest acts creating national parks, limiting the appropriation that could be made for maintenance and improvement to $10,000 annually, without previous authorization of law. In proposing this limitation I had two purposes in view: First, to make the securing of new national parks less difficult, removing the objection of immediate, large expenditures upon them, if created; secondly, I do not believe that all of these national parks should be developed simultaneously. There is a limitation upon the aggregate amount of money that Congress will appropriate for this purpose. I am glad that Congress is becoming more liberal each year, but there will always be a limit to expenditures that Congress will make for this purpose. Our national park system should be considered as a whole. The use of national parks should be made by the largest number of people possible and by the present generation. To scatter $500,000 annually for improvements over a dozen national parks will not bring as

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many tourists and visitors to the parks as the expenditure of the same amount of money upon three or four of them.

We have now 15 national parks within the continental United States. From these 15 we should eliminate from this discussion the Hot Springs Reservation, which is self-sustaining, the Platt, Wind Cave and Sullys Hill Parks, which are small in area and from a national standpoint comparatively unimportant, leaving 11 to come within the scope of our discussion. I believe that large appropriations for the present should be confined to three or four of these 11 Of these three or four, the Yellowstone and the Yosemite, would, of course, stand as first in importance, and one of the others should, in my opinion, be the Glacier National Park. The Yellowstone is well developed and does not require large expenditures, but the Yosemite and the Glacier National Parks still require large expenditures. Large appropriations for other parks should await the development of these three or four. In support of this I wish to call attention to the tourist travel in the Yellowstone and Yosemite Parks. In 1914 the Yellowstone had 20,250 visitors, in 1916 it had 35,849. The Yosemite Park had 15,145 in 1914 and 33,390 in 1916. Of equal interest is the comparison of appropriations made and revenue received from these two parks. In 1906, 10 years ago, the appropriation by Congress was $7,500 for the Yellowstone and the revenue received was $2,125; in 1916 the appropriation by Congress was $8,500 and the revenue received $46,628. In the Yosemite Park in 1906 the appropriation was $5,400 and the revenue received was $1,000; in 1916 the appropriation was $75,000 and the revenue received was $49,878. The total expenditures for improvement and maintenance of the Yosemite Park during the past 10 years has been $625,150, and I understand there has been expended upon the Yellowstone Park since its creation, for improvement and maintenance, more than $2,000,000.

If the appropriations for these two parks during this period had been scattered over a dozen or more parks, I think it is safe to say that the tourist travel to all of the parks and the revenue received from them would have been less than that of these two parks alone, conclusively proving, it seems to me, that we should develop a few of our parks at this time and concentrate our expenditures upon them. We will thus make them of the largest benefit to the Nation at large, and also more rapidly bring them to a point where the revenue received from tourists will substantially aid in their improvement and maintenance. These national parks are not local propositions or State propositions, and their improvement and development should be considered not from the standpoint of the interest or wishes of the people of any State but from the standpoint of the benefit to the people of the Nation.

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There are several bills now pending in Congress for the creation of additional national parks. If the policy that I have outlined could be adopted, there would be no reason why many of those bills should not be enacted. With the knowledge that a large expense would not fall upon the Government for their immediate development, their enactment would not sacrifice the improvement of existing parks, which should be developed as rapidly as the finances of the Government will permit.

Upon this general question a great step forward has been made in the creation of the National Park Service act, and we have every reason to believe that not only will the administration of our national parks be more efficient than it has ever been in the past, but that Members of Congress will receive valuable advice and suggestions from the Park Service as to the future policy of Congress with reference to this great question.

Now, I realize that it is perfectly natural for enthusiasts of any propaganda to feel that their particular proposition is the one important thing. We could never make any success upon any proposition unless we had such enthusiasm, and I realize that friends of the national parks who are not Members of Congress find it difficult to realize why Congress is niggardly, as it is sometimes termed, in its appropriations.

However, in the consideration of this question it is a condition and not a theory that confronts us. Congress ought to make larger appropriations each year. It is going to increase its appropriations; but nevertheless Congress will never make as large appropriations for any object as the enthusiasts in favor of that object desire; and we may as well squarely face this proposition with reference to the development of our national parks: Congress this year, next year, and for years to come will limit the appropriations that are going to be made for the development of our national parks, and it is an extremely important question as to what legislative policy shall be pursued in the development, whether or not such appropriations as are to be made shall be scattered over the very large number of parks, or whether they shall be confined to a few of them, developing them with roads, and advertising them so that the people of the United States, for whose benefit they are created, will know what they have, and that they may have access to them.

And I want to say, too, in passing, that it is very seldom, indeed, that my good friend Mr. Ferris and I disagree upon any of thes great public questions, but I can not altogether follow him in the thought that he presented that our national parks should in the very near future become entirely free to the users of them. In the very nature of things a comparatively small percentage of the hundred million people of this country will be able to take advantage of our national

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parks in this day and generation, and yet when we appropriate money for their development that money is paid by all of the people of the United States.

Now, it seems to me that when those who do utilize the parks are able to receive that benefit, it is entirely proper that they should pay something for the improvement and maintenance of those parks; not a prohibitive figure, not a figure so large as would deter anyone who can afford, for instance, to travel from the city of Washington or any eastern State to the West; not such an amount as would prevent him from taking advantage of that park; but, at the same time, to pay something for that benefit that he is receiving over and above that average citizen of the United States who, perhaps, will never have the good fortune to see them at all, and with that revenue—a reasonable revenue—it will mean a great deal in the development and maintenance of these parks.

In concluding, I feel that I ought, as a Member of Congress, to express not only my appreciation but the appreciation of every Member of Congress who is at all familiar with this national park subject for the splendid work done by the American Civic Association and other organizations in securing the creation of a National Park Service and the creation of the Rocky Mountain and other national parks, and I am sure that you all most cordially indorse what has been said by the preceding speaker concerning Mr. Mather, who presides to-day. He is giving the best years of his life to this great subject. He is giving generously of his own private means to this great object; and because of his enthusiasm, his practical mind, and the confidence that all Members of Congress have in him, Congress, as you will note, is becoming more liberal in its appropriations; and I feel certain that, when the time shall come, which I hope will be in the not distant future, when a deficit no longer stares us in the face, the development of our national parks may go forward by leaps and bounds.

I thank you.

THE PRESIDING OFFICER, STEPHEN T. MATHER.

Representative Lenroot has given us much of interest in his address. I want to point out to him that we are getting revenues from the parks. As he has, of course, himself stated, we are getting revenues from the people who are entering them. The Yellowstone, for example, brought in $60,000 during this last season. A large part of that came from fees paid by motorists; another part came from the concessioners in the shape of a usage tax based upon the number of tourists accommodated. We feel that, in a park like the Yellowstone, the concessioners should pay a percentage of their profit

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into the fund which goes to make up the revenues of the park. The visitor who enters the park to-day finds this no burden upon him. Those parks that are developed on a more or less broad scale, like Yellowstone, Yosemite, Mount Rainier, and others, are yielding revenues in quite substantial figures which will help very materially toward the upkeep of those parks.

A month ago I had the privilege of being in the Yosemite Park and was up in the upper country some 8,000 feet in altitude, which is very high for that time of year, as the snows begin early in the High Sierra. I had the privilege of having an old friend of mine there. He is put down on the program as Representative William Kent, of California; but I can not help thinking of him as William Kent, of Chicago, my old city, where he helped so faithfully in municipal affairs before he transferred his allegiance to California and to national affairs.

We all know, not only in Chicago, but in the country at large, the interest he has taken in national affairs. But the work that he has done toward helping along the national park movement is one that at the present time appeals directly to all of you here; and I am going to call on Representative Kent for just a word or two. The interest that he took in the creation of the recent act meant a lot of personal attention on his part at a time when he had a great many other things that were piling in on him, but I never failed to find a cordial sympathy and attention whenever I had to go up on the Hill to talk over some of the many problems and difficulties which were confronting us in the work. Congressman Kent.

HON. WILLIAM KENT, REPRESENTATIVE FROM CALIFORNIA.

Mr. Chairman, ladies and gentlemen, some years ago in Chicago we had an association of Californians that had a nominal existence, but all of a sudden there was great activity generated. I wondered what caused it all and on attending a meeting I found it was Mather who was at the bottom of the trouble. And as in Chicago, so in other places, whenever we found this man we found excessive, nay, almost undue, activity. In this national park work, as I have seen it, I have come to recognize the fact that if, as the Christian Scientists say, there is such a thing as malicious animal magnetism, that there must also be opposed to it something that we may call beneficent animal magnetism; and Mather is it. I have seen him make a man without a spark of patriotism suddenly wake up and realize that he was full of the most altruistic motives. I have seen him do the impossible over and over again. I have seen him get appropriations from Congress that could not be gotten. He used to make a lot of noise in his work. I suppose that was because he was an old-fashioned steam

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engine. He seems now to have reformed himself into a Diesel internal-combustion motor. He does not make as much noise, but he accomplishes more than ever.

Well, I am interested in this parks business because I am an outdoors crank and always have been. I am still more interested in it, because the parks to me—the national parks and the small parks and the city parks—all represent a growing Commonwealth; and those things that we own in common are the things that we most appreciate and the things that are the best for us; and the more we hold in common the closer knit will be the nation and the community, however large or small. For this reason, as a matter of philosophy, entirely outside of my natural instinct to enthuse over the out-of-doors and to get other people to do the same, I have struggled through many years of my life to urge and to foster the growth of communal property through the parks system, a phase of social growth that has not yet terrorized our individualists and conservatives. I hope the work will go on.

When I hear about these myriads of acres out West that are still in Government hands I am inclined to believe that if I had my way and absolute responsibility over the whole business I would withdraw every acre until I found out how much could be best handled in the Commonwealth and how much could best be allotted to individuals.

I know perfectly well that there has been a fearful havoc wrought in the individual handling of our forests. Never should an acre have gone in fee to any individual. The stumpage only should have been sold by the Government when and where needed. This is but an example and an aside.

Our Commonwealth should be much larger than it is and through the park system we have a possibility of, in a measure, enlarging it. My most direct interest concerns a small patch of redwood timber on the Pacific Ocean. The most beautiful forest in all the world is the redwood forest. This is a small inferior patch, and it is all that Uncle Sam owns out of the whole area of redwood timber, 295 acres of small trees, comparatively. In the northern part of California, in my district, there is a request for a river and harbor improvement which I consider a most worthy one, one of national importance, and I have been beset by some big timber owners up there among others to aid them in securing this development. The development should be made; but I took the opportunity to tell the lumbermen that if I were going to break my neck to get an appropriation they would have to come through with some redwood, and I have been promised a hundred acres of the best redwood in California, if the river and harbor bill goes through. Your derisive amusement may be due to your misunderstanding. This timber does not come to me, you understand.

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It is time I quit. I did not come here to make any formal remarks. I came here to testify to my appreciation of what this Mather person, this reformed steam engine, as it were, is doing, and to express my intension in the brief months left of my public life, and I hope many more of private life, to work toward increasing the Commonwealth. I thank you.

THE PRESIDING OFFICER, STEPHEN T. MATHER.

Representative Kent's gift of the redwoods to which he has referred has meant a great deal to the country at large. It has been an example which I think will have a far-reaching effect. As I came East with him from California about a month ago, he was working out a plan to add a considerable acreage to the Muir woods, which he felt should be done in order to properly develop it.

There are many misunderstandings in connection with gifts like Congressman Kent's. I think we do not really catch a vision of what a gift of that kind really means, particularly the absolutely altruistic motives that are behind it. I feel sure that, by this very gift of his, the stimulus was developed which resulted in our securing the Sieur de Monts National Monument, some 5,000 acres on Mount Desert Island on the coast of Maine. A group there headed by George B. Dorr has been working for several years to get together a large acreage and present it to the Government. They met with very little encouragement at first. They were told to go back and make sure their titles were all right. But they were persistent; they wanted to give the land to the Government; and, even though here and there a great deal of red tape had to be cut, they kept at it until finally the gift was accepted.

So that now we have on the Pacific coast the Muir woods, and on the Atlantic coast the Sieur de Monts, both gifts to the Government; and I think we are going to have more.

We held an interesting hearing about two months ago in Chicago, in regard to the proposed sand dunes national park. I think it would be a difficult matter to persuade Congress to actually appropriate the money to secure the sand dunes, but it will not be difficult to get the acceptance of the land if it should once be given through the medium of private subscriptions. If that beautiful tract of land is to be obtained for recreational and public use, I think that is the way it will come. It may mean a million or a million and a half in actual gifts, but with the proper inspiration the men will be found, I am sure, to come forward and make the gift.

I was much impressed to hear of the work that was being done in the State of New York on just those lines in the Interstate Palisades Park, where the total amount spent on that development, which is

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nearly 30,000 acres, represents a total expenditure of some $13,000,000. Practically half of that was obtained by private subscription.

So I think, Billy Kent—I believe I have a right to call you by that name—that the start you made with that gift of redwood forest is going to have farther reaching effects than any of us can dream of at the present time. The misunderstandings that will arise need not cause us anxiety. That little remark of yours amused me—your denial that those hundred acres of redwood forest were not going to you personally. The very thought that anyone could ever dream of it merely shows the peculiarly suspicious attitude of the American people. But we know that misunderstandings just like that do arise, and there are a great many people in this country who can not believe that a man has no ulterior motive when he does a fine piece of work like that. But that is being changed very rapidly, and you can be assured that you have the real hearts of the great American people with you in doing just the work you have been doing.

REPRESENTATIVE KENT.

Mr. Chairman, will you excuse the congressional delegation. Under the House rules we convene at 12, and I am sure that, under the circumstances, you will excuse us.

THE PRESIDING OFFICER, STEPHEN T. MATHER.

Certainly. We are very glad to have had you with us.

I want to state that there has been close and hearty cooperation between the Interior Department and the Agricultural Department in various matters involved in our administration of the national parks. We have had the please of cooperating closely in insect control and many other activities special to the Agricultural Department. We have learned to look at these things from the farmers' point of view, and I believe that the Department of Agriclture and the officials who preside over that department have come to look at the national parks from the point of view of our department. Cordial relations between the two departments are maintained with most satisfactory results.

We have the Assistant Secretary of Agriculture with us to-day, Mr. Carl Vrooman, a man whom I have the privilege of calling a personal friend. Secretary Vrooman, if you look at the national parks from the standpoint of the farmer, we are very glad to have a chance to hear you; or if you look upon them as a citizen of the great Republic, we will hear you also from that standpoint.

HON. CARL VROOMAN, ASSISTANT SECRETARY OF AGRICULTURE.

Mr. Chairman, ladies, and gentlemen, this is not the occasion nor am I the proper official to speak about policies with regard to the public parks, but in behalf of the Federal Department of Agriculture which occupies the position of a larger brother to the public parks

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system, it is a pleasure to me to be here this morning and to say a few words of appreciation of the wonderful work that is being carried on with regard to our national parks. There is only one criticism that I could think of in this connection, and that is that Mr. Mather is making the public parks so alluring, he is making the playgrounds of the nation so attractive that I sometimes fear all the boys and girls from the farms will go trooping after him to the playgrounds of the nation instead of working on their farms, as we would like to see them. This is the only menace that the Department of Agriculture sees in the activities of our distinguished chairman.

The advent of the national parks in our Government recalls to my mind a little historic incident which happened so far back in history that no historian has been able to give us an accurate statement as to the date of its occurrence. I refer to the episode which took place in the Garden of Eden—man's first national, or, shall we say, international park or playground? You will remember that there was a time there when the people, the inhabitants of that park, were chased out of it, and told to go and toil in the fields and earn their livings in the sweat of their brows, as farmers. Since that occurred the human race has been a little deficient, has been a little lacking in park and playground facilities. But lately, under the inspiration of the men who have spoken here to-day, and under the wise guidance of our chairman, this great lack of the world, at least so far as our country is concerned, is being filled. We are having new Gardens of Eden established or rather preserved, set aside, developed, beautified. And pardon me if I say that right here is where the Department of Agriculture comes in, for the Department of Agriculture, certainly, as much as any other department of the Government, is going to make it possible for the toiling masses of this country to reap such a golden harvest from their toil that during all the years and centuries to come they will have the wherewithal to take them to these little oases, to these little Gardens of Eden, these public parks and playgrounds, for a breath of God's fresh air and a view of some of God's most wonderful creations. And it is a great thing for this country that we have in charge of these parks men like the Secretary of the Interior and our chairman, who combine the qualities of the executive and the poet, men whose handling of the official details of the management of these parks has been masterly, and yet who have breathed into their work the poetic fancy, the creative imagination, the love of beauty which inspires creative minds, whether they paint or write, whether they chisel marble or work out the destinies of a great institution like our national parks system.

It has been my privilege to travel abroad a great deal in former years—to travel through the Alps and to climb some of them, and to see the scenic beauties of the Old World, and I used to wonder,

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then, as I would meet thousands and tens of thousands of my compatriots, who were over there on the same quest—the quest of beauty—why it was that we did not remain at home and see the wonders of our own land. It has since been my privilege to see some of these American scenic wonders not only in our national parks but elsewhere, and I can tell you that one of the reasons why more people have not seen them in the past is simply because they could not find in this country the same facilities as to transportation and hotel accommodation that they found abroad. We had some of the wonders of the world in this country, but until very recently we have not made those wonders as available as were the wonders of the Old World.

We talk a good deal in the Department of Agriculture about the fertility of the soil not always being available. Well, the beauties of nature in this country in the past have not always been available. But now this great movement for the popularization of our national parks is well under way and is in excellent hands. The scenic beauties of this country are being every day made more and more available, being exploited, in the sense of having their beauties brought to the attention of the entire country, and yet the element of profit is almost entirely eliminated. These parks are being placed at our disposal for our benefit. They are not being exploited for the benefit of a few concessioners or contractors.

Through the agency of our Forest Service, we also in the national forests have some wonders of nature under our care, but our primary effort is economic—to conserve the economic resources of these regions and to protect the watersheds in order to equalize flood and drought. It is true that hand in hand with this economic development we have opened up vast areas where men, women, and children can find playgrounds. I think this probably will always continue to be the case. I think that our vast natural forests, which come under the Department of Agriculture, probably for generations to come will also be collateral playgrounds for the people of this country, but we can never hope to develop them in the same way that the national park system is developed.

I expect our forest work, as a recreational feature, always to be subsidiary to the work of the national park system, but we are keenly interested in this phase of activity. We want to cooperate in it to the full extent of our ability. We are going to help the Department of the Interior to work out for this country a park and playground system that will be the marvel of the world.

THE PRESIDING OFFICER, STEPHEN T. MATHER.

We are sure, Mr. Secretary, that it is just such cooperation that will be the most appreciated, and that we can travel along in the

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future as we have in the past, working together for the benefit of these great recreational areas.

I have found that we can get very practical assistance from the Department of Agriculture. This matter that I touched on of insect control is of great importance to us. The training which our park rangers have had from the men of the Bureau of Entomology in the Department of Agriculture has been most important. The same is true of food inspection and the work that is being done through the Biological Survey. Several times we have called in the representatives of the Biological Survey, Dr. Nelson, Dr. Palmer, and others, and have got a great deal of assistance from them. Their particular training in those specialties, with which we of course are not familiar, is invaluable. It is a great advantage to have some sympathetic assistance waiting for us at any time that we want to call for it.

I want to say, in concluding this conference session, that I think a little too much stress has been laid on the personal note by some of my good friends who have spoken before. The work that has been accomplished has not been any one man's work at all. If I have accomplished anything here it has been through those who have worked so faithfully and loyally with me. When I look around here and see the supervisors of the parks, and remember the way that they are doing their work, for a—well, for salaries which are so relatively small that they are hardly to be considered at all—I realize that it is the love of the work that is carrying them on. We have many men with us who are doing the whole work of the management of parks who have commanded, and can command, much larger sums outside the Government than they are receiving from us; their work is a contribution to America which can not be minimized. They have a love of the work, a love of the service, and that is what counts.

And the same way with the men who work with me here in Washington. They are the men who have borne the burden and the heat of the day. I see here Robert B. Marshall, who in his work in the Geological Survey has given us such splendid assistance during the past two years. I speak of two years, because that is the time that I have been in touch with him in this work in the Department of the Interior, although his work preceded mine and I hope will go on for many years to come. We would not have had the development that we have had in Yellowstone motorization if it had not been for the plans that he had laid when I first began the work here; and the able men that we have in charge of several of the national parks have been of his selection.

But I want to say, too, that loyalty of interest comes also from the concessioners in the parks just as much as from the men who are the employees of Uncle Sam. I have seen an interest shown in the

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Yellowstone Park in the last few weeks that has been simply an inspiration to me; and I know it is going on and that as time passes it will increase. It is with them as with our splendid men who have been working here in the department. It is the idea of service to the American people that counts first.

I just want to call your attention before adjourning for the morning to the exhibits which will be held in the galleries of the National Museum. The First Exhibition of National Parks Paintings opens to-night at 8.15, and I want to give a cordial invitation to all of you to attend. We have there paintings which have been brought together from all points in the United States that picture scenes in the national parks; and, while the exhibit will be there for some time, for a month I believe, it will be well to see them to-night, when we shall also have the opportunity to meet Dr. Walcott, Director of the Smithsonian Institution, and Mrs. Walcott, and Secretary and Mrs. Lane. I want to thank personally Dr. Walcott for what he has done for us in giving us the use of this beautiful auditorium and the building itself for the uses of this conference.

I have an announcement which he wishes made in regard to a free and full use of this National Museum.

(The announcement conveyed the invitation of the Regents and the Secretary of the Smithsonian Institution to the Exhibition of National Parks Paintings and the other exhibits of the National Museum.)

So you will have the chance to see many great paintings here besides this interesting little group which we have brought together.

I now adjourn the conference until 2.15 this afternoon. We shall have some very interesting speakers this afternoon. Mr. Enos Mills is to speak on "The national parks for all the people." Mrs. John D. Sherman, Mr. Huston Thompson, Mr. McFarland, and a number of others also will address the convention.

(Whereupon the opening session of the National Parks Conference was adjourned.)

TUESDAY, JANUARY 2, AFTERNOON SESSION.

SUBJECT, "DEVELOPMENT OF THE NATIONAL PARKS."

The afternoon session was convened at 2.45 o'clock, with Stephen T. Mather, Assistant to the Secretary of the Interior, presiding.

THE PRESIDING OFFICER, MR. MATHER.

Our topic for discussion this afternoon is "The development of the national parks." I have something to say, or will have something to say a little later, on the profit-sharing plans that we are

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endeavoring to work out in the parks. But first I think it will be better to call on the speakers who are scheduled to talk to us.

There has been no more consistent advocate of the national parks idea, the getting of the people out to their great playgrounds, than that apostle of parks, Mr. Enos Mills. Mr. Mills needs no introduction, but I must say a word concerning the help that he has been to our work in the Department of the Interior during the last two years and the personally sympathetic interest that he has taken in bringing the parks to the larger knowledge of the people.

One of the most interesting lines of his work, one perhaps not appreciated as a whole, is his stirring up the leading papers of the country to a realization and to a proper enthusiasm for the parks. He has gone about this in an absolutely unselfish way. He has seen the editors, and, after stirring their interest so that perhaps they would turn to him and say, "Well, let's have a series of articles from you," he would explain that he was not there to sell articles. He had no such ulterior purpose in view; it was simply to awaken the editorial mind to the editorial duty; with the result that perhaps by suggestion he was able to start these editors on the work of securing other writers to exploit the parks. One series in the Saturday Evening Post that possibly did as much as any other publication to bring to the readers of that paper the wonderful possibilities of the parks and to develop a keen interest in them was started in this way. I introduce Mr. Mills to you.

Mr. Enos Mills, of Estes Park, Colo.

THE NATIONAL PARKS FOR ALL THE PEOPLE.

Mr. Chairman, ladies and gentlemen, the Yellowstone was the first national park in the world. There is an inspiring story in connection with the making of this park. Possibly you have heard it. At any rate, in September, 1870, a number of prominent citizens from Helena, Mont., were camping in the Yellowstone wonderland. They had just spent about two weeks in looking over the scenes within. They had gone there for the purpose of doing so, simply because they believed that such a region as they had heard the Yellowstone to be did not exist.

As a matter of fact, it might be well to say right here that the Yellowstone wonderland contained so many peculiar wonders that it was actually discovered and forgotten five times. The original discoverer of the Yellowstone, John Coulter, one of the greatest names in the outdoor world, when he told of the story of the discovery of Yellowstone Park, he was laughed at and ridiculed so much that he vanished and died, as he felt, in disgrace. Yet the Yellowstone wonderland existed. These prominent Montana men had gone, and

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they had found the Yellowstone, had found it greater than the wildest, strangest stories that had ever been told concerning it. But they were just ready to leave this wonderland. They had seen the marvelous canyon and the white waterfall that went plunging over into it. They had seen the petrified forests, the greatest geological wonder of the world. They had seen those strange, poetic geysers. They had seen all of those things. But this night they were camping near the geysers, and a number of the men were discussing as to how they might obtain control of the Yellowstone wonderland that they might exploit it and make a fortune out of it—a perfectly natural thing for the American business man to think of. But there was one man, a statesman, who sat by the camp fire for a time and said nothing. Finally—and I hope you will tell your children of this man—Cornelius Hodges rose to his feet.

"Boys," he said, "you are on the wrong track. The Government owns this wonderland, and it ought forever to own it. This region ought to become a national park for the benefit and welfare of all mankind."

His idea prevailed. He was so enthusiastic that a number of men in the party caught his enthusiasm. A campaign was waged, and as a result, on the 1st day of March, 1872, the first national park in the world came into existence. Heretofore the beautiful places, the scenic lands, had been set aside for the favored few, but this is one of the great things concerning a national park or for any park, it is made and it is developed for the general welfare.

In considering any welfare work, a park must ever be considered. But a park, especially a national park, is something utterly separate from welfare work, because the national park belongs to the people themselves. In other words, it is a park of the people, for the people, and by the people. It won't be the same as erecting great libraries and that sort of thing for the benefit of the people. These parks are something that people are caring for for themselves. Why do we want them? I believe you will agree with me that it has become a public function to look after the recreation facilities of the public. There is no other way in which they are likely to be looked after in a correct manner.

Everyone needs to play, and to play out of doors. And outdoor play never fails to help all that is good. If you want to further people's health or their inefficiency, or expand their ideals, give them a chance to meet their fellow people out under the open sky in some magnificent scene.

If park life will promote health and prevent sickness, isn't it far better to urge parks than it is to build so many hospitals? Isn't it better to prevent disease than to cure it?

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It is a known fact, as is shown by pioneer people and the children of pioneers, that nature is a marvelous educational stimulus. If this be true, and it certainly is emphatically true, why not give the children of the country the opportunity to enjoy park life, and especially the national parks? In the national parks you will find some of the greatest wonders of the world, wonders not elsewhere to be found. Hence, these parks might be used educationally, and thus we might cut down the list of those things that are hurtful to humanity, and we might thereby reach the conclusion that after all one of the greatest things which the public needs is outdoor recreation. This being true, we certainly need parks, and then more parks.

As the Secretary of the Interior said to you this morning, "The Nation is calling for volunteers to the Army and to the Navy and to do other things." Yet he stated emphatically before you that volunteers to help further the work of creating and developing national parks is one of the greatest needs of this Nation or any nation. It is something, as I have just said, and I repeat, that reaches all people and helps the interests. It is not a question of what they are going to cost. We can not afford to do without parks.

This afternoon is devoted, as I understand, chiefly to the idea of developing parks. A number of Congressmen addressed the audience here this morning, and a majority really appreciate the great possibilities of parks. We ought not to think what they cost, but we must think that we could not afford to do without them. It would not do to try to make the public school pay; it would not do to try to make the public playgrounds pay; well, now, neither would it do to make the national parks or any other park pay. I think we would blunder if we worked along that line.

I would like to say that civilization appears to have reached its highest point at the present moment in the Interstate Park, near New York City. There nearly $13,000,000 have been spent on parks, and that park has been developed with the idea that people want it and need it, and that it is theirs—and there, ladies and gentlemen, there is not a single concession in the Palisades Interstate Park. No individual or company can make a profit out of exploiting the necessary pastimes of their fellowship in the Palisades Interstate Park.

And, Mr. Chairman, I believe you will realize that within a few years the American people will insist that the people must not only own their parks, but they must run them absolutely themselves. Just at present that might be impossible, but we are moving undoubtedly in the right direction.

Well now, I would like, and I believe everyone who is interested in parks would like, to see them developed for all the people; that is to say, the rich, the near rich, and the poor. In the Interstate Park

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they make special efforts to find the way to have people transported to the park who can not afford to go there themselves. Now, that is doing real service. If you give people an opportunity to rest in a park, they will save doctor's bills, and they will avoid, perhaps, sickness and that sort of thing. Hence, this preventive measure which you find, you might say, in all parks if they are used is one of the best things that can happen to any people. Hence, let us develop the parks.

Last winter in a brief address Mr. Robert B. Marshall, in speaking of the development of parks, said he thought they should be developed for all the people; that is to say, a hotel in there where a poor man could spend a day without paying any more than it actually costs—a low-priced and a popular-priced hotel; and if anyone wanted to go to a national park to spend $100 a day, by all means let us be ready for him. If we do not give him a chance to spend his money in this country, he will spend it in another country; if we do not give him a chance to spend his money in a park, he will spend his money in the saloon. Let us remember that the park is a competitor against all places of evil, and the majority of people will go to good places if they are provided for them.

And Mr. Marshall also said that the buildings should be attractive, and fit harmoniously into the surroundings; or, as he expressed it, they should not scare the scenery!

Before going further I would like briefly to name some of the parks that I find in wandering over the country. Not one individual in a thousand can name more than four national parks. At present there are really at least 16. I wish there were 16 more. At the head of this list I would like to see the Grand Canyon.

But before naming these parks, just a little outdoor experience which I once had: Once in my rambles in the mountains on a rainy day, I took a refuge in a prospector's tent. The storm was breaking, and the prospector and I stood outside of the tent looking down into the canyon, watching the clouds separate and drift away. Lightning had occasionally struck around us. It was a day of thunder showers. And as we stood there, lightning struck a fir tree close to our tent, and with a terrific report smashed the tree to pieces. I was frightened, but to let my companion think that I was not alarmed, I said to him, "Jerry, why doesn't lightning ever strike twice in the same place?" And Jerry replied, "Gosh, it don't need to!"

Ladies and gentlemen, many nations have fallen, but never for having too many parks or too much scenery—not a single one. So let us have at least ample park room, so if nations must pass away, it will not be because they have failed to have outdoor life.

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A well-known author, some years ago, wrote a story about an experience in London. He said he was the twenty-second one that had bathed in the same water in the family trough of a poor rural family, but that was not half as bad as breathing the same air every day. Therefore, we need outdoor breathing places. These parks afford outdoor breathing places.

As to parks, I briefly touched on the Yellowstone. Then there is the Glacier National Park, one of the largest ones. Perhaps, the greatest area of mountain lakes in the country, about 250 of them, are in this park, and above them rise precipitous high mountains. I will not dwell on its wonders.

Out near Seattle is Mount Rainier National Park, often called the noblest mountain in the West, should be mentioned in this connection. Mount Rainier is a sleeping volcano. It has a heart of fire, but on the outside of it 50 square miles of glacial ice on the top, and on the lower slope a splendid forest, and between these what happens? The most luxurious and grandest wild flower garden in the world.

In Oregon they have the Crater Lake National Park, the crater of an old volcano, about 6 miles in diameter, partly filled with water, which, when seen from the top, appears marvelously strangely blue.

California leads in the number of national parks and it ought to have others. Surely the greater Sequoia National Park ought to be created. In California you have the Lassen Volcanic National Park, the Gen. Grant, the Yosemite, and the Sequoia. And the Sequoia has the grandest and greatest forest in the world. In that forest are trees that are 2,000 years old, many of them more than 20 feet in diameter, trees old in story, many times the age of the oldest nation on earth. The smaller parks I shall not trouble to name. In Colorado there are a couple of parks well worth seeing. In the southwestern part of the State on which rises about 2,000 feet above the surrounding country are the ruins of a prehistoric Indian civilization. There were houses and temples upon the mesa and there were wonderful cliff houses of more than 200 rooms, built of polished stone. No one knows where those people came from, why they lived there, or what had become of them. But there they evidently lived through many centuries and surely they must have been civilized people. The ruins they left behind, at any rate, are suggestive and interesting and even inspiring. And in the Rocky Mountain National Park, in Colorado, you will find the rocks at their best, dotted here and there with lakes and draped with verdant forests.

There are other parks which I have already suggested which I shall not even name to-day; but one of the newer ones, off in the Hawaiian Islands, is another wonderland. So in our national parks

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we have a great variety of wonderland. In some of them there are scenes of the highest type which you can not find elsewhere in the world.

I believe that the development of national parks is about the only advertising that they need. So I think the keynote of the present time should be to get our national parks ready to be seen. People are going to them just as rapidly as people find that they can get accommodations. At the Interstate Park in New York, in speaking of the machinery for handling the crowds, the gentleman who has charge of it the other day said: "The people are coming to that park more rapidly than we can get ready for them." So back of and accompanying all national-park legislation we should bear in mind that people will go to these places if we get them ready for the travelers.

Mr. Charles Sheldon, who has had years of experience in the outdoors, is urging forward the making of a national park in Alaska of Mount McKinley and part of the surrounding region. This is a most worthy project, for the simple reason that one of the great things that it will now accomplish will be the protection of the game. Alaska is being settled; a railroad is close to this park; and in two or three short years the greatest mountain sheep range in the world is likely to be depleted of its sheep unless this is made a park. So I would like to commit that proposition.

The Secretary this morning referred to the fact that volunteers are needed in the national park work. I am not going to commend the work of anyone who has labored in the last few years, but I do want to refer to the work of three men who have rendered national parks splendid service. Mr. Will G. Steel, who now has the dignified title of judge, spent seventeen years, ladies and gentlemen, in working to procure for you and me and future generations the Crater Lake National Park. Seventeen years; think of the man so devoted to a cause that he will give the best years of his life and all the money that he could earn and borrow to create a national park. But he did. And then there still lives in southern California Mr. Stuart, and it was chiefly through the efforts of this one man that we have to-day the Sequoia National Park. But in thinking over the names of those who have been helpful to national parks, and honoring as I do Mr. Cornelius Hedges, who really proposed the first national park, a greater work than that done by all was done by that magnificent man, John Muir.

I really feel that John Muir did more for the human race during the century that just passed in good that will be reaped in the century in which we are now living than any other individual. He wrote the poem of the outdoors; he pointed out its beauties; and the name of John Muir will be forever associated with our national

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parks, with the great glaciers, with the big trees, with sunlight and shadow, with the canyons, with the wildflower gardens, and with every song that nature sings in the wild gardens of the world. To-day I am most thankful, among all the heroes in American history, or of the world, to John Muir. I hope and believe that after the names of all the other heroes of nature are forgotten that John Muir's name will live. He was a man who did not use or carry a cane.

But now, ladies and gentlemen, there are still other places which I feel should be parks, and for fear some people misunderstood me, let me say right here that I am not a Government official, I am not speaking for Government officials, I am not speaking for any organization. I simply represent my own ideas, and in saying what is about to follow, let me say that I simply believe that they represent the general ideas of the people of the United States who have thought concerning national parks, and are—yes, as one of the Congressmen stated this morning, I believe it would be a wise thing for the people of the United States at once to make all of the national parks—to have scenery fit to go into a national park. All this would include places that have already passed into private hands. These scenic places will never get any cheaper or more beautiful than they are to-day. Hence, if they are to be parks, let us urge their creation now. That would be a noble kind of preparedness.

The Government among its 700,000,000 acres of land has a number of scenic areas that might well be made national parks. You know, as well as I do, that much of the attractive quality of national parks or of any scenery is perishable—birds, flowers, etc. Hence, such regions should be at once created, not to-morrow, not next year, but why not do it now? The Government has to maintain its own scenic areas whether they are parks or not; so why not make the subject larger so it will appeal to all the people of the country? Show them what an unrivaled inheritance they have by at once designating the territory that is to become national parks.

There is an interesting Indian legend which substantially is this, that in the closing acts of creation the woman was called into existence and told to do her part. She at once covered the earth with the beautiful, with the flowers, the birds, and the trees. Now, that's the kind of a woman to have at the creation of a world, and that's the kind of women and men we need to-day, who will perpetuate some of its primal beauty. It is being done in national parks; and so the Indians, in their realistic poetic way, saw years ago what Victor Hugo so well stated; that is, that the beautiful is as useful as the useful. If you will stop for a moment and recall this fact that sometime ago the Declaration of Independence was written—now, did you ever stop to think it was written by people who were inti-

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mately in contact with nature; that the Declaration of Independence, after all, was but the spell of the wilderness; and that hundreds upon hundreds of years ago we met on the mountains of Switzerland at the founding of Switzerland, and said amid magnificent scenes: "We will stand each for all and all for each," and then still further some time ago Australia was colonized by convicts who were relegated there by people who were worse than convicts. But Mother Nature took charge of them all; they were among primal scenes, and in a short time those people have become real human beings, and to-day the Australian men and women are second to none in the world. Nature did her part there.

South America is still mostly a primeval wilderness. I look at the great women she is beginning to produce, and she is only just beginning. It all but emphasizes what I said in the beginning of the address that we need parks for their mental stimulus, for their inspiration. We need them for education; we need them that we may have greater men and women.

Scenery is the most profitable resource that we have. Switzerland has grown rich by exploiting its scenery. The year before the breaking out of the war in Europe 500,000 Americans were abroad. They spent on an average of $1,000 a piece, which means they took out of the country $50,000,000. They spent most of this for scenery, and they spent it chiefly because the American scenery was not ready for the traveler. So, if we want Americans to see America, we simply have to think of the development of our parks and get ready for the travelers.

So, for practical business reasons, we may say develop the parks because they will pay, and we can not get along without them. Parks pay dividends in humanity. Within the magic scenes of national and other parks lies the hope of the world.

The Presiding Officer, Mr. Mather.

There was much of interest in the address of Mr. Mills. That thought of his that our parks should be run by the people is particularly interesting. It is something that I have often thought of since beginning the work down here, and I was impressed, as he was, with the development in that wonderful New York State park. I want to tell you now that Mr. Welsh, the chief engineer of that park, who has been at the forefront in all its development, will be down here on Thursday and will be our first speaker that morning; he will tell you how the plans have worked out in that particular park.

I hope the time will come when the Government will conduct all the facilities for the people in the national parks; but that time is probably some years ahead. Congress has not yet been willing to

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give us appropriations for more than the development of the parks themselves; so that, in order to get the parks, to bring the parks into their own by developing their facilities fully, we have had to take the tools at hand or develop tools by stimulating the concessioners already in the parks; we have also had to persuade other concessioners to go in where parks have not yet had a development of that kind.

I think the most interesting development along that line is working out to-day in the Yosemite National Park. A group of public-spirited men of broad vision are working out a most comprehensive set of plans. Already a beautiful hotel has been completed at Glacier Point, the view from which spot is one of the grandest in the world. Several well-appointed camps have been scattered through the back country which has hitherto been inaccessible. The foundation is in for a new hotel on the floor of the valley which possibly will not be finished for another year, but which, when completed, will give comfortable accommodations for all persons. Then, too, most attractive features have been worked out in the valley by this new company, and, as I have said, the people who are behind it in California are taking an interest in it just as largely from a public spirited standpoint, if not more so, than from a business standpoint.

This, we hope, will prove to be the best instance of what can be done on a profit-sharing basis between the Government and the concessioner. The compensation clause of the contract has been worked out on a basis of setting aside from receipts an interest on the investment, and an allowance for depreciation; after that a division of net profits for the first five years on a basis of 25 per cent to the Government and 75 per cent to the concessioner. Thereafter for the balance of the term 50 per cent to the Government and 50 per cent to the concessioner. That means that the profits that accrue to the Government will be spent in further development of the parks.

The plan will give us flexibility; it will give us an opportunity to utilize revenues that develop in the park for the benefit of that park; and possibly, later, if Congress so decrees, for expenditures in other parks, if the receipts are more than are needed for that particular park.

Of course, this profit-sharing plan is an experiment to a certain extent, and the Government has the privilege of falling back on a percentage of the gross receipts in case the profit-sharing plan does not work out effectively; but, with the spirit of cooperation that is being shown by the concessioners in the Yosemite, I have no doubt that it will work out satisfactorily.

Our next speaker will be one concerning whom the words of Mr. Mills might be particularly appropriate, because she is chairman of the conservation department of the General Federation of Women's Clubs, a woman who has taken a very deep interest in the development

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of the national parks and who is bringing a knowledge of them home to fully 2,500,000 women of this country. Her consistent splendid work, carried on through her department of the General Federation of Women's Clubs over a period of years, has been very telling indeed. She has never neglected an opportunity to advance the national park movement, and, being in touch with thousands of women's clubs throughout the country, Mrs. Sherman has been afforded an opportunity to know at first hand the real sentiment of the members of the women's organizations toward the permanent development of the national parks system in the United States. Mrs. Sherman will bring to us this afternoon an interesting portrayal of "Women's part in national parks development." I take pleasure in presenting Mrs. John Dickinson Sherman.

MRS. JOHN DICKINSON SHERMAN, CONSERVATION CHAIRMAN, GENERAL FEDERATION OF WOMEN'S CLUBS.

WOMEN'S PART IN NATIONAL PARKS DEVELOPMENT.

Mr. Chairman and national park friends, the club women in every State in the Union are working for the development of national parks, and the General Federation, with all the united strength of its 2,500,000 women, is working for better conditions for the men, women, and children all over the United States; and in the national parks we see a great opportunity. Through the conservation department of the General Federation these 2,500,000 women urge that more places of natural scenic beauty be set aside for national park purposes, and we also urge that Congress make an adequate national parks appropriation so that the national park service may do its work and get the national parks, the nation's playgrounds, ready for the full use and enjoyment of the people.

Natural scenery is one of the richest of nature's gifts, and it becomes one of the greatest assets of a nation when we use it in giving rest and hope to the toil-worn men and women of this generation and in the developing of our boys and girls into the good citizens of to-morrow.

In my efforts to spread the gospel of natural scenery for park purposes, I endeavored to arouse each of my 49 State chairmen to an active interest in the scenery of her own State. One of these chairmen had plenty of interest, but she showed a painful lack of appreciation when she said to me: "It is not necessary to do anything for the natural scenery in our State, for the scenery here is altogether too magnificent for the hand of man to change." I never did find out what that chairman thought I wanted to do with the magnificent mountain peaks of one of the splendid Western States. But it is necessary to do something if we are going to save and guard the nat-

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ural scenic beauty of the land for ourselves, for our children, and for those who are to come after us.

When I was 8 years old I lived on a farm, and early that summer I remember there was to be a festive occasion of some sort in the village church, where I went to Sunday school, and the children of the community were to have a part in the entertainment. I remember that I felt tremendously important because I had the opportunity to march around the Sunday-school room carrying a little American flag. But the great event of the day to the children was the ice cream that had been promised them. Now, I wish that every one of you, for the moment, would think back to the time when you were 8 years old. You did not have ice cream every day, not if you lived in the country, and don't you remember how eagerly you looked forward to the first dish of the season? Why, you even planned how you would eat it. And how you did hope it would stay hard until the very last mouthful. That is exactly what we children were doing as we sat in the Sunday-school room waiting for the second table. And do you remember, when you were 8, how you felt about waiting for the second table? We were really a very patient little group, but I remember to this day my longing for just one taste of that ice cream as it was carried past me to the grown-up folks. But finally it came our turn. We children all marched up to the table, eager and expectant. And then we were told an awful thing. The ice cream had all been eaten up!

Now, when I see people pulling up wild flowers by the roots, carrying them off by the armful, and killing wild birds for sport and destroying the beauties that nature has given us, just for their own selfish or thoughtless enjoyment, I remember that ice cream, and I am thankful for the national parks.

The General Federation of Women's Clubs is supporting at the present time nine national park projects. I won't take your time to tell about all of these, but in Idaho the club women are particularly energetic. Some years ago they decided that a part of the section of the Sawtooth Mountains ought to be a national park. The men of Idaho did not think much about it one way or the other; so the club women took the initiative and persuaded the State legislature to recommend to Congress that there be a Sawtooth National Park. The State Federation of California has indorsed the project to make the Sequoia National Park sufficiently large to include more of the big trees, and the highest peak in America—Mount Whitney. The club women of Arizona are very eager and very efficient and very earnest, and they have one of the biggest national park projects of them all—the Grand Canyon—and if Congressman Hayden is in the room I would like to have him know, if he does not know it already, that the club women of Arizona have such confidence in him

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that they firmly believe there that he is going to get the Grand Canyon National Park at this session of Congress.

In a number of States where the scenery is not on a national park scale, the club women are working for State parks. In Florida the club women actually own a State park. They own the park and have the deed to a thousand acres of royal palms about 40 miles south of Miami. This is a delightful and interesting tract of land, of scientific interest as well as beautiful, and the club women have recently dedicated it for park purposes to the people of Florida, but it is owned by the State Federation of Women's Clubs.

I see my friend, Mrs. Matthew T. Scott, in the audience. Now, of course, you all know Mrs. Matthew T. Scott, but perhaps you do not know that it was through her untiring efforts that Fort Massey was made a State park in Illinois.

The club women in every State in the Union are getting acquainted with the natural scenic beauties of their own local communities. They are arranging national park programs for their club meetings because the women are fully awake to the human need for more places for play and recreation. With over a hundred million people in the United States at the present time, and the number steadily increasing, the stress and strain of life grows more exacting every year. We are crowded into close living quarters more than ever before, which makes the needs for outdoor recreation all the greater. In the city of New York children are arrested every day for playing in the streets.

But not only do the people in crowded city districts need parks, but people everywhere need the health and the strength and the inspiration that outdoor nature holds in store for them. Nature is the very best friend a man ever had. Frederick Harrison so well tells us that "We live for the most part in a very iron mask of form. Our daily tasks are so joyless, so compulsory, that we must be free and simple sometimes or we break." Our present world is a world of remarkable civilization, and of very superior virtues, but it is not very natural and not very happy. We need yet some snatches of youth, to be for a season simply healthy, simply happy. We need to draw sometimes great drafts of simplicity and beauty. We need sometimes that poetry should not be drummed into our ears, but flashed into our senses. And man, with all his knowledge and all his pride, needs sometimes to know nothing and to feel nothing but that he is a marvelous atom in a marvelous world.

One of the most successful men of affairs in this country once said that he could do 12 months' work in 10 months, but he could not do that amount of work if he worked steadily for 10 months. This is an excellent statement of the value of an annual vacation. Vacations are now, of course, considered essential in the business world

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to sustain efficiency, but the full benefit to a vacation depends upon the manner of occupation during that time. It is estimated that the people of the United States now have over three billions leisure hours every week. Now, these are the hours when habits are formed and when character is in the making. So you see how tremendously important is our leisure time. The problem of leisure time is likely to become as important as the problem of earning a living.

I believe that when people are given the opportunity they will eagerly plan to spend their leisure time in outdoor recreation, where nature is at its best, and when the entire vacation custom of the people is changed from a stultifying period of mere temporary diversion to a time of the great outdoors of nature, where we may gain unnumbered and lasting benefits, then we shall have greater men and greater women.

In the fuller development of national parks we may expect that in the future vacations will be planned with a definite educational purpose in view; that the school year inside of school buildings will be made shorter, and that more time will be spent in an educational way in vacations in the national parks, and that a trip to a national park will be offered as a reward for certain degrees in excellence in the schools instead of the usual school prizes, and that teaching advantages will be provided in the national parks for children and young people, so that they may gain first-hand knowledge under competent guidance of the trees, birds, and wild-animal life and flowers, and of the physiography and geology of the lands. Here in the national parks the children and young people may develop accurate observation, definite thinking and reasoning, mental processes, and here they can also gain that thing which is so essential to human happiness, a wholesome imagination.

The march of settlement was from the East to the West, but it was the West that gave to the people of the United States one of the greatest of all civilizing influences—the national parks; and there is no more important part in our national preparedness than these national parks, where the vision of the people will grow calm and sane and clear.

A country is measured not by population alone, not by wealth, not by power, but by the mental attitude of the people. In such places as national parks you are able to preserve your identity, and there comes to you a sense of kinship and love for all created things.

When we better understand Nature's call, we shall hear her say: "Come and visit me and bring your children; I have beautiful things to show you, and stories to tell that you will never forget. I can show you splendid, silent forests that breathe the message of the centuries, and white, leaping waterfalls, many times higher than Niagara, and a river rushing on between canyon walls a mile high;

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and I can show you glaciers and moraines that tell the story of the ages. Make parks of the most beautiful of my wild scenic places, so you will always know where to find me at my best. Come and get acquainted with me, and I will give you health and strength and inspiration. Let me train your children to see and hear things as they are. I will make your boys and girls efficient, I will give them high ideals, and fit them to be the fathers and the mothers of future noble men and women."

THE PRESIDING OFFICER, MR. MATHER.

Mrs. Sherman, we can be sure that the real interest in national parks would be quickened if we had a number of just such women as you to go about the country and really inspire people as they should be inspired.

I want to make just a little comment on Mrs. Sherman's remarks in regard to the perishable character of some of our scenery. That story she told about the 8-year-old child and its ice cream, and the way the wild flowers and birds can disappear if we do not take care of them, is very true indeed.

Mr. Steel, to whom Mr. Mills referred, who was so long the supervisor of Crater Lake Park, and, as Mr. Harriman put it, "the inventor of Crater Lake," tells a story of the way the flowers disappeared from the rim of that beautiful body of water. When I was there this summer I commented upon the lack of wild flowers around the lake's edge, remarking how poorly the rim compared in that respect with the wonderfully flowered country at the foot of Mount Rainier. He told me the reason. He said that some 25 or 30 years ago, before the park was created, sheep were allowed to feed there, and, as the soil was almost entirely light volcanic ash, they destroyed all the vegetation.

Previous to that time, he said, the country was carpeted beautifully with wild flowers; it was a perfect picture, just as fine as any one of those Alpine valleys of Rainier. In the 25 years that have passed since, those flowers have never come back, and unless some artificial method is used it may be another 50 years or so before they will again be in evidence. I think just a little instance like this is a very good example of the point that Mrs. Sherman makes about the preservation of our scenic spots while we have the opportunity to save them.

It has been a rather happy coincidence that the last two speakers have been from a State that holds two of our national parks, one of them enshrining the wonderful scenery of the Rocky Mountains. Both Mrs. Sherman and Mr. Mills have their homes within the Rocky Mountain National Park. Our next speaker, who is one of the Assistant Attorneys General here in Washington, makes his home in

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Denver when he is not busy with his official duties in Washington or in the country at large. I have pleasure in introducing to you the Hon. Huston Thompson.

HON. HUSTON THOMPSON, ASSISTANT ATTORNEY GENERAL.

THE PUBLIC AND THE NATIONAL PARKS.

Mr. Chairman, ladies and gentlemen, I took a trip with Secretary Mather last summer to Yellowstone Park, in company with several others, and had such a marvelous time that I have been thinking about another trip ever since. A few days ago, when he called me up over the telephone and asked if I would not make a few remarks at this gathering, I demurred, not feeling that I was up to the propositions; and then he said on the 'phone in a most significant way, "Well, you know we are going to take another trip next summer." And I said, "Oh, very well; I will make the remarks." So you know the price he is paying and the fee I am getting, and the Lord only knows how hard you are going to suffer.

I think this is a most fascinating question which we have to discuss. That part of the symposium assigned to me, "The public and our national parks," is unusually appealing. The parks suggest a panorama of peaks, canyons, fleckless skies, illimitable spaces, and lofty altitudes so inspirational that the call to say something becomes irresistible. Some of our good friends in their fullness of local pride may ask, But why go to the national parks for your inspiration? That question might be put with some weight to a Burroughs or a Whitman, but, sad to relate, few of us have their vision. In fact, most of us have but three active senses, and while in modern vernacular we are a six-cylindered machine, we are running on three. The old Persian poet described not only the people of his time but our own when he said: "We are no other than a moving row of magic shadow shapes that come and go." We travel in a moving show whose destination is the great cities of our land. They draw us into their maws, just as the mud geyser of the Yellowstone draws any particle near its lips down into its dragon's mouth with a roar, vomits it up and sucks it back again. So we are caught in the throats of the great cities as they inhale and exhale our man-made civilization. Their noises dull our ears to the still small voice of nature, while man's handiwork blinds our eyes till it is only the shock of great altitudes or the vistas of nature in their most colossal and primeval state that can attune our ears and brush the scales from our eyes.

Some may say, Why not go to the shores of the sea for your inspiration? Our answer is that the seas do not inspire. Since the

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birth of man and down to the present hour the poets have sung about the sea in the minor key until its unanswered question has become a tragedy or a travesty, according as one may feel. The ancients thought the sea contained a monster called Leviathan, who, after a great contest with the Supreme Being, was plunged beneath the waves and kept there only through the power of God. The Hebrew poet describes the sea as "sprung from the womb of chaos." From his day to that of our own Longfellow the sea has been synonymous with sadness. Longfellow, who knew its moods by personal contact and study, in this "Evangeline," speaks of it as the "mournful and mystic Atlantic," and as giving forth disconsolate replies. There must be a psychological reason for such an effect on men's spirits. This probably lies in the fact that when man looks out to sea he continues to look out and out and finally down, while inspirations from time immemorial have come from looking upward. It is this action of looking upward that seems to fill the human soul with joy so that we shout or sing, and it is for this reason that the mountains or great altitudes inspire rather than depress. The greatest declaration of the human or divine soul was delivered from the top of a mountain. Why did not Jesus utter his Sermon on the Mount down by the Sea of Galilee? The answer is that even He saw more clearly on the mountain top. Goethe led Faust through the valleys of life, where he wandered amidst the din and confusion of humanity, and it was not until he stood on the hillside that he heard the voices in song of those for whom it had been made possible to live in pleasant toil.

Zebulon Pike in his diary says that when he and his small band of followers fighting the Indians and struggling along the banks of the Arkansas on the 15th day of November, 1806, first saw Pikes Peak and Cheyenne Mountains they shouted for joy. It is these very mountains that the people are now asking to be included in a national park. When Maj. Long and his party of scientists traversed the South Platte and first beheld Longs Peak and what is now Rocky Mountain National Park, despite their weariness they shouted for joy. Isaiah described the mountains and hills as singing. Job said they bring forth food. David spoke of the mountains as the "pillars of Heaven" and said: "I will lift up mine eyes unto the hills from whence cometh my help." Finally, the "sweet singer of Israel" declared that the mountains bring peace to the people.

There is a deep significance in this. Has it ever occurred to you how infrequently the races of the mountains have been the aggressors in war and have rarely sought the territory of others; yet how when attacked they fought with invincible heroism? We have but to suggest that wonderful little Republic of Switzerland as an evidence

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of this fact. If the mountains have a peaceful effect on the people then at this time in particular it is worth while studying them and finding the reason. I think the answer is, to some extent, embraced in an article in a late number of the Atlantic Monthly entitled, "The still small voice," by John Burroughs. He says in substance that the noise of the falling tree is the thing that attracts our attention, but that the real significant thing is the silent force in nature that has been slowly bringing about the condition that caused the tree to fall; that in our mountains it is not the noises of the moment, such as the thunder of the storm or the roar of the tornado, but the silent forces eroding the peaks or the imperceptible action of the great glaciers that are the really great forces. The writer fears that in our present great world catastrophe and in our political life we may hear and see only the external patent things, the momentary clamor of the passing event or the voice of the political demagogue; whereas we must catch the sound of the still small voice if we would hold our spiritual and political equilibrium.

Just as Burroughs is impelled to borrow his similes on this subject from the mountains, so are those that live in them, in a more unconscious degree, impressed with the clearer judgment of man's relations in life. And if even from the days of the ancient Israelite to "live and let live" in peace be the story they tell to those dwelling or sojourning among them and we can absorb this lesson, then will we store up our national strength, and it will be used only against the invader and will not be dissipated in aggression. Looking at our parks and their mountains in this light we shall see that they mean something more to our nation than mere playgrounds. We shall have a desire to visit them and become saturated with their atmosphere. Then shall they be to us what they ought to be—stabilizers of our national life—and with our national life leavened by this desire for peace rather than for aggression not only in respect to territory, but in our commercial life, we shall as a nation have no fear of what our position may be in the international world.

But what of the effect of the mountains and parks on the individual? They will open the eyes of youth to the truth. Turgeniev in one of his books describes a youth looking out on a great vista, his soul moved with an intense longing. The writer adds that the youth will find his answer when he looks at this scene through the eyes of his mate. This is the wholesome lesson that our mountains will teach our youth. What a restorative they will be to the man of 50 who has been pyramiding success upon success and is suddenly bowled over by his first great failure. This is, undoubtedly, the most momentous period in man's life. We are told that 95 per cent of our kind, instead of rising above the failure of this time lose their grip and

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go down. The man in this frame of mind will be lifted above his futile aims for fame or gain and there will come a new vision of the verities of life that will bring peace to his soul. Finally, what a glorious call to old age. To those who fear the crossing of the Great Divide there is here an object lesson in the beauties of the other side, so enchanting as to drive away all its fears.

It is along this line of thought that I have tried to fashion the following lines to our national parks:

I sigh for your peaks, your canyons and trees,
Where the rain, the sun, the mist, and the breeze
Slowly fashion God's dreams with infinite grace,
Forever unconscious of man's fevered pace.

Your vistas are not like those by the sea,
Where questions unanswered roll back from the lee;
No sphinx's riddle you leave in the soul,
But joyously point each heart to its goal.

You unveil to youth in his questioning state
The answer which lies in the soul of his mate;
While trembling fifty, once swollen with fame,
Beholding your verities recovers his aim.

You call old age from life's vale to the peak,
Where, standing above the mists of the weak
And immersed in the beauty of yonder side,
He welcomes the crossing of life's great divide.

O lift up your heads, ye everlasting hills,
And sing of the hope that restores broken wills;
Let our people pause and in receptive moods
Catch this spirit of God that over you broods.

THE PRESIDING OFFICER, MR. MATHER.

You can see it is a privilege to have a man like Mr. Thompson along with you on a trip through that western country; if you can not see with your own eyes, he will help to open them for you. That was my experience with him, and I am very glad to invite him to go on another trip of the same kind with me—but quite selfishly, because I know it will do me more good than it will do him.

I am sorry that we have not with us to-day the next speaker on the program, Mr. J. Horace McFarland, the president of the American Civic Association, who has been at all times a devoted friend of the parks, and who, through his organization, has done so much for the parks movement; a bereavement in his family compelled him to leave for the West, or he certainly would have been here.

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We are going to have as the last speaker to-day Prof. Lowell Jackson Thomas, of Princeton University, who, besides giving us some idea about the development of Mount Rainier, will show us some very interesting pictures and slides which he has brought along for the purpose. But before he speaks I want to say a word to you again, as I did this morning, about the exhibit which will be made, beginning this evening, of the noble painting of scenes in the national parks. The entire upper floor will be open to-night. The Secretary and Regents of the Smithsonian Institution have extended an invitation to the members of our conference to visit the art gallery and exhibits this evening in connection with the exhibition of our national parks paintings. Dr. and Mrs. Walcott, Secretary and Mrs. Lane, and others will be present to receive you, and you will be all welcome. I hope as many of you will come this evening as possible.

To-morrow is to be educational day, and it promises to be very interesting. There are some splendid speakers, and I hope as many of you will attend to-morrow as possible.

The public-spirited men of the Northwest who are interested in Mount Rainier National Park have not been able to attend the conference. They have just completed some very fine new work at Mount Rainier and are justly proud of their accomplishment. I might add a word concerning that Rainier development.

A little over a year ago we completed a contract with citizens of Tacoma and Seattle, who formed a company for the purpose of developing in the public interest the traveling and living facilities of Mount Rainier National Park. Among other things, they have just completed a beautiful hotel in Paradise Valley which will be available for travelers early next summer.

They had to complete this under great handicaps. Until the 1st of August there was nearly 20 feet of snow in this particular part of the park, an unheard-of condition; usually the park is open easily by the 1st of July. But, in spite of these handicaps, with the spirit of their communities behind them, they went ahead with the work and now have this beautiful place ready for you for next year. There they will be able to extend you their hospitality; they are working along broad lines with the idea of making it really comfortable, of giving you excellent accommodations while you are there, and of making the scenery for that reason just that much more enjoyable.

Now, Prof. Lowell Jackson Thomas, of Princeton University, has been asked by the Tacoma and Seattle gentlemen who are behind the development there to tell us something about their enterprise. He is going to speak to us this afternoon. His address and pictures will close the afternoon program.

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Prof. Lowell J. Thomas, of Princeton University.

A TYPICAL DEVELOPMENT AT MOUNT RAINIER.

Mr. Chairman, ladies, and gentlemen, it is indeed a terrific effort for me to try to hold the attention of this audience directly after the famous and inspiring speakers who have addressed you to-day. In listening to the program to-day it has seemed to me that this gathering has been improperly named; instead of the "National Parks Conference," it ought to be called the "National Conference for the Further Preservation of the Widespread Usage of the Superlative Adjectives." I notice that several days hence Mr. Enos Mills is going to speak on the subject, "Perhaps our greatest national park." This afternoon I am going to talk on the topic "Our greatest national park."

On one occasion when I was in Salt Lake City, Utah, Senator Reed Smoot's home town, I was in one of these sight-seeing wagons with a crowd of other innocent tourists, and the loud-voiced, silver-tongued orator in the front of the wagon shouted back to us, "Ladies and gentlemen, on your right we have the third greatest State capitol in the country. The first is the capitol of New York, the second," addressing the 20 or more of us who were there from 10 different States, "is your own State capitol; the third is this one!"

Owing to the fact that our national parks are so grand and so much more sublime than any of the scenic wonders in Europe, it is an absolute impossibility for any of us really to say which one of these is the finest, which is the greatest of all, but if there is any one man who is entitled to pick the one that is the greatest, it certainly is Mr. Enos Mills.

In listening to the speakers this morning, there was one idea I caught that seemed to be particularly important. Secretary Lane stated that, now that we have these great national parks and they are so ably taken care of by the supervisors, the most important work, of course, is to tell the American people about these great parks and to show them the reason why they should be proud of them and why they should all see every one. Out in the lobby, between the door of this auditorium and the outside door, there is a small model of Old Faithful Geyser in the Yellowstone Park; this morning I was standing looking at it and there were two gentlemen near me. This was the conversation that I overheard. The first man said:

"I reckon that 'ere's a model of them geysers out in Yosemite Park in Arizona, ain't it?"

The second man replied, "Naw; them geysers is in Yellowstone Park, Minnesota!"

Of all the parks in America, Rainier is unique because of the fact that this park really is just one great mountain. A few years ago

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it was considered an impossibility to mount to the summit of Mount Rainier.

(Whereupon Prof. Thomas illustrated his remarks by pictures of Mount Rainier, and the report was suspended.)

After showing and explaining many beautiful lantern slides of Mount Rainier, Prof. Thomas spoke of

ALASKA, UNCLE SAM'S FRONTIER WILDERNESS.

Let your imagination carry you 4,000 miles west of New York and 2,000 miles north, to the top of Mount McKinley, where from your observation station 4 miles above the sea you can look out over that great, practically unknown empire in the shadow of the pole—Alaska. This is the land of gold and adventure; the home of the Eskimo, the polar bear, the totem pole, and the walrus; the roof of the world where the pale, spectral rays of the ghost-gleam auroral lights flicker across the sky in their wild, weird, anemic way.

Alaska is where human beings first set foot on the soil of the Western Hemisphere. It was the first home this side of Asia, so ethnologists tell us, of the prehistoric ancestors of the American Indian. This land was of the first to be inhabited by man and is one of the last to be subdued by man.

Wild and wide are my borders, stern as death is my sway,
From my ruthless throne I have ruled alone, for a million years and a day.

Alaska is the home of the grizzly, the moose, the big horn, and the caribou; the land of the malamute and huskie dog; of colossal ice-crowned mountains; of the mightiest glaciers on the planet; where vast ice fields hundreds of feet high and untold miles in length grind and carve their relentless way eternally to the sea, wearing down mountains and mowing through gigantic primeval forests as a cyclone blows down a field of grain; but moving on and on with an irresistible, titanic force, finally to disappear into the North Pacific with a booming roar louder than the cannonading of 72-centimeter guns.

This is the land of Jack London, Rex Beach, and Robert Service; of ever-shifting El Doradoes; the scene of countless wild stampedes to Nome and along the nameless rivers that wind their dreary way through the frozen zone to the Arctic Sea. It is a land of strong men, where weaklings perish on the trail and end their whimperings and misery by crooking a toe in a trigger. Alaska is a land that measures a man, not by the usual artificial standards of society, but by those qualities that distinguish real men—honesty, generosity, patience, and indomitable courage.

Since Alaska was discovered by the Russians, 35 years before the American Revolution, it has been kept "in cold storage." Russia

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greedily looted it of its furs and then, thinking it was time to unload, sold it to Uncle Sam for $7,200,000, half what it cost to build the Brooklyn Bridge or the Woolworth Building.

And during the 50 years the United States has owned the Territory, Alaska has been criminally neglected. Americans have regarded it as a land of mystery and it has taken nearly all of this half century to open the eyes of one-tenth of 1 per cent of the American people to the marvelous wealth of Alaska. The other 99.9 per cent still regard it as next door to the North Pole and a second Greenland—only more so. Governmental red tape had been responsible for the slow development of the Territory. But, in spite of every conceivable handicap, over $600,000,000 in wealth has poured out of Alaska since it came into our possession, enough to build 40 Woolworth Buildings. It could be sold to-day for many billions more in payment for its visible assets. The resources of the region remain practically untouched.

"Until now we have only protected these riches against monopoly and waste, and the most cumbersome departmental machinery has suffered," says Secretary of the Interior Lane. "We have done little more in Alaska than keep a few policemen stationed at closed doors to prevent breaking and entering."

I could give scores of examples illustrative of how governmental red tape has retarded Alaska's growth, but will cite one typical case. A man tried to lease an island in the Gulf of Alaska for a fox farm. For a number of months he corresponded with three departments in Washington in an attempt to get the lease. All three, after keeping up a continuous correspondence, decided that none of them had jurisdiction.

But this red-tape is being eliminated gradually and attention is being focused on Alaska, as a result of the attempt from Washington to unlock the Territory and take it out of cold storage. Next year, the fiftieth anniversary of its purchase, the inhabitants of our northern empire will celebrate the end of Alaska's dark age and the dawn of a new era.

Alaska has had a dramatic and spectacular history. It was discovered by accident in 1741. Russian Cossacks, who had crossed Siberia to the peninsula of Kamchatka several years before, sailed out into the North Pacific in search of the islands that the natives of the Siberian coast said abounded with fur-bearing animals. Vitus Bering, a bold Danish navigator in the service of Peter the Great, and his lieutenant, Chirikof Alexander, were in command of the expedition. Shortly after they set sail a storm came up which separated their two vessels and carried them to different points on the Alaskan coast. Lieut. Chirikof sighted land July 15, 1741, and Bering sighted the St. Elias Range on the southern coast three days

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later. The former put out a long boat with 10 men who went ashore but never returned. A second boat was sent after them and its occupants also disappeared mysteriously. They are supposed to have been clubbed to death by the natives. Chirikof's vessel returned to Asia with the news of the discovery, but Bering was shipwrecked and died of scurvy. The members of his crew who survived the winter got back the following year to the Bay of Avacha where the

Little of a favorable nature can be said for the Russians in connection with an account of the years they occupied Alaska. At first the region was known as Russian-America and was controlled by the Russian-American Fur Co. Central trading posts were established at Sitka, Kodiak, Wrangell, and St. Michael. This company remained in control until 1850, when it collapsed as a result of having looted the Territory until the fur industry began to decline.

Practically the only evidence remaining now of the days when Alaska was a part of the Czar's domain are the Russian churches at Sitka, Unalaska, Kodiak, St. Michael, the Russian Mission on the Lower Yukon, and the half Russian half Aleut people who inhabit the Aleutian Islands.

Fifty years ago this coming 18th day of March Secretary of State Seward signed a treaty whereby Uncle Sam became the owner of Alaska. Since that time it has produced nearly 100 times what it cost and could be sold to-day for billions. But, in spite of the fact, its population is but a trifle larger than it was when we bought the Territory, and its resources remain practically untouched; this as a result of the governmental red tape which has had almost the same effect as quarantining the region and ordering all men to stay away would have had.

During a period of 17 years only one act was passed by our Federal legislative body dealing with Alaska, and that one was of no importance. In 1884 the region was provided with a semi-Territorial form of government. Sitka was made the capital and one court was established to preside over the whole area of 600,000 square miles. To-day there are four judicial districts, Alaska has a full Territorial government, and Alaskans say they see the day in the not far distant future when it will be admitted as either one or more States.

Preliminary to a discussion of Alaska's industries, resources, and future possibilities, let me give you an idea of the size of the Territory, its climate, and present population.

If you were to superimpose Alaska over the United States, Point Barrow, the northernmost tip of the Territory, would be in Canada; the extreme end of the southeastern Alaskan panhandle would be in Florida and the Aleutian Islands would terminate in southern California. Alaska is one-fifth as large as the whole United States.

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Its area is greater than that of Norway, Sweden, Finland, Denmark, England, and Scotland combined. If you were to drop New York or Paris behind some nameless Alaskan mountain on a dark night, finding it would be like finding an apartment house in New York with nothing but a description of the appearance of the house to go by. Take 20 of our Atlantic Coast and Middle Western States and put them in Alaska and still there will be a large enough area left over for a fair-sized State. The Yukon River and its largest tributaries are as long as the distance from New York to Petrograd. Alaskans think no more of traveling a thousand miles through the wilderness than you think of going from New York to Philadelphia or from London to Liverpool. Alaska's coast line is greater in length than the distance around the world. Alaska is 100 times as large as Ireland and 500 times as large as the State of Rhode Island.

Alaska's total white population is less than that of the Yale Bowl on the day of a championship football contest, and is about equal to the number of people in attendance at a world's series baseball game. The entire Scandinavian Peninsula is about two-thirds as large as Alaska and hasn't nearly so equable a climate; its resources are small in comparison, yet its population is 400 times as great as the population of Alaska.

These facts are so amazing that most people refuse to believe them. The only way we can account for the ignorance of the American people concerning Alaska is to excuse it on the ground that the United States itself is such an enormous virgin country we haven't had time to think of any region outside its borders.

The most of Alaska lies north of Labrador and part of it is in the same latitude as Greenland. All the ports of these two barren regions are sealed as tight as a drum by the Frost King during the most of the year, while nearly all the ports of Alaska are open all the year round. The towns along the southern and southeastern seacoast of our northern empire are nearly all north of Valadivostok and Port Arthur. The latter are closed in the winter, while the former are always open. Alaska has the Japan Current to thank for its comparatively mild climate.

I have been north of the Arctic Circle in Alaska when the mercury registered 100° above zero. Sitka, Juneau, Wrangell, Petersburg, Cordova, Ketchikan, and many other Alaskan towns have a milder winter climate than Boston, New York, Chicago, Omaha, or Denver. But, in spite of all this, millions of Americans still regard Alaska as a land of ice and snow, where special thermometers have to be used and where the animals travel backwards to keep from being blinded by the snow.

Alaska has its areas of colossal mountains from which radiate the greatest glaciers in the world, but we would never dream of regard-

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ing Germany, France, Italy, and other countries of Europe as one solid glacier merely because ice fields are found in the Alps. I have observed that when most people think of Alaska, ghastly pictures pass before their mind's eye of hollow-cheeked men dying of scurvy, of prospectors stumbling blindly through an Arctic blizzard or being torn to pieces by starving wolf dogs; or of homeless men, who went North because they were disappointed in love, their faces black with frost bites, jumping from iceberg to iceberg in the Arctic Ocean with a flock of polar bears in pursuit.

The Department of the Interior estimates that Alaska has 100,000 square miles of arable lands. Like many others, I had preconceived notions of Alaska as a cold-storage vault which I got from the big geography we studied at school. It spoke of "Seward's White Elephant" in such glowing terms as the following: "Our country purchased this cold, barren land from Russia. Besides the gold found there it is of interest for two other reasons, for its many glaciers and ice-covered seas." Naturally it was a terrific jolt to me when I first visited the Land of the Midnight Sun and found the weather hotter than in Mexico where I had been just a few weeks before.

This year I met Prof. C. C. Georgeson, Alaska's agricultural expert, in the North and spent several days questioning him concerning the future of the farming industry in the Territory. Prof. Georgeson is in charge of the four experimental stations at Sitka, Rampart, Fairbanks, and Kodiak. He has devoted many years to the study of agricultural problems in Alaska and other northern countries. He is thoroughly familiar with the subject and does not indulge in exaggerations.

Prof. Georgeson pointed out that, broadly speaking, Alaska has two climatic belts, the coast region and the interior. The former has a comparatively mild winter climate, with cool summers and a heavy precipitation, which conditions are due to the moderating influence of the Pacific Ocean.

The interior, on the other hand, has a light precipitation, cold winters, and comparatively warm but short summers. This heavy precipitation along the coast causes a luxuriant vegetation to develop. All forms of hardy garden vegetables thrive, but grains are not grown with any degree of success. In the interior the growth of grasses and grains more nearly approaches that of similar normal crops in the State.

From the standpoint of health, says Alaska's chief agronomist, the climate throughout the Territory is exceptionally favorable. The air is pure and bracing. Nearly all the agricultural land in Alaska is located in the interior along the Yukon, Tanana, Kuskokwim, Susitna, and Copper Rivers. The agricultural area of the Territory is as large as the combined areas of Pennsylvania, Maryland, Dela-

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ware, New Jersey, Connecticut, Massachusetts, Vermont, and New Hampshire, and should be capable of supporting a population nearly equal to that supported by the agricultural products of those States.

Undoubtedly the Matanuska Valley and the region tributary to the projected railway from Seward to Fairbanks will be settled first by reason of the improved transportation facilities. The cost of transportation is one of the great problems for the prospective settler. The fare for an animal taken to the North is about the same as for a person.

"Generally speaking," says Prof. Georgeson, "all the hardy grain crops, most of the cultivated grasses, and all of the cultivated root crops can be grown successively in Alaska. Among the grain crops barley takes first place, oats second, winter rye third, and spring and winter wheat last. Alaska is not a first-class wheat country, and corn can not be grown anywhere in the Territory. The earliest blossoms of buckwheat always have matured at our experimental farms. Red clover has never survived the winters in the interior, but white clover usually gives us a successful crop. We have found a Siberian type of yellow-flowered alfalfa which promises to be of untold value to the Alaskan farmer in the interior. The coast region is preeminently adapted to market gardening and to stock raising and dairying."

The Alaskan farmer gets a large price for his crops. In the interior hay frequently sells for over $100 a ton. One day, after disembarking from a Yukon steamer at Fairbanks, my eye fell on a box of strawberries. I picked up one and ate it. Turning to the proprietor I asked him to give me a dime's worth, to which he replied with a humiliating grin, "Take another one." The smallest coin in circulation, when you get across the coast range, is a 25-cent piece. Even the daily newspapers sell for this price.

The sun shines nearly 24 hours a day during the summer months in the interior of Alaska. This gives crops a splendid opportunity to mature quickly and also has a tendency to cause the populace to cultivate a sort of summer insomnia. For instance, many of the baseball games are played at midnight and "midnight-sun luncheons" are popular events in social circles.

Perhaps the most interesting farms in Alaska to-day are the Government experiment station and Rickett's farm near Fairbanks. Mr. J. W. Neal, the manager of the United States farm, does not travel back and forth from town over ice behind a string of "huskies," but in an automobile, which he runs summer and winter. His farm includes 1,400 acres. The Government set aside this amount in order that all classes of soils and all kinds of exposures could be obtained. The farm is 8 years old. In 1908 when Mr. Neal

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went to Fairbanks there were not over a dozen farms in the Tanana Valley. Now there are more than 100.

He first concentrated his attention on potatoes. Success came immediately when it was discovered that sandy, dry south slopes were suitable for raising this vegetable in Alaska. As soon as the other farmers started to raise potatoes the experimental station turned its attention to the grain problem. They discovered barley and oats to be a sure crop in the Tanana region. When wheat sells for $1.50 in Canada and the United States it sells for $5 per bushel at Fairbanks; oats bring $100 a ton.

All hardy vegetables like cabbage, rhubarb, peas, parsnips, turnips, carrots, radishes, celery, and string beans are raised in the interior. Tomatoes, cucumbers, cantaloupes, and eggplant are grown in hothouses. Many strawberries are also raised in different parts of the Territory and they frequently sell for 25 cents per berry.

Eggs have gone down rapidly in price in recent years. To-day they can be bought in Fairbanks as cheap as $1 or $2.50 a dozen, but in 1908 they sold for $1 apiece. Of course, wages are correspondingly high.

One-sixth of all Alaska is suitable for agricultural purposes, but farming always will be a secondary industry. The future of the Territory depends mainly on the development of its vast mineral resources and the fishing industry. I have referred briefly to farming before discussing mining and fishing because it fits in appropriately with the question of climate.

Alaska has an area of 600,000 square miles or 384,000,000 acres. Uncle Sam bought it from Russia at a cost of a 2-cent postage stamp per acre. For what it costs us to buy a Sunday newspaper the Czar gave us 2½ acres, and many of those acres have yielded over $1,000,000 worth of yellow bullion apiece. From one plot of ground in southeastern Alaska near Juneau, less than a quarter of a section in area, nearly 10 times as much gold as the Territory cost has been taken.

The first gold discovered in Alaska was at Sumdum Bay in 1869. But the first big strike was made at Juneau in 1880. A claim was staked on Douglas Island by a Canadian known as "French Pete." After working it unsuccessfully for a short time he sold it to John Treadwell, a San Francisco mining engineer, for $5. Under his management it became the world's greatest producer of yellow metal; over $60,000,000 in gold has been taken out of this famous Treadwell mine. This year 1,400 men are employed by the company and the output is expected to exceed $4,000,000.

The Treadwell has two competitors in the Juneau quartz belt now. The Alaska-Gastineau, promoted by D. C. Jackling, one of the sensations of the mining world, is one of them. While the Treadwell

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group of mines handles some 6,000 tons of low-grade ore, valued at $2.50 per ton, each day, this new property intends within another year to be sending 10,000 tons of rock through its mills every 24 hours. The Alaska-Gastineau people expect to blast down and run through their mills a mountain containing approximately 25,000,000 tons of gold-bearing rock assaying $1.50 per ton. Back of this mountain are others, and their engineers say they have enough ore available to keep the plant running at top capacity for centuries with an annual output of $5,000,000.

Another corporation, the Alaska-Juneau, is preparing to handle a mountain of ore rising almost perpendicularly from Gastineau Channel within shouting distance of the town of Juneau. The capital of Alaska is the most important town of the Territory. In addition to being in the heart of one of the most richly mineralized regions on the planet, it is a great fishing center.

The eyes of the world were focused on Alaska more during the days of the gold rush to the Klondike in 1897 and 1898, to Nome in 1899 and 1900, and to the Tanana Valley in 1902, than at any other time in the history of the North until the present. The appropriation for the construction of the Trans-Alaskan Railroad by Uncle Sam from Seward to Fairbanks is largely responsible for the present interest, plus the necessity of the American tourist finding some place other than Europe to visit during vacation season.

The stampede to the gold fields of Yukon Territory and Alaska furnishes one of the most dramatic chapters in American history. When the news reached the "outside" of the discovery of gold on a tributary of the Klondike River by George Carmack, Skookum Jim, and Dawson Charlie, mining men, gamblers, adventurers, and men of every calling congregated at Seattle and San Francisco from the four corners of the globe. Over 100,000 argonauts stampeded to the Land of the Midnight Sun between 1897 and 1904. Many fabulous fortunes were made in a few weeks' time. One miner, known as "the Midget Gold King of Hunker Creek," took over a million out of one pocket on his claim. He fell in love with the belle of a Dawson gambling hall, by the name of Kitty Malone. She fell in love with his fortune. When he proposed to her she agreed to marry him provided he gave her her weight in gold. She weighed 140 pounds, so the price he paid was 1,690 ounces of "dust." That night, after the wedding, while her millionaire husband was out celebrating the marriage, Kitty took her sack of gold, boarded a Yukon steamer for St. Michael, and was never heard of again.

Another miner, called the "Fool Swede," was relieved of his poke containing several thousand dollars' worth of gold dust while intoxicated. In return he demanded and received a deed to what was supposed to be a worthless claim on Eldorado Creek. From this

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property he took several millions. To-day he is said to be working in a Pacific coast sawmill for $2.50 per day.

So much for the romance of those wild days when gold was the cheapest article in the interior.

The interesting question now is, how much of the yellow mineral remains in the North. Prospectors have wandered around over various parts of the region from the southeastern panhandle to the islands of the Polar Sea hundreds of miles north of Point Barrow, and large bodies of mineral have been found everywhere. Some of these wanderers find pockets with values so rich that they clean up hundreds of dollars from every pan of gravel. But the ground necessarily must be of fabulous value to enable the individual prospector to make a fortune in the most inaccessible parts of the Territory. I have met prospectors in out-of-the-way regions who were panning, rocking, or sluicing $5,000 or $10,000 worth of gold each year from the sands of the ancient beaches of the auriferous gravels of the gold-bearing creeks of the interior who had spent that amount to pay for their outfits and new expeditions.

Dr. Alfred H. Brooks, Chief of the Geological Survey for Alaska, and other geologists who are familiar with the rock formation and the location of many of the mineral deposits of the Territory, agree that the gold mining which has been done up to the present time is merely a prelude to what remains to be done. It is estimated that a total gold-bearing area of about 10,000 square miles has been partially developed while the gold-bearing zones cover 150,000 to 200,000 square miles, according to various estimates. Not over two-thirds of this great empire of the North has been covered by white men.

The gold output of Alaska this year will total about $16,000,000, nearly the same as last year. The output from placer properties seems to be decreasing while the wealth pouring from quartz mines is increasing rapidly. Nearly 50 dredges are operating in different parts of the Territory. Following the completion of the Trans-Alaskan Railroad I look forward for a revival of placer mining.

Mining men of Alaska have adopted many unique methods, and in every camp of the North you will find the ground worked by a system you never saw before. In the Tanana Valley, near Fairbanks, a great deal of open-cut mining is being done. One day, while engaged in taking a reel of moving pictures on a mining property known as "No. 11 Below on Goldstream," on the edge of Fox City, an important camp 11 miles north of Fairbanks, H. W. Attwood, one of the best known mining men of the interior, gave me his views concerning the future of placer mining in central Alaska. Probably the first gold discovered in the Fairbanks region was panned out of the ground which Mr. Attwood is now working. It was taken out by

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Felix Pedro in 1899. But it was not until 1902 that Pedro made his rich strike on Pedro Creek which caused the Fairbanks stampede. This Corsican prospector took over $2,000,000 in gold dust and nuggets from his claims, but lawyers and "friends" took nearly all of it away from him.

Cleary Creek was the richest creek of them all. Among the others where pay dirt was found are Engineer, Gilmore, and Pedro, which are tributaries of Goldstream, and Vault, Treasure, Dome, and Little Eldorado, which drain into the Tolovano, one of the largest tributaries of the Tanana River on a large slough of which Fairbanks is located. Esther and Fairbanks Creeks, which drain into the Chena, another tributary of the Tanana, also have given up millions in placer gold.

It is the belief of Mr. Attwood and other mining authorities that all these creek beds will be worked over again by dredges after the new railroad is completed, just as the Klondike and its tributaries are being dredged by the Boyles and the Guggenheims to-day. Lower transportation rates, more good wagon roads like those Col. Wild P. Richardson and his associates have constructed in different parts of the North, and a lower wage scale will be necessary before much dredging can be done in this region.

This year again, as in the past, I found miners in demand around Fairbanks. "If we advertise in the newspapers for six men for a week, we can't get them," said Mr. Attwood. "I pay the boys I have working here on my property from $5 to $12 a day, and am always looking for more good workmen."

"There is a great future here for young men," continued the Goldstream mine operator. "This country is just now beginning to open up. There are great areas of low-grade ore all through the interior. For instance, you can pan the Tanana River for 300 miles, from the Shusana River to the confluence of the Yukon and the Tanana, and get colors in every pan. Not only that, but you can dig 50 feet below the surface all through this region and get the same colors all the way down."

This means that practically every foot of ground over an area larger than the State of New Jersey carries gold in quantities that will make it worth while to dredge every inch of it. The formation is the same along the Tanana as along its rich tributaries, says Mr. Attwood, and he has panned the valley for a distance of 200 miles. He has been mining in the north for 20 years, at Latua Bay, Circle City, Dawson, Nome, and Fairbanks. He is not a talkative man and his years of flirting with fortune—first in her graces and then out of them—has made him a conservative.

I believe that what I say about the future of the Tanana Valley can be said for nearly every other part of Alaska. This is the banner

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year in the history of copper mining in Alaska. The value of the copper output looks as though it will be nearly three times as great as the gold production, something unheard of in past years when it never equaled the gold output.

In a recent letter from J. F. Pugh, collector of customs for Alaska, he informed me that in the first 10 months of this year the value of the copper shipped from our "Frontier Wonderland" was nearly twice the value of all the copper mined in Alaska between the days of Russian occupation and last January. Most of the copper mined in Alaska comes either from properties on islands near Ketchikan, in the extreme southeastern part of the Territory, or from Prince William Sound, or the Copper River Basin. The latter region is by far the most important, for it is here that the famous Bonanza and Jumbo mines, tapped by the Copper River & Northwestern Railroad and controlled by the Guggenheims, are found. These are said to be the richest copper properties in the world, and the ore shipped averages 80 per cent pure metal. I recall one chap I met last year at Circle City, who was returning to civilization after four years of prospecting the northern tip of an island known as Banks Land, 800 miles farther north than the Magnetic Pole and a thousand miles across the Arctic Ocean from Herschel Island. He was on his way out to New York where he hoped to raise capital enough to mine a mountain of copper which he said was as rich as the ore from the famous Bonanza mine at Kennicott, Alaska.

I made an 800-mile trip overland through the uninhabited heart of Alaska's interior wilderness this year, fording innumerable glacier streams, fighting mosquitoes by the millions, and living on moose, caribou, and mountain sheep. En route we crossed the massive mountain range which bars the way from the southern coast to the interior. What impressed the members of our party more than anything else outside of the overwhelming grandeur of the scenery were the gigantic mountains of ore. Some of them were so red they looked like massive piles of rusty iron and others were blue with wide streaks of greenstone, which are usually found in conjunction with copper deposits in the north.

In the words of Col. Richardson, head of the Alaskan Road Commission, "The coast of this great undeveloped empire, from its beginning a few miles north of Prince Rupert all the way out to Isanotski Strait, which cuts off the Aleutian Islands from the Alaskan Peninsula, is practically all one mass of mineral, containing such vast wealth that it is beyond the power of the human mind to estimate its value."

Among the other metals found in Alaska besides gold and copper are silver, iron, mercury, lead, antimony, bismuth, tungsten, and

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platinum. Then, of the nonmetallic minerals, are coal, graphite, gypsum, baryte, and marble. The coal fields cover an area of 12,667 square miles, according to the estimate of the United States Geological Survey. The most important deposits are the Bering, Nenana, and Matanuska fields. The former is near Controller Bay and the latter, north of Seward, is being opened up now by Uncle Sam's Alaskan Railroad. The minimum estimate placed on the coal resources of the Territory by experts is 150,000,000,000 tons.

And yet with all this wealth and boundless opportunity the entire population of Alaska is no larger than some of the crowds that attend an automobile sweepstake at New York.

Second in importance comes the fishing industry. Alaska's fisheries have produced nearly $250,000,000 and the capital invested in canneries and fishing boats at present totals over $40,000,000. The shipments of fish from the waters of the Territory during the first nine months of this year amounted to $12,346,844, and the total output for 1916 will be twice as much as it cost us to buy the Territory from the Czar, with several millions to spare. The salmon pack alone this year will approximate 200,000,000 cans. If these were placed end to end they would reach from New York City to Calcutta, India, by way of the Suez Canal.

The Alaskan king, or quinnat salmon, sometimes reaches a weight of 80 pounds. The red, or sockeye, is the most important of the salmon tribe and forms about two-thirds of the canned pack. The caho, or silver, as well as the humpbacked, or pink, and the chum salmon form the cheaper portion of the canned output. A number of the private fishing corporations, as well as the Government, have built large fish hatcheries to offset the great annual drain during the salmon runs.

The codfish banks off the coast of Alaska are the most extensive in the world, and halibut and herring fisheries are increasing in importance. There seems to be no limit to the number of fish in the waters that wash the shores of our northern wonderland. But nevertheless Gov. Strong informed me recently that, in his annual report to Congress this year, he proposes to urge the Government to grant the Alaska Fish Commission a far larger appropriation this year for hatcheries. He has made an extensive study of this great industry and is firmly convinced that there is a danger of the waters off the southeastern coast, from Ketchikan to Juneau, being depleted of their supply of fish. My personal investigations in recent years and the interviews I have had with scores of cannery managers and fishermen confirm Gov. Strong's contention. However, there seems to be no danger of the waters along the coast for 3,000 miles, from Icy Straits to Kotzebue Sound, being fished out for many years. If the Federal Government takes the proper steps to

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conserve the finny inhabitants of Alaskan waters by establishing enough hatcheries, they probably will always remain the foremost fishing grounds of the world.

This year, owing to the high price of all foodstuffs, thousands of cans of humpbacked salmon were packed in the Prince William Sound country. These pink fish sold for $0.65 per dozen a year ago and at that figure the canneries as far north as Prince William Sound could not afford to bother with any salmon except the kings, sockeyes, and silvers. But this year "humpies" are bringing the canning companies $1 per dozen and over. If the price keeps up, undoubtedly twice as many canneries will be in operation in southern and southwestern Alaska two years from now as there are to-day.

During the "humpie" run in Prince William Sound this year I spent a number of days out at the fishing grounds in Port Gravina Bay, 40 miles from the town of Cordova, with Capt. "Jack" Murray, head of the Carlisle Packing Co.'s Alaskan mosquito fleet, "Humpbacked Frank," "Black Nels," "Snagpoint John," "Codfish Pete," and "Shiskey Ole," a typical crowd of northern fishermen.

We were on a salmon tender most of the time making the rounds of the different fishermen, who would toss their catch on board our boat. At the end of each day we would return to the cannery with a cargo of from 60,000 to 100,000 salmon which were then pitched on an endless conveyor belt, which poured them in a steady stream out on the cannery floor. From there they were pitchforked, with a single-pronged "pew," into the iron chink which split, beheaded, finned, and partially cleaned the "silver horde." Then the cleaning process was completed by dexterous orientals working with sharp knives, after which the fish passed through the "1-pound-tall" cutter, where they were automatically further mutilated into chunks suitable in size to fit tall cans that hold 1 pound of salmon. From there they passed into the sanitary filling machine where the fish were fed into the cans.

This whole process goes on with lightninglike rapidity. The cans then flash by in an endless row to the automatic seamers, where they are sealed without the aid of solder, thereby eliminating the ultimate consumer of frequently dining on fish flavored with chunks of poisonous lead. The cans go through the seamer at the rate of 75 per minute. Following this part of the procedure the cans are placed on trays, 3 feet square, and pushed on a small flat car into the retort, where, with the aid of steam under a pressure of 15 pounds per cubic inch, they are cooked for 1 hour and 40 minutes at a temperature of 240° F. After being cooked the cans are passed through a lye wash which removes extraneous matter from the outside of the can, then allowed to cool overnight on the warehouse floor, packed into cases containing 48 cans each, trucked out to the dock to an

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awaiting ocean liner, and sent to Seattle. Three weeks after these fish are caught you can buy them in the grocery department of a New York department store.

This Carlise Cannery at Cordova put up the largest pack this year of any concern between Juneau in southeastern Alaska, and Kings Cover, over a thousand miles out to the westward on the Alaskan Peninsula. But the Fidelgo Island Cannery, near Ketchikan, is the largest in the north.

It costs from $50,000 to $250,000 to build and completely equip a salmon cannery. I know of one company in Alaska that built an establishment in March of this year at the latter figure, and in August before I left the section of the Territory in which it is located they had put up a pack sufficiently large to pay back the entire quarter of a million original outlay, with a 100 per cent profit to boot. This is a staggering statement, and, coming at any other time except now, when such fabulous profits are being made by American munitions factories, it would not be credited as the truth. On the whole, there is no better paying industry in the world than canning salmon, halibut, cod, and herring in Alaska.

The smallest canneries are known as "one liners." This means that the cannery has one iron chink, one filler, one seamer, and one track over which the cans run to the retort. The maximum capacity of a one-line plant is 75 cans per minute. During the busy part of the season a cannery usually runs at least 12 hours a day, and in that time they can turn out over 50,000 cans of salmon. Four-line canneries, like some of the larger ones, have a maximum capacity of about 200,000 cans per day. The length of time consumed for one fish to pass from the tender which brings the cargo to the dock through all the processes involved and into the retort is less than it takes to tell it.

Watching a salmon run is one of the world's greatest sights. The fish come from the depths of the sea in countless millions and fight their way up the shallow streams along the coast to spawn. I was in Valdez, Alaska, this summer when a run of humpbacked salmon came right up the little creek which runs through the heart of the town. They were so thick that if you waded in the creek hundreds of them would be slashing the water into a seething caldron all around you. I stood within 10 feet of them and ground a hundred feet of film with my moving-picture machine, and these 3-foot salmon paid no more attention to me than if I had been photographing them from the moon. The fish were so thick in Valdez Creek this year that the small boys of the town killed scores by throwing rocks at them and knocking them in the heads with clubs.

Fishermen in the North claimed this was one of the poorest years in history for sockeyes, the salmon they depend upon for the prin-

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cipal part of their pack. In the year 1912 Mount Katmai, the Vesuvius of Alaska, suddenly came to life, rattled windows, and knocked pictures off the walls of houses hundreds of miles away from the Alaskan Peninsula where Katmai is located; it sprinkled pulverized lava over land and sea for 400 miles in every direction. This was four years ago. Salmon live just four years. Many Alaskan fish authorities believe the young salmon born in 1912 were killed by the eruption of Katmai and the contamination of the waters. This is how they account for the sockeye failure this year. They say the humpbacks were not affected because they are a hardier fish.

Two of Alaska's most famous pioneers, who are thoroughly familiar with nearly every part of the Territory and every industry in the North, are Col. Richardson, head of the Alaskan Road Commission, and Jack Dalton, who built the far-famed Dalton trail to the interior in the early days. Both of these men are authority for the statement that there are a great many fine fishing sites left along the Alaskan coast and that the price of fish will not decrease.

The fish from the waters of this great wonderland of the North have paid 30 times the original cost of the Territory, and yet Alaska has a total population less than that of Trenton, N. J., and hosts of Americans regard it as a cold, dismal, barren land covered with a layer of ice and with nothing there of any value except a few stray nuggets of gold hidden beneath.

Instead of being the last stronghold of the receding ice cap which covered the entire Northern Hemisphere 100,000 years ago we find it has a better climate than Norway and Sweden, that there is enough tillable soil and grazing land in this last American frontier to support a population of several million people without calling on any other region of the globe, the most of which remains untouched and virgin. Ultimately the mining industry alone undoubtedly will increase Alaska's population by several hundred thousand. And on top of this we discover that its waters abound with more fish than any other part of the sea.

But this is not all. If the above-mentioned vast resources were eliminated completely, still Alaska would be a great empire of infinite value. The day is not far distant when Seattle will be one of the world's great meat-packing centers. To-day scores of long trains roll into the Chicago stockyards daily from all parts of the Middle West, and many of America's greatest fortunes have been made by the beef kings of the world's greatest packing center. A few years hence scores of refrigerator ocean liners will be bucking the waves of Bering Sea and the north Pacific with clocklike regularity, en route from Nome and the St. Michael to Seattle, laden with reindeer carcasses.

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Few realize that an industry is now in its infancy in the bleakest part of Alaska which will attract the attention of American packers before long and cause them to become much more vitally interested in our northern empire than they are to-day.

A few statistics will be sufficient to give you a vision of the future of the reindeer industry. Lapland, on an area of 14,000 square miles, feeds 400,000 reindeer. It is the chief industry of the region. Twenty-six thousand people make their living from the Lapland herds. In the coldest part of Alaska, upon the tundra slopes of the Arctic and sub-Arctic parts of the Territory, from the mouth of the Kuskokwim River, which flows into Bering Sea south of the Yukon, all the way around the coast to Point Barrow and on over to Herschal Island, there is an area much similar in climate to Lapland where, our Government reindeer experts say, there is room for from 10,000,000 to 20,000,000 head of these animals to graze.

At present the law practically gives the Eskimo a monopoly on the reindeer industry. The industry originated in 1891, when Dr. Sheldon Jackson imported 16 head from Siberia for the benefit of Alaskan Eskimos, who were threatened with extermination as a result of the arrival of the white man in northern waters with his modern methods of catching walrus and whales. Later, 1,200 more were imported by the Government. The reindeer propagates rapidly, and the herds on the Seward Peninsula, north of Nome and along Bering Sea and the Arctic Ocean, now include about 50,000 animals.

It is estimated that the reindeer industry has room to expand in northwestern Alaska to the extent of providing a living for 100,000 people in the barrenest part of the Territory. At the present rate of increase there will be more than 1,000,000 reindeer in Alaska within 20 years, and several hundred thousand carcasses will be arriving in Seattle annually. The reindeer lives on moss, grass, and willow sprouts. He forages for himself all seasons of the year and in the winter digs down through the snow and ice to the moss and lichens with his sharp hoofs.

Commercially the reindeer is extremely valuable. The flesh is a delicious food. The tanned skins bring high prices. The hair is used as a filler for the best life-saving apparatus because it is constructed of tiny, water-tight cells filled with air. When the hair swells, an Eskimo wearing a suit of reindeer skins will not drown if his kyak capsizes, throwing him in the water. The skins are also used for bookbinding, gloves, and many other purposes. The hoofs are used for the finest kinds of glue. The blood and contents of the stomach are used for puddings. The intestines supply tallow. The sinew is dried and used for thread. The antlers are valuable for the manufacture of trinkets. The milk is exceptionally thick and rich and the animal is valuable also for transportation purposes.

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There are millions of acres in Alaska that will support large herds. At present the industry is controlled by the Bureau of Education for the benefit of the natives whom it has enriched to the amount of nearly $1,500,000. It is illegal for the natives to sell female deer to the whites. The Bureau of Education is afraid if the whites are permitted to compete with the Eskimo that in a few years the latter will be crowded out. The cost of shipping reindeer from Asia is almost too great to be practical.

Secretary of the Interior Lane says: "The growing belief that the reindeer may become one of Alaska's important industries seems to be too well founded to justify continued monopoly of the deer by the natives," so it is quite likely that the whites will be allowed to take a hand in the building up of the industry within a few years.

One of the most interesting sights in the North is to see the reindeer herds along the lower Yukon and on Nunivak, Stuart, and St. Michael Islands in Bering Sea.

Over $75,000,000 more has been made from the seal skins and pelts of other aquatic and land animals of our northern empire. Owing to the wholesale slaughter of females and pups by poachers, Congress passed an act in 1914 forbidding the killing of fur seals for five years. This period is nearly up and Government authorities say the herds have increased so rapidly that sealing probably will be permitted during 1917. Naturalists for many years believed seals could never be raised in captivity. But a boatswain on the United States revenue cutter *Bear*, who had studied seals for 20 years, accidentally made an important discovery. He found that the tongue of every pup seal was held to the lower gum by a ligament. He broke this ligament and the pup immediately began to eat. Prior to this discovery pups always died from hunger when taken in captivity because they refused to eat.

The other valuable fur-bearing animals of Alaska are beaver and ermine; black, blue, cross, red, silver-gray, and white fox; black, brown, glacier, grizzly, and polar bear; Arctic hare, lynx, martin, mink, muskrat, land and sea otter, reindeer, hair seal, squirrel, wolf, and wolverine.

Fifty miles out from Fairbanks one day I suddenly came upon a small clearing in the wilderness. A log cabin sat off the trail about 100 yards. Near this house was a corral with a tight fence around it 20 feet high. A barb-wire fence surrounded the whole clearing, and above the gate was a sign which read, "Visitors are not wanted here. Stay out! This means you."

Being curious by nature I promptly disobeyed the sign and walked through the gate to the cabin. My courage was buoyed up mainly by an overwhelming thirst and I proposed to have a drink. As I started to lower the bucket into the well the door of the cabin opened

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and out walked the wierdest biped apparition I ever encountered. It was garbed in handmade moosehide muckluks, or boots, bibless overalls held up by one suspender, a gray flannel shirt, and an old soft tan Stetson full of bullet holes which made it look like a sieve. This apparition's face was thin and leathery like an old Navajo Indian. Half-way down the nose stood a pair of huge bone-rimmed spectacles. Under the hat was a woman's hair. I was so surprised I let the well rope slip through my hands and the bucket hit the bottom with a loud splash.

Her mouth opened and the only teeth I could see were two long ones protruding from the upper gums like walrus tusks. She spoke and her voice sounded like the screech of a rusty hinge. If it hadn't been for the fact that the sun had gone down and the clearing was surrounded by tall trees which made a snapshot impossible, I would have photographed this wild woman of the Tanana if it had been my last earthly act.

"Har stranger!" said she. And then before I could reply she continued, "Kinder dry mushin', eh?" I assured her that her deductions as to its being a dry and thirst-provoking perambulation from Fairbanks to her wilderness villa were precisely correct.

She cackled gleefully while I gulped down a quart or two of the ice water from her well.

In response to my questions she informed me that she and "the ole man" were fox farmers and did some prospecting on the side. I immediately understood why they had such an inhospitable sign above their gate. When Aristotle made his famous statement to the effect that "man is a social animal" he certainly failed to take fox farmers into consideration. They are the least gregarious of all the human race.

There is a theory, upheld by most of the people engaged in this industry, which seems to be substantiated more or less by experience, that the mother fox will kill her young when a stranger approaches. This is why they are usually kept in high corrals. I have talked with fox farmers in all parts of Yukon Territory and Alaska and they told me a wide variety of conflicting stories. The fact of the matter is that they are not thoroughly familiar with all the habits of Mr. Reynard as yet. The fox is a shy creature and will have nothing whatever to do with some men who have attempted fox farming, but with others they form fast friends in a short time.

In some parts of the North I found successful fox farms right in the centers of population and in other parts I found all the fox farms isolated. One man has an island all to himself in Prince William Sound, where he and his wife and daughter have been engaged in this interesting industry for 15 years. They are reputed to be worth a large fortune to-day. The blue fox is their specialty.

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This man is a strange character. On one occasion when he sailed over to Cordova in his power boat for supplies, another old timer asked him why he ever got married, especially as he had lived on the island alone for so many years. In answer to the question the old man replied in picturesque language that he had to have some one to help him run the island.

"Anyhow, in the eight years we've been married," he said, "she's only cost me $48, and $35 of that's been for rubber boots."

The profits for a successful fox farmer who specializes in silver-grays is very large and the industry will grow rapidly.

Then on top of all these valuable industries awaiting development there is another enormous proposition. The total area of the forests and woodlands of Alaska is estimated at 156,000 square miles or 100,000,000 acres, more than four times that of the State of Indiana. Forty per cent of that is valueless except for fuel, and another 40 per cent is of little greater value. Twenty per cent, or an area equal to the whole of Massachusetts, is suitable for manufacturing purposes. The Tongass National Forest, which covers the entire southeastern panhandle and the Chugach Reserve, 100 miles wide, extending from along the coast from Mount St. Elias to the Kenai Peninsula, are the most important. All of this wood could be used for pulp in the manufacture of paper.

If all the trees in these two great Alaskan forests were cut down and converted into inch boards there would be enough to build a board walk 1 block wide around the earth by way of the Equator, and another around it by way of the poles. There is enough to pave a road 5 feet wide all the way to the moon. The timber on the forest reserves is sold at public auction.

President Taft, in 1912, appointed a commission, made up of Maj. J. J. Morrow, of the United States Engineering Corps; Dr. Alfred H. Brooks, of the United States Geological Survey; Leonard M. Cox, civil engineer with the United States Navy, and C. M. Ingersoll, consulting engineer of New York, to study Alaska and ascertain whether or not it would be plausible to build a railroad somewhere in the Territory designed to unlock its resources. They made a thorough investigation and as a result, in 1914, President Wilson appointed a commission to make surveys and estimates and submit a report relative to the best route for a railroad from the coast to the interior, after he and Secretary Lane prevailed upon Congress to appropriate $35,000,000 for the construction of a line to Fairbanks.

This railroad is now being built. Thomas Riggs, jr., the member of the commission in charge of the construction work from the interior end of the line, says the country is surprisingly easy for railroad building. The route chosen was from Seward on Resurrection

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Bay to Fairbanks, a distance of 466 miles. A 35-mile branch has been constructed to the Matanuska coal fields and a 5-mile branch to Anchorage. Both Seward and Anchorage are booming. It is not known yet which will be the important town. Five thousand people have stampeded to Anchorage.

The greatest grade encountered along the route of this Trans-Alaskan Railroad is on the Kenai Peninsula between Anchorage and Seward. So far the former has poor harbor facilities while the largest ocean liners can pull up to the Seward wharf. Anchorage expects to have its harbor dredged out, however.

It is expected that the railroad will be completed by 1920. It will open up the Matanuska and Nenana coal fields, the former coal for exportation along the Pacific coast and the latter for use in central Alaska. Fuel bills around Fairbanks should be cut on a proportion of from $160 to $40. Numerous gold camps probably will be opened up on the Kenai Peninsula, along the Susitna Valley, in the Broad Pass country near Mount McKinley, in the Kantishna, Fairbanks, and Tolovana districts. It will also open up the agricultural lands along the Susitna, Matanuska, and Tanana Valleys. Pessimists say the railroad will never pay. That's what pessimists said a few years ago when railroads first penetrated the wild frontier between the Mississippi River and the Pacific Ocean. As Mr. Riggs puts it, "we expect a few lean years, but this road, which adversaries of the measure have termed 'a governmental altruistic experiment,' will result in a commercial success."

No matter whether the railroad pays or not it is money well spent if merely for no other purpose than to draw attention to Alaska and advertise this great empire of boundless wealth and opportunity.

And now I come to the last, and in some respects, Alaska's greatest resource.

Have you seen God in his splendors,
Heard the text that nature renders?
(You'll never hear it in the family pew)
The simple things, the true things, the silent men to do things,
Then listen to the Wild; it's calling you.

They have cradled you in custom, they have primed you with their preaching,
They have stuffed you with convention through and through,
They have put you in a show case, you're a credit to their teaching,
But can't you hear the Wild? It's calling you.

Let us probe the silent placer, let us seek what luck betide us,
Let us journey to a lonely land I know,
There's a whisper on the night wind and a star agleam to guide us,
The Wild is calling, calling—let us go.

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This is the land of colossal ice-crowned mountains, of gigantic glaciers, of fiords rimmed in by ranges of jagged, saw-tooth mountains that make the fiords of Norway fade away in comparison and which make most other mountains of the world look like foothills. This is the land where the red midnight sun doubles back on its track when the year tide is full and where the Great God of Nature passes his invisible paintbrush across the horizon for hours in the broad daylight of midnight, throwing a new masterpiece in brilliant colors across the sky every few minutes as the former picture dissolves out. Nowhere in the world can you see such mountains, such glaciers, such sunsets, and such a wide variety of grandeur.

This sounds like the height of exaggeration. Now permit me to prove that it is merely a faltering, beggerly attempt to describe sights that defy description or reproduction by an artist. Picture in ;your mind, if you can, the grandest mountain valley you have ever seen, running back from the sea with a wall of ice 2 or 3 miles wide, from 200 to 400 feet high, and extending back into the icy mountain range in the distance for from 50 to 100 miles. Then imagine seeing great chunks caving off the face of this ice field as large as an ordinary apartment house and striking the water with a roar-like thunder, the spray leeping a hundred feet into the air and great waves rolling away from the glacier that make an ocean liner, if it approaches too close, tip from side to side as if in a heavy storm. And picture in your mind's eye a bay of deep blue in front of the ice monster, filled with icebergs heading out toward the open ocean to disintegrate as they float south and finally pass back from the Temperate Zone as vapor clouds carried by the winds—to fall again in the form of snow on the mountain peaks back of the glacier, where again they are changed back into ice as a result of pressure of more snow coming down on them. This, in brief, is the history of the never-ending cycle which continues throughout the ages along the Alaskan coast.

On both sides of this glacier, at the foot of high mountains sloping back from the coast to the right and left of the ice face are forests and semitropical Alaskan trees and underbrush interspersed with flowers of every variety, forming a wild symphony of color.

These glaciers far surpass in size any others in the world, and many of them can be approached easily and in perfect safety by the tourist.

Many of the mountains of our northern wonderland appear grander and more collossal than any others in the world because they rise abruptly from the sea; and a far greater mountain mass is visible than, for instance, in the Himalayas where the highest peaks rise from lofty plateaus.

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The glaciers radiating from Mount St. Elias alone cover an area larger than the whole of Switzerland. Many of Alaska's glaciers are alive and constantly breaking off into some river or an arm of the sea while the puny glaciers of the Alps are as dead as the mummy of Rameses.

The trip north 1,000 miles through the "Inside Passage" from Seattle to Skagway is easily the most beautiful ocean voyage in the world. The water is as smooth as glass nearly all the way because the route followed by the palatial steamers bound for Alaska is sheltered by countless small islands. The trip to Skagway and return, by way of Ketchikan, Metlahkatla, Wrangell, Petersburg, Taku Glacier, Douglas, Juneau, Skagway, and Sitka covers a distance of 2,300 miles and can be made in 10 days.

Then, if the traveler wishes to go farther—and he should do so by all means in order to really get a fair idea of the enormity of this mighty land, of its tremendous resources and its colossal scenery—he should go on out through Icy Straights from Skagway, 1,000 miles past Mount St. Elias and Malispina Glacier, to Cordova, Childs Glacier, Valdez, Latouche, Ellamar, Columbia Glacier, Resurrection Bay, Seward, around to Cooks Inlet past the ice-capped volcanoes of the Alaskan Peninsula to Anchorage.

To see still more of the North and view the wonders of the interior, the best plan is to go back along the coast to Skagway, at the head of Lynn Canal, the greatest fiord on the continent, then across the coast range of mountains via the White Pass & Yukon Railroad over the route followed by the gold seekers at the time of the rush to the Klondike. There, at the headwaters of the mighty Yukon River, steamers are waiting to take the traveler on out to Bering Sea, 2,300 miles away, by way of Dawson City, Fort Yukon, which is north of the Arctic Circle, Fairbanks, which is 300 miles up the Tanana River, and past many interesting mining camps, Indian villages, and Eskimo igloos along the lower Yukon before reaching St. Michael Island and the far-famed gold city, Nome.

From Nome ocean liners make the return trip to Seattle by way of the Aleutian Islands in 9 or 10 days. The trip out to southwestern Alaska and back to Seattle again is made in 15 days, while the grand circle tour of all the North, covering a distance of 6,500 miles, requires about 40 days.

In view of the fact that Alaska is such an interesting and fascinating land, is the home of the most colossal scenery on the globe and the land of the midnight sun, it is bound to become a popular point for tourists to travel to in the future as soon as the world finds out that it is not a bleak, forbidding field of ice.

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Alaska is our last great American frontier. It is an empire in the making with boundless resources and scenic wonders that grip you and hold you like a spell.

I hear the tread of pioneers,
Of millions yet to be;
The first low wash of waves where soon
Shall roll a human sea.
The elements of empire here
Are plastic yet and warm,
The chaos of a mighty world
Is rounding into form.

The man who has been able to describe the lure of Alaska and this wonderful North country is Robert W. Service, the poet, who wrote:

THE SPELL OF THE YUKON.

I wanted the gold, and I sought it;
I scrabbled and mucked like a slave.
Was it famine or scurvy—I fought it;
I hurled my youth into a grave.
I wanted the gold, and I got it—
Came out with a fortune last fall,—
Yet somehow life's not what I thought it,
And somehow the gold isn't all.

No! There's the land. (Have you seen it?)
It's the cussedest land that I know,
From the big, dizzy mountains that screen it
To the deep, deathlike valleys below.
Some say God was tired when He made it;
Some say it's a fine land to shun;
Maybe; but there's some as would trade it
For no land on earth—and I'm one.

You come to get rich (damned good reason);
You feel like an exile at first;
You hate it like hell for a season,
Then you are worse than the worst.
It grips you like some kinds of sinning;
It twists you from foe to a friend;
It seems it's been since the beginning;
It seems it will be to the end.

I've stood in some mighty-mouthed hollow
That's plumb-full of hush to the brim;
I've watched the big, husky sun wallow
In crimson and gold and grow dim,
Till the moon set the pearly peaks gleaming,
And the stars tumbled out, neck and crop;
And I've thought that I surely was dreaming,
With the peace of the world piled on top.

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The summer—no sweeter was ever;
The sunshiny woods all athrill;
The grayling aleap in the river,
The bighorn asleep on the hill.
The strong life that never knows harness;
The wilds where the caribou call;
The freshness, the freedom, the farness—
O God! how I'm stuck on it all.

The winter! the brightness that blinds you,
The white land locked tight as a drum,
The cold fear that follows and finds you,
The silence that bludgeons you dumb.
The snows that are older than history,
The woods where the weird shadows slant;
The stillness, the moonlight, the mystery,
I've bade 'em good-by—but I can't.

There's a land where the mountains are nameless,
And the rivers all run God knows where;
There are lives that are erring and aimless,
And deaths that just hang by a hair;
There are hardships that nobody reckons;
There are valleys unpeopled and still;
There's a land—oh, it beckons and beckons,
And I want to go back—and I will.

They're making my money diminish;
I'm sick of the taste of champagne.
Thank God! when I'm skinned to a finish
I'll pike to the Yukon again.
I'll fight—and you bet it's no sham fight;
It's hell!—but I've been there before;
And it's better than this by a damsite—
So me for the Yukon once more.

There's gold, and it's haunting and haunting;
It's luring me on as of old;
Yet it isn't the gold that I'm wanting
So much as just finding the gold.
It's the great, big, broad land 'way up yonder,
It's the forests where silence has lease;
It's the beauty that thrills me with wonder,
It's the stillness that fills me with peace.

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WEDNESDAY, JANUARY 3, MORNING SESSION.

EDUCATIONAL DAY.

The Wednesday morning session was convened at 10 o'clock with Robert Sterling Yard, of the Department of the Interior, presiding. Owing to the inclemency of the weather and the consequent limited attendance, the session was adjourned from the large auditorium to one of the smaller rooms of the New National Museum.

THE PRESIDING OFFICER, MR. YARD.

The deluge of rain has damaged our audience this morning, but it is some satisfaction to know that those who have gathered here are really and truly the faithful.

Yesterday we considered the national parks more from their practical, economic point of view. To-day we have not to do with considerations of the economic future of the parks, which is inevitable, nor with the means to bring about that economic future. What we shall talk about to-day—all day—are the parks and the people. This we have called educational day, because you can not even introduce the subject of national parks and the people without talking about education. One can not touch upon national parks in any fashion without enlarging his field of knowledge, without becoming inspired mentally and spiritually for the work of the world.

When we speak of education in connection with our national parks we mean two things. One is the education of the people to the glories and the magnificence and the uses of their national parks; the other is how the national parks can be used for the education and inspiration of the people.

Let us consider first the question of educating the people in the knowledge of their own national parks possessions. This means, in the common business phrase, publicity.

Yesterday morning I was delighted, and I regret to say surprised, to hear at least two of our distinguished legislators from the Hill, as we call the Halls of Congress, express in most emphatic terms the fact that it is up to Congress to spend money to let the people know about their national parks. Now, this rejoiced and astonished me both because that is exactly what Congress up to this time has seemed not to realize was desirable. In conducting the publicity, or, as we

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prefer to say of so noble a subject, the educational campaign for the national parks, we are merely telling the people what they possess; that is all. It has seemed to me, rightly or wrongly, that the historic attitude of Government has been almost one of opposition to this very plain duty, that millions of dollars a year are spent in all departments of Government in the accumulation of valuable information without adequate appropriations or machinery for reporting it to the people for their use. So, when these gentlemen said what they did yesterday, I took note of it with great pleasure.

The kind of publicity that this cause needs costs money; there is no use dodging the fact. When you speak of a publicity campaign the average business man thinks of a campaign which attempts to get a large amount of material published free in the newspapers to boost along a business or a cause. Well, that isn't our kind. We are not competing with cigarettes, soaps, and political creeds for the free advertising of the press. The cause that we have is one much loftier than most of the causes for which publicity is sought. The Government can not enter into the usual kind of publicity campaign. Ours must stand on loftier grounds. It necessarily costs money.

In the absence of Government appropriations there are only two ways of raising money for a patriotic purpose. One is to appeal to patriotism, the other to appeal to the pocketbook. There is little encouragement in appealing to the patriotism of those who have a great deal of money because, however public-spirited they may be, a thousand causes are appealing to their patriotism every year. Consequently, in the past we have gone to those whose interests might be furthered by our propaganda. We have found them in the transcontinental railroads. The $43,000 which we raised to pay for the National Parks Portfolio was obtained from that source.

So far we have had nothing from Congress for any publicity except the publication of Government pamphlets.

As compared with other nations, we are very far behind the times in this respect. Switzerland found it profitable to spend a million dollars a year in advertising her scenery previous to the war. In these war times British Africa, which is giving up its millions to the war, finds it worth its while to send 25,000 feet of film, largely scenic, to the United States of America for free circulation here; and last summer war-ridden Canada sent a famous lecturer throughout Canada in a private car, with private attendants, private conductor, all expenses paid, attendants paid, with the guarantee that he should not from the time he left New York until he returned to New York, pay 1 cent for film or expenses, the purpose being to advertise Canadian scenery in the United States in competition with our own national parks.

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And we can not buy 10 cents worth of film and have the United States Government pay for it.

During this same war summer a private commercial bureau in this city, whose activities are devoted to the distribution of films of the so-called educational sort, also traveled all over Canada in a private car under similar guaranties. In short, in war as in peace it is Canada's purpose to fill the United States with the advertising of the Canadian Rockies in competition with our national parks.

Now, you will gather from those little illustrations what difficulties and competitions we have in making the facts about national parks known to the American people. Congressman Ferris and Congressman Lenroot showed themselves modern business men when they stated yesterday that it is the duty of this nation to make the facts known to this people. If you can make the facts known to the people, they said, the people will do the rest. So they will. We hope that Congress will adopt the enlightened attitude of these men. We have the machinery, we have the men, we have the enthusiasm, and we have the ability, but we can not buy 10 cents worth of film.

When we started our publicity two years ago we felt certain that the people were ready to know the facts. We were right. The results of our slender efforts have been astonishing. People have just risen to this doctrine all over the country. But it was not a doctrine we were preaching; it was not a sermon; we simply adopted modern methods in distributing facts.

Eventually, of course, we shall win, and for two reasons: First, because the people want the parks and the facts and are ready for both; and second, because we have in the national parks of the United States of America scenery which the whole accessible world of scenery can not match in quality, quantity, and variety.

It is just as cheap to live in our national parks now as the economic conditions, based upon the patronage, will permit; and Mr. Mather's plans look forward to the decrease of living expenses just as rapidly as patronage enough can be brought into these parks to lower public charges. We can do this only by wise business administration; it can be done in no other way. But, mark you, it is necessary to enlarge the patronage in order to reduce the cost per capita. That means advertising. In short, from whatever angle we view national parks progress we get back to the fact that the pressing need of the moment is publicity.

I hope that this conference will develop new ideas for our educational propaganda. While we have been studying publicity; while we have accomplished something in publicity; while publicity is an integral part of all business, and a specially important part of this;

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while propaganda is one of the facts which every business man studies as a matter of course, the particular kind of publicity which necessarily we are confined to because of our entire lack of financial backing makes our problem far different from the ordinary. We want suggestions as to how, under the hampering, the really distressing conditions which I have sketched, we can best carry on this work of educating the people of the United States to know the value of their own possessions.

But how can the national parks educate the people?

Once the publicity kind of education carries well over, once the people or a considerable part of the people are aroused, the parks will make their own publicity. Publicity, therefore, is our intermediate step to the larger educational purposes of the national parks.

The ultimate purpose of the national parks is the education and the inspiration of the people. That also is before this conference to-day; that idea infuses our entire cause from top to bottom.

When Mr. Mather and I were storm bound at the entrance to Glacier National Park last September, we talked about a project which we had discussed frequently before, namely, that the making of the parks a useful educational resource to the people might very greatly be furthered if the universities of this country would take into the parks their classes in geology, biology, and the study of natural life of every sort. I asked, "Who is that tall fellow over there?" The man I asked did not know, but presently Mr. Albright came to me and said, "There is a professor in this hotel who has been taking classes from the University of Minnesota into Yellowstone and Glacier for several years." I said, "Show him to me quick; he's the man I want." And they put me alongside of that tall man I had been asking about. A little later in the morning I am going to introduce you to Prof. Lehnerts. He has become a standard bearer in the cause.

Now, most of us prefer our education sugar-coated. The lesson is inside the coating. We go to our national parks because they are beautiful, because they are magnificent, because they thrill us, because they inspire us, because they fill us with amazement; underneath that coating of pleasure and emotion we find the education.

When I began to study national parks, endeavoring to differentiate one from the other, I found that to understand scenic beauty I had to get down to the geological skeleton, exactly as the artist has first to study anatomy before he can paint the human figure. Geology is the anatomy of scenery. A little later Prof. Ernest Lehnerts will tell you something about this, because he is both a geologist and a lover of scenery. But I have found that wherever we go into any national park the peculiar kind of beauty there found, the beauty

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that makes that particular park individual, that differentiates it from all the others, has its source in geology. Consequently we base all our studies of national parks upon geology as the foundation. I believe that this idea must become the basis of any educational system which aims to make the parks useful to the people of the United States.

Again, I was delighted to receive recently a letter from the professor of history in a large university, who called my attention to the fact that much of our early history was connected with our national parks. Now, in the many other educational phases of our national parks I had not thought of them historically, but I find that our national parks are concerned with many of the most thrilling chapters of our pioneer days. This is still another approach in which, educationally, the parks and the people meet.

Many branches of science can be conveyed through our national parks to the people sugar-coated with supreme beauty. Our national parks are museums, also, nature's own museums. Two years ago I went through Yellowstone in a buggy with Col. Brett. We traveled at hours when the big procession of stages was not in evidence. The first day I counted over 80 deer, and then I gave it up. During that driving trip of five days we encountered wilderness bears seven times—I am not speaking of the "garbage bears" that haunt the hotels, but bears of the wilds.

We were not out more than 5 or 6 miles from Fort Yellowstone when suddenly the colonel drew up his horses with a little laugh. A short distance ahead I saw that an approaching wagon had also stopped. Then I noticed three bears; the mother and two fat cubs were walking leisurely across the road. In the middle of the road all three of them turned around and gazed at us very intently, as animals are wont to do. Then they turned and gazed at the other wagon. Then, without accelerating their pace, they scrambled up the hill, turned, and watched us as our wagons passed. Afterwards—at the time I was so occupied I did not notice it—I exclaimed, "Why, colonel, not one of these four horses ever turned a hair or twitched an ear with excitement"; and they had not.

Now, in New York City and elsewhere, societies, patriotic societies, are taking up the question of keeping the antelope from extinction; but one day during this drive over the Yellowstone I saw four different bands of these animals; in the smaller band, which was quite near by, I counted 16 animals, and the others were considerably larger. I saw many, many elk. They showed no fear; only the antelope kept at a distance; the birds showed no fear. Another day a bull moose—it happened at a period of our political history which made the incident especially interesting—a bull moose bounded out

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of the wilds into the road ahead of us, saw us, turned up the road, and trotted probably 200 yards along the road only a short distance ahead and without accelerating his speed in excess of that at which we ourselves were going.

These incidents illustrate two great facts: They show that wild animals, after long years during which hunting is prohibited, may become unafraid of man; and that it is possible, therefore, to study them at close range and under advantages which can not be secured anywhere else than in our national parks; and not only the larger wild animals, but the smaller wild animals. There also is the extraordinarily beautiful flora of our national parks.

One of the destinies of our national parks, then, is to become the great schoolhouses for nature and science of this American people. I look forward to the time when not only technical university classes will go into our national parks, but general classes as well, when even our public schools will avail of the opportunities they offer.

No man, woman, or child can go into our national parks without becoming a better citizen of the United States and a better patriot. There is something in the glory of the mountain tops that inspires the visitor spiritually; he goes home with a pride in his nation that he never possessed before.

This is only a brief outline of the subject which is before this conference to-day. I have not gathered you together to instruct you, but to be instructed by you. It is my earnest hope that this conference shall produce helpful suggestions and ideas both as to how to educate the people to the knowledge of their parks and as to what we can best do to make the parks educate the people. I have merely suggested our subject. I am here to-day not to give but to receive.

We have a number of very interesting people with us to-day, men and women of accomplishments, of ideals, who are giving the best of their very good brains to great causes in the public good. Although they represent many lines of widely different activity, they all find a common meeting ground in this cause of the national parks. Dr. George D. Pratt, who will speak to us now, is the conservation commissioner of the State of New York because he is the man for the place, and I think we shall hear something from him that will make us think. I present Dr. Pratt.

George D. Pratt, Conservation Commissioner of the State of New York.

ORGANIZED OUT-OF-DOORS.

Mr. Chairman, ladies and gentlemen, it has been my good fortune in years past to travel through a number of the national parks, and

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I want to second all that Mr. Yard has said about the beauty and the educational value of all of these parks. I only wish that all of the Congressmen and the Senators might have been here this morning to hear what he had to say.

It seems a crime that when the people in the Federal Government want to let the people of the United States know what belongs to them, and the advantages that belong to them, they can not do it; that they are hampered by a lack of appropriation.

In the State of New York we had somewhat of the same difficulty, but we finally persuaded the legislature that if we could let the people know what the citizens had it would be a good scheme, and they have given us appropriations to have motion pictures produced, and these are to be shown throughout the State in order that the people of the State may know what is being done for their benefit.

About three weeks ago I received a letter from the presiding officer of this session, in which he said: "I am assigning you a subject of delightful possibilities—'Organized out-of-doors.' Under this head you will have no difficulty in making your subject anything that you wish." It surely is delightful to be given a subject upon which one may say anything, whether it be a dissertation upon landscape gardening or a lecture upon the organization of major-league teams. Fortunately, however, farther along in the same letter, Mr. Yard gave me a more definite hint of what he considered appropriate for this particular meeting. "I am planning educational day," he said, "to present the national parks in two phases, the education of the people in national-park facts and possibilities and the practical use of the national parks as factors in public education."

With the administration of the national parks of the United States I have nothing to do, though I have often spent vacations in them and have a very keen realization of the immense part that they are coming to play in the lives of the people of the country, a part that will assume steadily increasing importance as the people become more fully educated regarding the vacation possibilities which are there afforded. I have, however, a great deal to do with a State park, which in its magnitude, and in the extent to which it is utilized by the people of the country, is in many respects comparable to the national parks which we are here to discuss. State administration of a large park must differ somewhat from national administration. The administration of New York State's great forest preserve and its utilization by the people, is the particular phase of "Organized out-of-doors," about which I wish to speak to you.

New York State owns in its forest preserve 1,814,550 acres of wild forest land and water. This land is located in four different

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parts of the State. By far the larger portion of it is in the Adirondack Mountains, with which many of you are familiar. Another considerable area is in the Catskill Mountains, on the west side of the Hudson River, and within a few hours of New York City. Besides this, the State owns in Lake George over 170 islands, which constitute practically a unit in the distinctive problem of administration and utilization which they present. Forming another unit, entirely separate from any of the others, is the St. Lawrence Reservation, in the northwestern part of the State.

The purpose for maintaining the St. Lawrence Reservation and the islands in Lake George is primarily, and in fact, exclusively, that they may be saved from despoliation and may be made a vacation resort for the people of New York and other States for all time. They are in a country that is preeminently a vacation country. They are not adapted for timber production and their character gives them no value whatever as conservers of water supply. Accordingly their advantage to the State is entirely recreational and æsthetic advantage.

In the Adirondack and Catskill Mountains we find the situation far more complicated. When the forest preserve was established in those two regions the recreational use of the forest was foreseen, and had in fact already assumed a certain amount of importance. The recreational purpose, however, was not the only purpose for setting aside large areas of land in those sections under State ownership and control. Timber cutting upon an extensive scale had been going on for years and the inevitable fire had followed the ax throughout the mountains until it had become clearly evident to thoughtful people that if a forest cover was to be maintained it would be necessary for the State to acquire much of the land and to institute rigorous protective measures. Accordingly, the forest preserve was started in 1885 by legislative action. The constitution of the State, adopted in 1894, laid down the fundamental forest policy for the preserve, which has ever since remained entirely unchanged. This forest policy I shall explain in a few moments.

The forest preserve of the Adirondack and Catskill Mountains is peculiar in that it does not consist of a solid block of land. In fact, quite the contrary is the case. At the time that it was created the State owned many separate and unconnected parcels of land, of larger or smaller area, which had come to it through nonpayment of taxes, or which in some instances had never been alienated from the public domain. These parcels were interspersed everywhere with other blocks of privately owned land.

Two of the chief reasons for the creation of the forest preserve were the protection of the forest for the purpose of a future timber

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supply and the preservation of the forest cover for purposes of water supply and stream control. By an act of the legislature the central portions of the Adirondack and Catskill Mountains were designated as the vital areas for these two purposes, and the boundaries of these sections were fixed by law. The boundaries were located on the first maps by heavy blue lines. The area within the blue lines of the Adirondacks was called the Adirondack Park and the area within the blue lines of the Catskills was called the Catskill Park. Thus, besides the St. Lawrence Reservation and the Lake George islands, we have in New York State the Adirondack Park and the Catskill Park, and in the mountainous and forested region outside of the park lines still other parcels of land belonging to the forest preserve. That there is opportunity for a much closer physical organization of the property is clearly apparent from this general statement.

From time to time the legislature has made appropriations for increasing the area of the forest preserve, and large blocks of land have been acquired in this way. Thus, many gaps have been filled and the State's holdings have been made far more homogeneous and extensive than they were at the time of the creation of the preserve. Even now, however, the large amount of privately held land that is intermixed with State land is responsible for the fact that the State's property is bounded by more than 9,000 miles of property lines. Within the blue lines of the Adirondack Park alone the State owns only 48 per cent of the land that is considered vital for purposes of water supply and stream control.

At the last session of the legislature an act was passed which provided for submitting to the people a proposition for bonding the State in the sum of $10,000,000, for increasing the area of the great State parks. Two million five hundred thousand dollars of this sum is to be used for extending the Palisades Interstate Park, about which I believe you are to hear to-morrow morning, while $7,500,000 is to be used for purchases within the Adirondack and Catskill Parks. It is significant of the interest which people take in forestry matters that this proposition passed by a larger majority than has ever been accorded to any bond issue in the State of New York. With the money that it makes available we shall be able to save from destruction the forest cover upon mountain tops, where it is now threatened by lumbering operations, and to knit together the State's holdings in a way that would never be possible under a system of small piecemeal purchases.

Lumbering operations should continue in the Adirondacks, and it will be the commission's policy to permit them to continue wherever they do not constitute a menace to mountain tops and wherever the character of the lumbering operations is on a scale of con-

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servatism and of scientific forestry that will not mean the complete elimination of the forest cover. It is believed by the commission that the power of purchase will in itself constitute a measure of control over lumbering operations upon private land which can not have other than a beneficial effect upon the territory.

The constitution of the State lays down the fundamental forest policy covering the State land, and this policy is very clearly and directly stated in the following words: "The lands of the State now owned or hereafter acquired, constituting the forest preserve as now fixed by law, shall be forever kept as wild forest lands. They shall not be leased, sold, or exchanged or be taken by any corporation, public or private, nor shall the timber thereon be sold, removed, or destroyed."

Thus lumbering upon these lands is absolutely and forever prohibited until the constitution shall be changed. The lands are required to be kept as wild forest lands. As such they constitute a safeguard for water supply and afford a considerable means of stream control, without any further action on the part of the State than that of protecting them from forest fire. The creation of storage reservoirs at the stream heads, for greater stream control, is permitted by the constitution, but very little in this direction has so far been done.

The use of the State forests for public recreation has steadily grown in importance during the last 20 years, until the administrative problems that this use now presents are among the most interesting and important with which the commission is confronted. This is a change in purpose which has had its parallel in the national forests. In the December number of American Forestry, in an article entitled "Playgrounds in national forests," it was said that "A few years ago most of our citizens who professed interest in the national forests viewed the subject from a purely utilitarian standpoint. Mention a national forest and the discussion invariably turned to questions of lumbering, grazing, and water power. In all such questions the public's attitude was largely impersonal and usually academic. To-day the national forests of the West occupy an entirely different position in the public mind. They have become the property of the people in a sense so genuinely personal that the Forest Service, once the most bitterly assailed bureau of the Government, has become one of the most popular."

The forest preserve of New York State in the last very few years has similarly become the property of the people of the State in a sense that is genuinely personal. This increasing popular interest in the forest preserve was capable of statistical demonstration in 1903, though it had assumed by no means such importance in the public

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mind. In that year the forest, fish, and game commission, to which the conservation commission succeeded, made some investigations regarding investments of capital in the Adirondacks that were not investments in timber land, and regarding the extent to which the woods were then used by vacationists. At that time there were hotel accommodations in the Adirondacks for 130,000 people, and during that year 451,000 persons were accommodated; 140,000 of them remained for more than two weeks, and 79,000 came from without the State. Hotel improvements in 1903, exclusive of land, had cost $16,427,000. Caring for tourists gave employment to 26,400 people, who received $1,130,000 in wages, exclusive of board. During that season the receipts of the hotels canvassed aggregated $8,725,000. These figures, it will be observed, covered only the business of boarding and lodging the summer tourist trade, and would be even more striking had they been made to include transportation and all of the other industries that are inseparably bound up with caring for tourist business.

During the same year, assuming a fair basis for stumpage, the lumber product of privately owned timberland in the Adirondacks was estimated at $3,275,000, while $5,600,000 was expended in wages in connection with the lumber industry.

Since 1903 the vacation business of the forest-preserve counties has increased by leaps and bounds, while ever since 1905 the lumber industry has steadily decreased. While we have no similar figures available for recent years, I believe that it can not be questioned that the vacation business of these regions constitutes fully 75 per cent of the total volume, and that lumbering constitutes probably not more than 20 per cent.

It is apparent, then, that the administration of this great property by the conservation commission must be conducted with full consideration not only of the requirements of the Constituiton, but also of the great part which the forests have come to play in the leisure moments of the people.

I shall not discuss at length the business of protecting the forest preserve and the large areas of privately owned land from fire. This is a business which requires a most careful organization. It is necessary to point out, however, that the presence of so many vacationists very greatly increases the fire hazard, and continual educational work regarding care with fire is of prime importance. This work is constantly carried on from the office of the commission and by rangers in the field, and in the long run touches practically 100 per cent of the hundreds of thousands of people who use the woods. As a by-product of fire protection, however, it is interesting to know that the trails that are kept open to mountain tops, where the commission

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has its observation stations, are traveled each season by fully 50,000 mountain climbers. The mountain observers do a real service in pointing out interesting details in the views from the mountain tops, and many of them besides provide refreshments, and sometimes even lodging, for the climbers. Thus the fire service of the commission makes the mountains far more accessible and enjoyable.

The use that may be permitted of the forest preserve is, as I have pointed out, strictly limited by the constitution. Permanent camps are prohibited, and there can be no leasing of camp sites, such as characterizes the administration of our national parks. This is to be regretted. The leasing of camp sites of limited area and for short periods and the building of modest structures upon them would be an inestimable boon to the people of New York. The reason that this has not been done may possibly be found in the fact that the plain prohibition of the constitution regarding occupancy was for years unenforced. In fact, only two years ago there were approximately 900 cases of such occupancy, ranging from hunters' shacks and fenced-off pastures to hotels. We have fortunately been able to clear nearly all of these up by a rigid enforcement of the constitution, and the few remaining cases are in process of settlement. This had to be the first step toward a rational system of wider use, and we may hope that it will ultimately be followed by the enactment of more liberal provisions.

The constitution, however, does permit temporary use of the preserve to an extent that does not constitute a taking or leasing of the land. Accordingly the conservation commission has adopted regulations for the erection of tents and open camps which are more liberal than any heretofore in force.

One may go anywhere in the forest preserve without permit of any sort, and transient campers may pitch their tents without permit. More permanent camps, those that are to stand for perhaps an entire season, can be erected under permit, either with or without a board floor. It has been found that large numbers of campers wish to leave their board floors from season to season. Under the constitution, to permit them to do so, while they retain title in the board floor, is impossible. This restriction is minimized by providing that board floors that remain in place for more than a single season become the property of the State and are open to the public. The commission, nevertheless, gives preference to the person who erected them, upon application for use the following season.

Another type of structure, more permanent and comfortable, and one that is thoroughly typical of the Adirondacks, is the open camp or lean-to. It is made of logs, or logs and lumber, with a sloping roof, and is open in front to the fire. Its open character necessitates

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only temporary occupancy, in accordance with the constitution. Two classes of these structures are recognized. The first class is intended for the use of travelers. They are located upon main trails and may be occupied for not more than three nights in succession. The other class is for hunting, fishing, and camping purposes and may be erected anywhere except upon main trails. The use of this class of camps by the same party is permitted for reasonable periods, the word "reasonable" being interpreted with some elasticity and solely with the idea of preventing a continuous occupancy of State land to the exclusion of others who have an equal claim upon it. Lean-tos of either class may be erected under permit from the commission, but must bear a notice that they are the property of the State and are open to the public.

The commission endeavors in every way possible to facilitate the use of the forest preserve by vacationists and offers every possible encouragement to guides to take parties into it. In fact, a number of the open camps or lean-tos have been erected by guides at points where it is convenient to take parties. It is understood, however, that the guide receives wages for his personal services only and reimbursement for expenditures, but not a cent for the use of the camps upon State land.

The future of New York State's forest preserve is brighter to-day than at any other time in its history. This is true not only because the commission's organization for fire protection has been made more effective than ever before, not alone because trespass upon State land, the stealing of timber has been eliminated, but true more particularly because every succeeding year sees tens of thousands of additional summer visitors who come in over the railroads and over the new State roads that are being built to reach all vital parts. In the interest and cooperation of these summer visitors the future of the preserve is assured quite as much as is the future of the great national parks.

THE PRESIDING OFFICER, MR. YARD.

I think you all will agree with me that Mr. Pratt holds his *job* by divine right. We can hardly realize how useful and to the point his paper will prove to us as pointing and illustrating the way in the problems that come before us with regard to the national rather than the State parks almost every day of our work. I have mentioned Prof. Lehnerts. When I speak about Prof. Lehnerts I always smile. It is because he got very close into all our hearts up there in Glacier National Park last summer, and because his quality of enthusiasm even matched our own. Prof. Lehnerts had been out all summer when we met in Glacier. That his class has included 40 young ladies

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may or may not indicate that he was desirous, perhaps needful, of getting home for a little rest before starting his strenuous winter work; but when he sized us up he just simply hired another equipment, and turned around and went back again with us. Furthermore, before we got through that trip, Prof. Lehnerts had volunteered to promote the work which he himself is doing in other universities, and his efforts are now making to bring many universities, East and West, to look upon the national parks as schoolrooms. He will tell you about it himself.

PROF. E. M. LEHNERTS, OF THE UNIVERSITY OF MINNESOTA.

UNIVERSITY CLASSES IN THE NATIONAL PARKS.

Mr. Chairman, ladies and gentlemen, the subject "University classes in the national parks" may seem a little bit new to some, and yet I venture to hope that some of you may have had the good fortune in your time to have belonged to a university field class in the West in a national park.

Our Minnesota University work is not the first work that has ever been done of that kind. I had the good fortune to be a member of the geology class in charge of Prof. Saulsbury, of the University of Chicago, 17 years ago, and he took us through a region now called the Glacier National Park. It was under his direction that I first got acquainted with such work and learned of its advantages. Aside from Prof. Saulsbury, of Chicago, Prof. Chamberlain and Prof. Goode have conducted some similar work, and Harvard University has sent out parties under Prof. Davis and others. Columbia sent a party a couple of years ago under Prof. Johnson over an exceedingly successful tour of three or four or five of our national parks; and last year Prof. Saunders, I think it was, of Washington State University, sent a party into Glacier National Park. I believe the University of Texas sends a party into the Yellowstone; and I have no doubt other universities which I do not just now know have sent parties into the parks.

So we are not exactly the pioneers; but perhaps Minnesota might claim that she has done more faithful work along these lines because other universities have not repeated the trips regularly or for long intervals of time.

It would be hard to explain why these universities have not repeated those interesting journeys into the parks. I do believe, however, the reason lies in that conservative school board that Mr. Yard mentioned a few minutes ago. Back of the professor there is a board of regents, and usually they are not at all interested in sending their State classes into far-away territory. In Minnesota it might be that some of the people will feel that I ought to take my classes into

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Minnesota and keep them there—into some of the interesting territory around Lake Superior, perhaps, or into the North among the iron mines, forests, and State parks. The same might be true of the universities of New York State. Having such magnificent scenery of their own, local sentiment might suggest that teachers and students first become acquainted with that which is near at home. Well, of course, there should be a balance, and both fields should be developed.

In our national parks we now have a territory that offers all kinds of problems for study and there are as many problems on a small or on a large scale as one might wish to encounter. The work of water, the work of ice, the work of winds, the work of rock-forming and mineral-forming agencies—all these processes that we study in the classroom in our textbooks on geology are illustrated in the national parks on a magnificent scale.

I believe that the time will come, however, when other universities will send classes into the national parks year after year and study these problems; and my reason for so believing is that the problems are there; that they are exceedingly interesting; that it is easy for university classes to be organized for such interesting work; and that it is easy to handle classes in national parks because provision is made for taking care of them.

Your chairman has suggested that the time may come when we shall have summer schools in the national parks. I am going to think about that pretty seriously, and I would be very glad if my university might be a pioneer in establishing a summer school in one or more of the national parks—eventually have a class in each of the national parks and perhaps a university summer school in one of them.

Columbia University, where I am doing some work just now, has shown considerable interest in our plans; it is willing to cooperate with us. That suggests a good point. If five or six universities could cooperate, they certainly could establish a summer school in not one but several of the parks.

You may ask, perhaps, what the advantages of the summer schools would be in the large. As I said before, it certainly would be an advantage to the students of three kinds: For students who are becoming specialists in geology; for freshmen, sophomores, juniors, and seniors studying elemental geology; and those who merely wish to get the cultural value of geology without afterwards following it as a profession.

Travel has been, in part at least, not as intelligently and as wisely carried on as other investments of time, effort, and money. Many a person travels through the West, or the East, or the North, or the South without a definite aim, and therefore sees little. Indeed, some people see exceedingly little. Now, then, I believe, as an in-

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vestment of time and money, there should be more intelligent direction to travel, and perhaps the university might to some degree assist in this intelligent effort.

I might impose on you for just a moment to tell you what we announce in the University of Minnesota tour circulars. We say that these tours are more than mere sight-seeing excursions; they are educational travel courses, enriched with different and interesting dissertations and studies. They are elaborated courses in which nature herself is the lecturer. And we offer three kinds of courses—the advanced, the elemental, and those which are open to the public. I believe that possibly universities which have tried to offer these courses have presented them only in their university catalogue in about a three-line announcement—"Field courses in Yellowstone Park," for instance—and that is perhaps not enough to awaken in the minds of the reader the advantages which such a course might offer.

I do not know to what extent I ought to impose on your time. The chairman has suggested that I outline to you some of the problems in geology presented by our national parks and perhaps give you a lesson on the anatomy of one of our western parks. Well, that would be a very interesting thing to do, especially if I had brought my lantern slides with me so that you could see the views quickly, with here and there a geologic touch.

I am sure if you stood beside one of the Paint Pots in the Yellowstone, for example, and saw the richly colored clay making its noisy effort to explode, and then exploding in mounds, it would add, perhaps, to your knowledge and interest. You probably know that those richly colored clays were solid rock not more than perhaps five hundred or a thousand years ago. They were lava rock. But lava has a fashion of decaying very fast when steam passes through it, and when the Yellowstone lava, containing considerable iron, turns into clay, it passes through certain stages of color, depending on how much of the iron in the clay has been oxidized. It may be red part of the time, then orange, then gray or light ash. Much of the Yellowstone dust is lava which has decayed largely because of contact with sulphur steam. Perhaps if you stood beside the Grand Canyon of the Colorado and saw the magnificent columns in it and the interesting waterfalls at one end of the canyon it would add just a little bit to know just what that canyon means, how it got there, what the colors stand for, and what that waterfall means in the distance, how long it is going to last, and perhaps how long it has been there.

I have not time, and perhaps you at this moment would not be interested in going into detail, but I would suggest this, that streams

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are of various kinds, and most of them are like Barbary coast pirates. When standing beside the Yellowstone River you might be surprised to know that it is a pirate, and that the beautiful canyon of the waterfall is the result of piracy. Yellowstone Lake drains westward naturally into the Pacific Ocean. But the Missouri River found it easy to work the lava rock into clay. Because of the depth of its valley it was able to tap the Yellowstone waters and suck them down into its present canyon; thus it is that Yellowstone Lake no longer drains into the Pacific.

So, every foot of the way you will want to ask questions, and our university professor might answer many of them. If he undertakes to do work in the national parks it is his business to know that field very thoroughly. So thoroughly should he know it, for example, that even on the ice fields, if there has been a new snowfall, he may guide his party safely in between the crevices, no matter how big they are.

Professors, I believe, are in the main very glad to take classes to the national parks, but they have hesitated because they have not known how easy it was to organize parties. Now, if some of you are in a position to write a professor of geology or of botany, say to him that you would like to have him organize a university class into such a park and watch results. I do not believe we need to send a man around to the universities to say any more than that. He would take that letter to the president of the institution—it would be such a novelty.

I believe I have taken more time than I should right now, but I will conclude by saying that if any of you are further interested in work of this kind, and if I can be of any assistance to you, I shall respond very heartily. You can always reach me by writing to the department of geography, University of Minnesota. But if you forget my name just send a letter to Mr. Yard and he will forward it. He will see that I get it. I thank you very much.

THE PRESIDING OFFICER, MR. YARD.

Prof. Lehnerts has made, and he made it years before any of us were with him, a practical start toward the educational goal, and we are sincerely hoping that there will result from his work a great many university classes of nature study, wild-life study and geology in our national parks.

You have seen a name upon our program this morning which has aroused your interest. I refer to that of Mr. Bestor, president of the Chautauqua Institution; a man who is, in just as full a sense as any man I ever met in my life, a live wire. That I have not called upon him in his place on the program does not mean that you are not going to hear him. It simply means that a telegram announces

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that he will arrive in Washington at 12.35, and we will hear a big and live man on a big and live subject this afternoon instead of this morning.

A young man came to the door just before we began and said: "I am a newspaper man. I want to know whether anything of local interest will take place this morning, because I have to catch an early edition of my paper. What are you going to produce this morning that is local in its application?" "Well," I said, "national parks, I think, are local in the hearts of every rational and every irrational Washingtonian." "Oh," he said, "They are so far away. I want something local. What about this idea of taking all the public-school children to the national parks? Somebody told me that is the department's plan for this summer." "Well," I said, "I am afraid that Congress would not meet that bill."

Nevertheless there is a great deal in getting the public-school children and teachers in touch with national parks. The public-school teachers, as I told you at the beginning of this session, are alive to this movement of ours from Washington, and we are receiving letters and requests for information from all over the country. The public-school children are as alive to this subject as any subject that can be presented.

Now, we are going to hear from Dr. Philander P. Claxton, Commissioner of Education. Dr. Claxton, I suppose, knows public schools and public-school needs and requirements throughout this whole United States better than any other one individual. Dr. Claxton is also enthused with the inspiration of the national parks and their educational value to the public-school children. He has been of very great use to this movement, not only in his sympathy, but in his practical help. I present him.

Philander P. Claxton, United States Commissioner of Education.

PUBLIC SCHOOLS AND THE NATIONAL PARKS.

Mr. Chairman, ladies and gentlemen, I now understand the telephone message which the Chief of the Educational Department said came to me just as we were coming out. It seems that the same reporter, I suppose, wanted to know what I was going to say, and I said that I was sure he could not know until after I had said it, because, unfortunately, I had not had time to write out a paper as I should for an occasion of this kind.

But there are some things that I do want to say and I am very glad simply to be here and by my presence, if in no other way, to give encouragement to the work that Mr. Yard and my friend and

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immediate superior, Mr. Mather, are doing for the national parks of the United States.

Until now we have been a very busy people—for 150 years the busiest people the world ever knew. Within this century and a half we have performed a task unequaled in the history of the world. We have conquered a continent. We have reduced to civilization and to the service of civilization 3,000,000 square miles of territory.

No other migration of races or peoples has equaled that by which scores of millions of people have poured themselves from all the world onto this continent and into the boundaries of the United States. The forests and the prairies, the marshes and the deserts, the mountains and the plains, the haunts of savage beasts and still more savage men have been turned into fields from which the nations are fed, and upon them have been located great cities that rank among the most populous in the world—the home of a throbbing, busy, healthy civilization.

While conquering the continent we have transformed natural resources into actual wealth more rapidly and on a larger scale than has ever been done elsewhere in the world. Migration to this country has been almost wholly of the sons of the poor, as Lowell has sung for us; of the rich and of the aristocracy of the Old World, few have come. Of all the billions of our present wealth it is doubtful if more than one billion has been brought by those who have come to make their homes here. Yet to-day, though we constitute only one-seventeenth of the population of the world we own more than one-third of the wealth of the world and are producing wealth more rapidly than all the rest of the world together. Soon we shall own a good half of the wealth of the world and within a half century should count our wealth in figures larger than those for the whole wealth of the world at the present time, just as within less than 150 years we have accumulated more wealth than had been accumulated by the whole world before the date of the declaration of our independence.

The strenuous work of felling the forests, clearing the fields, breaking the prairies, draining the marshes, bridging the streams, tunneling the mountains, harnessing the water power, exploiting the mines, building the cities, is not yet finished, but we have reached a point where the pressure becomes less. We have homes for our people, our forests are cleared, our prairies are broken, our fields are fenced; to some extent the swamps are drained and to some extent the deserts are reclaimed. Comparatively few good highways are completed, but trails have been broken. Many railroads must yet be built, but the trunk lines are established. Centuries of hard work lie before us, but for the future play may be mingled with our work. We now need to learn how to play and how to use our leisure to good advantage.

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Until now our joy has been in our work and at the end of the day we have found our recreation and pleasure in talking over the work done and in planning the tasks for the morrow. While other peoples have played and worked that they might live, we have lived that we might work, and have made our work our play and have rejoiced in it. Leisure will be dangerous to us unless we learn to use it wisely. We must learn to play simply and sanely, else leisure will mean for us only waste of time; and we shall waste ourselves with our time in harmful dissipation.

Until the beginning of the present war American travel in Europe was large—larger than the European travel from any other country—and was profitable to European hotels and resorts. Americans of wealth paid large prices for their rooms at the hotels; large tips to waiters, porters, and guides; large prices for pictures, sometimes without much regard to their value as works of art. Our own commercial resorts are well patronized and usually prosperous. Our visits to these places have been profitable to the owners of the hotels and to those who hold the many and various concessions, but not always profitable to the visitors.

Possibly it is a realization of all this that has made the entire country respond so readily to the suggestions for the use of our national parks. The magnificent extent of our country, with its wide variety of land and water scenery, offers opportunities unsurpassed for large and beautiful national parks to be used as the playgrounds of the people in immediate and wholesome contact with nature. Such contact with nature and opportunity for vigorous play in the open air and the outdoors are especially needed for those who live in large cities. We have changed from inhabitants of the open country to dwellers of the city more rapidly than any other people of the world. A hundred years ago much more than 90 per cent of the people lived under conditions which we would to-day call rural, and until after the War between the States we were practically a pioneer people with no large cities. To-day about half the people live under urban conditions in cities and towns of 2,500 people or more and the urban portion of our population living in large cities is rapidly increasing. One of our cities is one of the largest of the world, and others must be counted among the large cities of the world. This city life is new to us and to the races to which most of us belong, and we are not yet adjusted to it. Children of pioneers can not immediately change the active life of the frontier to the sedentary life in the city without great strain.

Long ago Edwin Arnold called our attention to the fact that the Anglo-Saxon people are not naturally and by inheritance a city-dwelling people; they have always lived in the open country. The English nobility and aristocracy have their seats in the country;

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they only visit the cities. When the Anglo-Saxon has his roots pulled from the soil and is transplanted to the city he tends to wither and die. True for the race as a whole, this is true also for that part of it which constitutes the dominant element in the population of the United States. We must constantly re-create ourselves by getting back to mother earth and reestablishing, for a time at least, our contact with the elemental forces. It is true for us as a group and true for us individually. If you will pardon a personal allusion, I may illustrate this by my own experience. For 40 years I have been a fairly busy youth and man, with only brief periods for vacation coming at long intervals. In this busy life I have found two effective means of rest and recreation—the reading of great books and close and intimate contact with nature.

There is recreation for the mind and soul in the books of those who have, through the ages, interpreted to man both himself and nature; the books of those who have stood on the mountain tops and caught the glow of the ever dawning new day; of those who, organized a little more finely than most of us, have felt the heart throb and pulse beat of humanity most fully; of those who have been able to chart to some extent the permanent currents of life beneath the waves and ripples of the surface. Recreation comes to body and soul, mind and spirit, as one climbs the mountains and from their tops catches the view of the expanding horizon; as one wanders through the forests and listens to their silences; as one sits by the waterfalls and loses himself in their mists and music; as one stands by the seashore and watches the waves as they lift themselves above the horizon or on the plains in the storm and lets his soul ride on the wings of the wind and bathe itself in the bosom of the clouds through which the lightning flashes.

Out of the forests we came; they have been our home through all the ages. We feel it in our blood and nerves. Like the giant Antæus, our strength oozes away when we are held away from the earth and increases tenfold when we come in vital contact with the soil. When the city man who knows something of nature thinks of having a really good time he plans for a trip to the country. Thoughts of the hardships of primitive methods of living do not deter him if he still has red blood in his veins. You remember, doubtless, Dudley Warner's essay on what some people call fun. It is fun to sleep on the ground with only the sky above you; to drink water from the running brook; to take your coffee hot and black from a tin cup; to burn your hands while frying bacon over a fire of brush. It is the fun of having gotten back home, and there is education and value in it as well.

Teachers, like other people, have need for this kind of recreation—possibly more need than other classes of people—and all teachers have

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vacations. In America vacations are long. A German scholar is reported to have said that the vacation is the chief feature of the American school system. Our annual school term is shorter than that of any other great culture country. Almost all American teachers have four months of vacation, and the average for all is five months. There are, you know, 12 school months in the year; the average school year in our cities is 9 months; for city and country it is 8 months. Most of our teachers have no very profitable way of using these months of vacation. Many, of course, attend summer school or institute for from 1 to 6 weeks. Some who are able to travel abroad. It would be well if more of them could spend some time in the public parks and come there in closer contact with nature and learn something of wild life. For most, this is now impossible because of the expense. The pay of most teachers is small. Their recreation must therefore be inexpensive. The great majority of urban teachers live in the East, east of the Mississippi River. The parks are in the West. Distances are long in this country. Railroad travel is costly even when reduced for the summer season. We should have many more parks than we now have and they should be more widely distributed. More of them should be in the part of the country in which the people live who need them most. There should be many small parks in the Appalachian Mountains and by the sea and along the lakes. There should be several in the uplands of the South. Parks by the sea would offer opportunity to teachers to study the forms and the life both of land and water. With parks more numerous and more evenly distributed, hundreds of classes of both teachers and pupils could be formed for study. There are more than a half million of teachers in the United States. Every year a hundred thousand of these should find their way to the national parks for a period of from a week to two or three months of recreation and study. As a result they would be much better fitted for the regular work of their schools. They would then understand better the open spaces and nature close to them and could make better use of these.

I should be glad to cooperate in any way I can with Mr. Yard and any others to bring about the organization of classes for this purpose. Universities might well assist in establishing and maintaining these study classes. I do not think the suggestion that summer schools be held in the parks is an impracticable one, if costs can be held within reasonable limits.

If parks were more numerous and closer to the people many hundreds of thousands of children could use them for play and study. In this country almost all school work is done within the walls of the schoolroom and consists in learning and reciting lessons assigned in books. In some countries the practice is quite different. If you should be traveling in Germany at any time during the Easter,

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Whitsuntide, summer, or fall vacations, you would meet many groups of children and teachers marching through the country on what they call Schulereisen, or school journeys, traveling and studying for days at a time. Preparation is made for these journeys weeks before they are begun; and much of the instruction of the children will be based on them or illustrated by experiences gained by them for months afterwards. The necessary expenses are very little. Railroads make very low special rates for them. Children and teachers live very simply, stopping at small inns, buying their food at the shops and eating by the wayside. I have very pleasant memories of a week spent 20 years ago with a group of third-grade boys and some teachers who made a trip from Jena to the Thuringian Forest and north Bavarian highlands, visiting old castles, convents, mines, quarries, and quaint old villages; tramping through mountain forests and across the fields, frequently singing as we went; stopping at little inns; eating black bread and sausage and drinking dark or light beer—the beverage of the country. We were warned against drinking water; water might be polluted—beer, never.

The total cost to the children for the week's outing was, I believe, $4.50 each, of which the children were expected to pay $1.50. We were out a full week and traveled several hundred miles. When we returned the children had spent a vacation week very delightfully and had gathered the material for many most valuable lessons in the following months. This group of boys of 9 to 11 years old had in previous years been on many such trips in different directions from their homes and had thus gained more or less detailed first-hand knowledge of a good part of their country.

Our country does not lend itself to work of this kind for school children as Germany does. Distances in this country are long; roads are frequently not good and there is more uniformity than in European countries. National and State parks, if more numerous, would make such outings more easy and more profitable.

As it is, most of our people, including, of course, the children in the schools, live far away from any national park; but all help to support the parks by their taxes. They should at least, therefore, be told about them and have opportunity to see good maps and pictures of them and of the places of beauty and interest in them. The best place—and in many communities the only place—where information in regard to the parks can be given effectively is in the schools. There is no other place than the public schools where all the people can be brought together. All children are in school at the age when descriptions and pictures, especially of the unusual and wonderful, appeal to them. High school students can study them carefully. Older people of the school community can come together at the schoolhouse for lectures and stereopicon illustrations.

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These lectures might well be given by teachers or local people who have themselves visited the parks. People are always more interested in hearing one tell what he has himself seen or experienced than in hearing those who have their knowledge only at second hand.

There should be on deposit at some place—preferably at Washington—large collections of stereopticon views of the parks and their most beautiful and wonderful features. Of all the more important views there should be many sets. These should be sent upon request for the use of any school and at no cost except for transportation. This would make a very effective kind of park extension service. I should be glad to have the Bureau of Education cooperate in this with the Office of National Parks. Pictures and maps should be sent free of charge or at a nominal cost to all public and private schools asking for them. It would cost comparatively little in this way to give to to all school children and to most older men and women fairly adequate information about these places which are the common property of all the people but which most of them may never visit.

As I said in the beginning, we as a people have worked hard and persistently. We have made homes for ourselves and our children. We have accumulated wealth. We have earned at least some degree of leisure; some surcease from toil has become possible for many of us. We must learn to use this leisure aright or it may prove our undoing. There is no good, no final or absolute good, except the human good. All our lands and bonds and material wealth of whatever kind, if they are to have any real and final value, must be transmuted into human intelligence and human joy of the best kind. The national parks and their right use will aid in this. To bring the people to the parks and the fullest and best possible information about the parks to the people is a work well worth doing. The results can only be good.

The Presiding Officer, Mr. Yard.

We owe to Dr. Claxton a substantial vote of thanks for that speech, which is full of suggestion. There were two or three invaluable ideas there which we shall take up with Dr. Claxton later on for advice. The idea of getting the public school children into the national parks to me has been a dream. I have never supposed or considered it a serious possibility at this time nor perhaps for long years to come. Other of his suggestions will help us on our way.

There has just come into the room the president of the association that bore the brunt of the battle for the creation of the National Park Service. Mr. McFarland was due to speak yesterday upon the subject of the "Economic destiny of the national parks." I had asked him to say something about his own association in connection with the national-park work, because it had been a very

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important and valuable factor in placing this movement where it is. He was in the field long before Mr. Mather was in the field, and he has had the tilling of the soil for the park harvest which is now beginning to flourish in the souls of this people. Mr. McFarland, who has been in a sense a public teacher for many years, will also, I have no doubt, contribute something to the special nature of this session of the conference, which deals with the problems, Mr. McFarland, first of getting before the people the news of their heritage of scenery; and, secondly, with the use of that heritage of scenery by the people for their knowledge and inspiration. I introduce Mr. McFarland.

J. HORACE MCFARLAND, PRESIDENT OF THE AMERICAN CIVIC ASSOCIATION.

ECONOMIC DESTINY OF THE NATIONAL PARKS.

Mr. President, ladies and gentlemen, the American Civic Association early in its existence saw the importance of considering that national parks were actually national parks, and not merely incidental parcels of lands set aside by quite incidental legislation, and with a most fragmentary relation to the General Government. At the time we began to agitate the matter there was not a desk in Washington which belonged wholly to the national-park work; indeed, there was not more than a third of a desk in any department relative to the nation's park possessions.

Even before we began with the national parks as such, dealing with those already established, we thought it our duty to prevent aggression. It was rather early in Mr. Roosevelt's administration that I received a letter one day from a good woman who wanted to know if something could not be done to prevent the building of a trolley line around the rim of the Grand Canyon of the Colorado. I thought something could. So did Mr. Pinchot. So did Mr. Roosevelt. And the Grand Canyon immediately thereafter was, by Executive order, declared a national monument. The trolley line is not yet there.

Mr. Roosevelt was not addressed on the subject of national parks because the broad conception was not yet in our minds, but when Mr. Taft came into office as President we began, very early in the administration, an effort which brought us into close connection with the Secretary of the Interior. We went to Mr. Ballinger with the thought that the time had come to give the national parks a definite status. He quickly saw the idea, and the first draft of the national parks bill ever offered in Congress was prepared in the office of Mr. Ballinger, and submitted for review to a meeting of the American

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Civic Association. Every suggestion we made was immediately and fully adopted. That bill was offered by Senator Smoot in the Senate, and by Mr. Davidson in the House, both then firm friends of the parks, and still friends of the national parks.

The essential thing in this legislation was that there should be a declaration as to what a national park was; what it was for. Frederick Law Olmsted it was who phrased that definition, and with all the mutations of the national park legislation, his phrasing has remained. It has been the only thing we were unwilling to give up. Our idea of an advisory council we had to let go, but we have never been willing to see the declaration as to the purposes of the national parks eliminated from the bill, which is the reason we feel that the bill which was passed in August last is worth while.

The American Civic Association kept on following the national park effort after Mr. Ballinger resigned. When Mr. Fisher came in, our relations became closer, and we followed throughout the administration vigorously and insistently. I had the honor to write the words relating to national parks which appeared in one President's message, and it was a pleasure to find that the President of the United States could see that the national parks were worth bothering about.

When Mr. Lane came into office, Mr. Watrous and myself did not allow much time to elapse until we saw him, and I well remember that on the 15th of March, 1913, when we called on him, he said that he had not had time to look into the matter seriously, but the idea of a national park service struck him favorably, and that if the railroads were conducted in the same manner as the national parks, no man would be brave enough to ride from Washington to Baltimore.

There was another relation the American Civic Association has had to the national parks which may properly be mentioned at this time. When Mr. Roosevelt called that memorable conference on national resources in the White House in May, 1908, I had the honor to be present and to deliver an address on "The value of natural scenery as promoting patriotism," and I do not think that in connection with whatever I have done in a public way there has ever come to me more satisfaction than I felt, after finishing that short address, when the venerable old Secretary of Agriculture, Mr. Wilson, said, "Those are good words, my boy. The world will forget what the rest of us say here, but the women and the children will read and remember those words."

Mr. Yard has asked me, however, to address myself to "The economic destiny of the national parks." It is rather a large order for a 15-minute address. I will merely endeavor to give you the headings, so that you may think it out for yourselves.

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The American Civic Association has long since ceased to be interested in that unfortunate slogan "The city beautiful." We believe in efficiency, in accomplishing something. The beauty will come, and the thing that is not really useful is never beautiful.

We have long known that recreation spells efficiency in communities. I would like to ask that you give consideration to a few thoughts in that direction. We want to consider the use of the national parks as playgrounds.

I want to pound that single word "play" into your minds, if I may. Perhaps it does not seem dignified to you. It means something just the same. I have ventured to formulate a definition which I should like to have you consider. The lexicographers do not give it, but it is this: "To engage in exercise or occupation of any kind for diversion, amusement, or recreation."

That's the kind of play we believe in, and the kind we expect to continue to promote.

There is good reason for considering this angle of the subject. It has been worked out by a most able park superintendent, George A. Parker, of Hartford, Conn., that there is a definite amount of time spent by each human being in play. He assumes that the time not occupied in eating, sleeping, or working is playtime, and he insists that it amounts to at least five hours every day for every individual. If you will challenge the statement in your minds, you will be rather inclined, I think, to say that Mr. Parker's estimate is low. However, I ask you to accept for the moment the statement that five hours per day per person is being used for something else than eating, sleeping, or working. When that time is added up for the Nation of 110,000,000 people it becomes an incomprehensible sum of time—about 63,000 years—to-day, and to-morrow, and every other day the recreational expenditure of the United States of America. We do not control it at all; it happens, whether or not. We have little to do with it, save that we can influence it; but we can not make it longer or shorter. We are tending all the time to make it longer as we reduce the hours of labor, and that movement is hardly likely to be stopped.

Further, we spend money in this playtime, and Mr. Parker has figured that play averages us 2 cents an hour. That does not seem much, but when you pile it up for the United States of America, with the time used also, looking at 63,000 years a day and at $11,000,000 a day spent in money, doing something else than eating, sleeping, or working, the splendor of the problem which is before this present organization fully appears.

This expenditure of time and money is always going on. We have only such influence as we may choose to exert, but we can not stop it. As I have said, I believe that the use of this play time ought to be

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beneficial, and that if it is we should be making a better nation rather than a worse nation all the time. The play time and expenditure includes the time and money used in churches, saloons, theaters, libraries, and everything not related to eating, sleeping, and working. There is not time here to go into the details, but they are awe-inspiring as to the divisions of the recreational expenditures of the people of this country, and I can not recommend to you a more wholesome survey than that of the play problem in your own home community. See how it is spending its play time and play money, and see how infinitesimal is the amount of time diverted and the amount of money used for good.

We believe, then, in the American Civic Association, that we should do our utmost to divert some of the play time and some of the play money toward the upbuilding of the people, and away from the down-pulling of the people. Now, public recreation may, in a general way, be separated, as it may relate to parks—the city parks, playgrounds, parkways, and sometimes I might say the county parks, which are intimately related to where we live. These provide "first aid to the injured." They give the first chance to see the sky, and to feel the influence of a clean, pure breeze. They do not always do that, for I have seen playgrounds in cities as dirty as they could be, but the general influence of the smaller parks and playgrounds is that of first aid to the injured. The broader areas, the State parks and the national parks, serve a different purpose. They reach after the spiritual side of the matter, and that side is the most important to the nation, because in it lies the whole impulse of patriotism, on which the safety of the nation depends.

I have sometimes asked audiences whether they have ever heard of a desire to take up arms in defense of a machine shop. Of course, you can hire guards to defend a machine shop; but do you ever hear of people springing to the defense of a town as unlovely, for instance, as Hoboken; or could the State of Pennsylvania be aroused to defend the smoke, filth, and dirt of Pittsburgh? No, not a bit of it! Often the man who made his money creating the ugly conditions goes traveling, and when he begins to boast he says very little about his smoking factory or his dirty towns. He exclaims about the beauty of his neighborhood, his State, his country. The whole basis of patriotism is love of country. Without it there is no safety.

We can not expect people to go sightseeing in these lavish days and undergo discomforts. If the national parks are not made comfortable as well as comfortably accessible they will not be used, and an important means of promoting patriotism will lie dormant. If the parks are made easy for the people, they will be used extensively. I have had much to do, in my own park experience, with the intensive use of city parks, and have helped to work out certain for-

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mulæ as to how to get the most people to make the most park visits. In Harrisburg, where I live, there are about 74,000 people, who make annually around seventeen hundred and fifty thousand visits to the parks. All we have done, Mr. Chairman, is to make the parks in Harrisburg accessible and comfortable. God made them beautiful.

Another of the things that could be done in the direction I am trying to indicate is to increase the number and proximity of these parks. If there was on the wall here a map of the United States the national parks would show as only little spots, mere trifles; and they are so far off. I have just come in 38 or 40 hours from the shadow of one of the newest and the most accessible national park—the Rocky Mountain National Park. I had my eyes on Longs Peak on Sunday morning about 9 o'clock, and it has taken all the time since to get to Washington. It is too far off.

The national parks are not close enough; there are not enough of them. Why should the park center be so far beyond the center of population? Why should we in the East have to spend about $150 to get the first whiff from the pines of the Rocky Mountain National Park, the first glimpse of its snows? Are we thus penalized because we happen to live where the most people live? No, Mr. Chairman, the parks must be brought close to the people. We who work out the problems of putting the park in competition with the hospital and graveyard and jail know that it is never safe in a community to reckon on the women and children and deficient men going more than a quarter of a mile to a park. We know that we must put the parks in reach of the people.

If national parks are worth while they must be where more people can reach them without large expenditure. It would be a good investment for the United States to make a park survey of the entire country and to indicate certain areas as intended to be national parks to serve the Eastern States, others to serve the Middle States, and the Northern States and the Southern States.

I insist the time must soon come when instead of having national parks created by accident or through the devotion of some interested man we must have a system of national parks all over the land in order to accomplish the upbuilding of patriotism.

We want also unification in national park management. It is now the fact that there are three departments handling national parks—an obvious absurdity. If the departments do not soon fix it up between themselves, some independent agency like the American Civic Association, not caring whose toes it treads on, will need to try to eliminate some of the duplication. It would be a good job to put all the Federal departments into better relation. It would be doing a great thing for them and for the people.

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Congress now has spent a gigantic sum on the national parks—nearly a quarter of a cent per person a year. If it would spend a half cent per year per person for parks, I think Mr. Mather would think the millennium had arrived. And if 1 cent per person per year was provided, he would be unable to comprehend all that could be done for our national parks.

Yet Philadelphia spends $1.40 per person for park purposes; Milwaukee, 93 cents; Pittsburgh, 53 cents. Why should not the United States spend a whole penny for each of us annually in our national parks?

Let me put it in another way. The United States spends the gigantic sum of $700 a day on its vast areas of marvelous natural wonders; Philadelphia $655 on her little bit of most inadequate park area; Milwaukee gets away with $1,076; and even smoky Pittsburgh spends $862 per day on her parks, which Pittsburgh knows is better than extending cemeteries and providing more policemen.

We need extension of the sort of national park promotion we have recently had. Indeed the kind of management that has been going on in the last 18 months in the National Parks Service is so near business management that I do not see how it can have happened in Washington. Here are Mr. Mather and Mr. Yard, business men, actually managing national parks as if they were a business enterprise. It is extraordinary; but I wish it might be extended, and that we might have a whole lot more of it, and that they might be given money, much real money to do the job, such as Mr. Schwab would give them if they were working for the Bethlehem Steel Corporation.

I am not throwing mud at Congress, because Congress does the best it knows how, and we who elect its Members are the responsible persons. When we get around to having a budget in the United States and working with it like any business man, then we will get plenty of money for parks; but I do not want to wait so long. This appropriation of 1 cent apiece for every inhabitant of the Nation ought to come right away, this session; and it should be an automatic, continuing, annual appropriation of 1 cent apiece. That would mean the automatic increase of the support in proportion to the population. There are American cities in which it is written in the organic law that not less than 1 mill of taxation shall be spent on the parks, and the park authorities in those cities can really plan, because they have something to plan for and something to plan with.

I do not think that what I am now about to say will be popular, but I must say it. In the management of the parks I think the Government should do the whole job. I see no room whatever for the

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delegation of the doing of anything in a national park. Nothing should be sold, except as sold at cost by the Government to the people. Why? The Government can buy in the cheapest manner and has indefinite credit. It pays no rent or taxes. It needs no profit. It needs to pay no interest on its investment. Naturally, therefore, it can render the same service at far less cost. If the Government can be trusted to send our letters the Government ought to be trusted to provide us with beds and food in the national parks. If the Government can be trusted to do the things it does through the Army and the Navy it should be trusted to run automobile stages for us in the national parks.

I do not mean to criticize what has been done. I am full of admiration of what I have seen in the parks, and of those now doing park service on concessions; but the very fact that it is good business for them makes it bad business for the people. The only proper way is the handling of the functions of the people by the people. There are States that do that and cities, also. George A. Parker, whom I cited, is responsible for a most excellent and epigrammatic definition of the relation of service and business. He says: "Business is to get all you can for what you give, and service is to give all you can for what you get."

And that's the answer. There is no possible reason why we should not have the cheapest and best service. This man Parker has been trying in Hartford to sell things at actual cost. He can not do it. He has been unable to avoid making a profit in selling milk and chocolate and other things that he is permitted to sell, because he can not get the units down low enough not to make a profit.

I hope you are familiar with the recreation centers on the South Side and West Side in Chicago. These are courageously run by the park authorities, things being sold at cost. They are magnificently handled because they are done for the people by the people. I would not want to be long in the company of one who says the people can not be trusted to do these things. Municipal government is no longer what Mr. Brice said it was 20 years ago—"The one conspicuous failure of the American system."

I go back to my starting point. "The economic destiny of national parks" is to promote patriotism; but there is another aspect to it. If we want to be a little bit calculating—and Americans are sometimes said to be a little sordid—then, the economic destiny of the national parks is to bring a tremendous amount of money into the United States from abroad. I wonder if you realize that the one great natural wonder of the United States which is most attractive, and which is not yet safe until it becomes a big national park—Niagara Falls—is estimated to produce $30,000,000 a year of travel

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revenue outside of any power use that has been taken from it. Niagara Falls is easily accessible and is visited by 1,500,000 people each year.

There is one truly tremendous travel revenue possibility for the United States—a possibility beside which the doings of Switzerland in attracting visitors might sink into insignificance. Indeed, Switzerland could be lost in Rocky Mountain Park. If we are willing to provide the conditions and facilities, the handling of the national parks becomes a purely economic proposition; an investment, not an expense.

But the greatest of all park products, Mr. Chairman and ladies and gentlemen, is the product of civilization, the product of patriotism, the product of real preparedness, the product of manhood and womanhood, unobtainable anywhere else than in the broad, open areas which alone the Nation can provide. There, ladies and gentlemen, is a product which we must promote and which we must have, and everything we can do and everything we can spend which will increase the facilities of the United States for intensifying our all too feeble national spirit for increasing the fervor and vigor of our spirit of devotion to the country—every such thing we can do is thoroughly worth while. That is then, ladies and gentlemen, the "economic destiny of the national parks" of the United States.

THE PRESIDING OFFICER, MR. YARD.

I thank you, Mr. McFarland. I am very glad to see that our stenographer has been most industrious; I shall be glad to have a chance to study that speech at a later time. Although we are so few this is a distinguished gathering in many ways. It is so late that we shall have to stop at the close of our program, but it is with regrets. I see here Marion Parsons, for instance, of the Sierra Club, who could give us some useful thoughts on this subject if there were time. And just a few moments ago Dr. Raymond, of Wellesley College, just left us, whom I met out in Crater Lake last year and who is full of the subject. We have Mrs. Sherman here, whose life is spent in education. She is educating the country through her control of the conservation departments of the 9,000 women's clubs united in the General Federation.

And we have here no less than two "fathers of national parks." One of them is Mr. Enos Mills, whose campaign of 11 years resulted in the Rocky Mountain National Park and whose whole life is the life of a teacher. And I see sitting back there Judge Steel, whose devoted patriotic personal efforts at his own expense—from what he saved out of the salary of a country school-teacher for 17 years—finally resulted in the creation of the Crater Lake National Park.

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I only wish, instead of being half past 12 o'clock it was half past 10 o'clock, so that we could hear from all of these people, for everyone of them have thoughts on the subject of education that would be extremely useful for us to hear. And there is Mr. Barber over there who wants to help us establish winter sports. I might mention a number of others.

But we will now adjourn until a quarter past 2 this afternoon. and we hope that the weather will enable us to have a large enough audience to assemble in the auditorium. We have had an extraordinarily fine session this morning and we have a very fine program for the afternoon.

(Whereupon the Wednesday morning session was adjourned.)

WEDNESDAY, JANUARY 3—AFTERNOON SESSION.

EDUCATIONAL DAY—Continued.

The Wednesday afternoon session was convened at 2.35 o'clock, with Robert Sterling Yard, of the Department of the Interior, presiding.

THE PRESIDING OFFICER, MR. YARD.

This morning the rain poured down in torrents, and we held our session a little late with a few of the faithful in a smaller room which we well filled. It was one of the most successful meetings that I have attended anywhere. It was a kind of "love feast," and I only wish that those who are here this afternoon and were not here this morning had had the pleasure of hearing the valuable and inspiring addresses that we had at that time.

We are discussing to-day the people and the national parks, not at all the administration of the national parks, economic or otherwise. We are discussing this people and their national parks, and when we discuss that subject we discuss education, because no one can visit our national parks without becoming insensibly educated and inspired.

This afternoon we shall continue that subject. We shall first speak of the national parks as a scientific asset, and Dr. Walcott, Secretary of the Smithsonian Institution, the man of men upon that subject, will talk to us.

We want to discuss, because the question of education in the national parks is twofold, first of all our need to instruct the people in the knowledge of what their national parks contain—their scenic resources. We must inform them. That is all we need to do—to inform them; the people will do the rest themselves. That is the first part of our educational propaganda. The other part, the one that will

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survive the former, and in the end will be the greatest of all, is what the national parks will do to educate and inspire the people.

We have both aspects of the subject of education before us to-day. We shall have an author to speak upon our national parks, Mr. Herbert Quick. Mr. Grosvenor, whom I think we all recognize as the authority on the subject, will talk to us about teaching by picture. Dr. Gilkey, of Chicago, who is here, although he has not yet appeared on the platform, will speak of the "Spiritual uplift of scenery in national parks and the Grand Canyon," and Dr. Gilkey can speak on that subject. Dr. Holmes will speak on "The painter and the national parks."

I now have the pleasure of presenting to you, without introduction, because no introduction is needed, Dr. Walcott, Secretary of the Smithsonian Institution.

DR. CHARLES D. WALCOTT, SECRETARY OF THE SMITHSONIAN INSTITUTION, WASHINGTON, D. C.

NATIONAL PARKS AS A SCIENTIFIC ASSET.

Mr. Chairman, ladies and gentlemen, when I came in I told our chairman that the subject assigned to me was one which could be dwelt upon for an hour or more with ample illustrations or descriptions, or limited to five or seven minutes, and under the circumstances I prefer the five minutes. I have prepared a brief note, and I am going to read a paragraph at the beginning and a paragraph at the end, with some comments as to the first.

Dame Nature has a way of hiding wonderful secrets in out-of-the-way places where the brawn and brain of man must work hard to overcome physical obstacles and unravel the hidden mysteries.

Scientific explorers long ago began to search for the whys and wherefores in the Yellowstone, the Yosemite, the Grand Canyon, the Rockies, the Cascades, and the forests of great trees on the Pacific coast. One by one the more salient wonders of these regions were brought within the realm of the knowable. Gradually the people awoke to what nature had preserved for them and demanded that the strong arm of the Government be thrown around the great study and recreation areas of the Nation. Within these parks scientific researches will be conducted for generations to come. Men of science and research will be drawn to these everlasting original sources of nature's story and will return to their work invigorated and enthused for deeper study of the wonders of the earth.

Considering the scientific aspect of the parks carries me back to the first days when I came to Washington, and I heard of the Hayden, Powell, and Wheeler surveys, and learned that Dr. Hayden

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had explored the Yellowstone, overcoming Indians and obstacles of all kinds, and penetrating what was then an almost unknown, unexplored region. Dr. Hayden brought back a wonderful story; he also brought back the results of scientific research. This afternoon we are to hear Dr. Holmes, one of his assistants, speak of the parks from the point of view of the artist.

Two years ago I went to the Yellowstone to make special studies, and I took with me a report, published in 1874, by Dr. Holmes upon the Yellowstone Park, which is full of scientific information and data that is as true to-day as when it was written. Dr. Hayden's work is almost monumental, as leading the Nation to understand the possibilities of many sections of the West, and incidentally its great treasuries of scenery and wonders that have since been developed and are now included in our parks.

There was another man in those early days, a one-armed soldier, Maj. John W. Powell. He was enthused with the idea of learning something of the North American Indians and went West to get in touch with them. Then he became infected with the microbe of the explorer, and started out with the idea of going down the Colorado River, starting in Wyoming. He went down through Estes Park, and finally through the Grand Canyon of the Colorado, one of the greatest feats of exploration probably even undertaken by an individual on this continent. He described the Grand Canyon of the Colorado, and may I stop here to say that he was the son of a Methodist circuit rider, one of the preachers of the older days, who went about on horseback and exhorted the people. Maj. Powell inherited the facility of speech and personality of his father. When he came back from the canyon he came to Washington, and he explained to Congress, and to public men, and to audiences everywhere the wonders of that region. He also enthused many, many men, both in public life and private life in the great West, with the necessity for Government exploration.

Another man that went out about 1852 was Dr. John S. Newberry, of the School of Mines of New York, a geologist, who went across the continent, traveling on horseback and by wagon. He also visited the Grand Canyon, and wrote up the early history of the region.

So it has been all the way through. Different explorers, different surveyors, especially the geologists, have looked into the wonders of the West, and gradually built up a public opinion that finally demanded that these magnificent areas be included in national parks and something be done to preserve them.

In California John Muir, whom you all know, carried on a propaganda about the Sierras, also Alaska. Gradually these men created

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interest that has led many others to follow in their footsteps. In the great survey of the fortieth parallel, Clarence King and his men explored across the plains to California. The Wheeler survey started from the southwest, and explored through Arizona, New Mexico, and north into Utah and Nevada. Other surveys were carried throughout the far Northwest until the development of our present great Geological Survey in 1879, when systematic mapping and work was begun. I recall when, in 1879, going—sleeping on the floor of a freight car—to a point about 100 miles south from Salt Lake, and then by horseback to visit the Grand Canyon. There were no trails, there were no railroads, there were no wagon roads. Our party, after riding nearly 300 miles, reached the sections north of the canyon. Then the topographers went to work to make up the topographic sketch maps, and it fell to my lot to work out the geology from the Pink Cliffs down to the Colorado River. That section embraces 11,000 feet of bedded rocks deposited in layers, one above the other. The Pink Cliffs contain fresh-water beds and fossils that are similar to those of to-day. In the winter of 1882–83 I returned to the canyon over the great forest-covered plateau and went down into the canyon in December, coming out in February; there I learned of a still greater series of still older rocks 12,000 feet in thickness, with more or less appearances of animal life in them, that were unknown elsewhere in the world. Thus, we have in this Grand Canyon area some 24,000 feet of rocks that practically represent the period of the life history of the earth as we know it to-day. That series has been restudied lately, and it is a region where investigations will go on for many years to come.

A few years after, in connection with the work of the Geological Survey, I went to northern Montana, and with a pack train and a hardy man who had been living in the region for many years traveled some 900 miles, crossing and recrossing the Rocky Mountains in search of data that would connect the geology of Canada with that of the United States. It fell to my lot at that time to secure quite a number of these 10-foot panoramic views, some of which Mr. Grosvenor has reproduced in the National Geographic Magazine. I then learned what there was in the area of the future Glacier Park, such as living glaciers that explain the phenomena that may be seen in the Yosemite and elsewhere, where only the traces of the ancient glaciers are left. To-day in studying the Yosemite, if one wants to know how the ice worked and what happened when the glaciers were there, he can go either to Mount Rainier, in the Rainier Park, or to the Glacier Park and learn what is actually going on. In the Glacier Park region there happens to be a very ancient series of rock, and in those rocks you find traces of the oldest life that is

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found on earth, simple forms like the fresh-water algæ, whose remains are preserved so as to be seen in their sections by the microscope.

Two years ago I wanted to know more about the fossil algæ, so I went to the Yellowstone Park, and there I found in hot springs and geysers that the same types practically were forming in deposits similar in appearance to those that occur in those very ancient rocks of the Glacier Park.

That is another illustration of how the student that is interested in any one problem in any one of these parks may find the solution in some other park. You have all heard, of course, of the great fossilized forest of the Yellowstone. There you will see trees from a few inches in diameter up to 8 or 10 feet, with the roots exposed on the face of the cliff, tree above tree, which have been overwhelmed with volcanic deposits of bygone ages. Now, if you want to know about those trees and learn something of them, the place to go is to the Sequoia National Park, where you will find trees of essentially the same type growing, and you make your comparisons between the agatized fossil trees and those that are living to-day.

I spoke of the explorations of the Yellowstone years ago by Dr. Holmes. There he studied more or less of the Indian remains that he found at that time, and Dr. Hayden in all his work, and Maj. Powell in his, were always looking for the remains of the Indians of archeological interest. Now, if you are interested in that subject, you can go to the Mesa Verde Park; you can go practically to any of the parks, down to and into the Grand Canyon, and there you will find the remains of a prehistoric ancient people. In other words, the people of the United States have now brought together in their parks a vast field of scientific study which can not fail to be of material assistance to every student interested in the various subjects. If you are interested in volcanoes and eruptive rocks, go to the Yellowstone, and see the wonderful mountains of volcanic rocks and the geysers, and realize the tremendous forces that produce the geysers. Go to Crater Lake and see the opening of an old volcano. Go to the Hawaiian Islands and see the volcano in action. These are only a few illustrations of the value and the assets that the Nation has already included within its parks.

There are other areas, as was well said yesterday by the chairman, that must come within the parks system. Secretary Lane and all interested are trying to bring those areas within them, and I hope that the pressure of public opinion will be such that within a few years we will have not only in the Rocky Mountain region but anywhere in the United States those areas that should be preserved in perpetuity for the students and for the people.

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In conclusion, I will read my last paragraph:

Men and women with minds weary from the constant turmoil of business will inhale the elixir of life in the parks; they will marvel at the rule of law in nature and apply scientific method to their daily life and activities. Whether we will or no, the scientific method and divine spirit must rule humanity in the future, and as a great source of training and inspiration the national parks will be a mighty asset, both scientific and spiritual, through the centuries.

THE PRESIDING OFFICER, MR. YARD.

I want to take this occasion to say that in my part of the getting ready for this conference I have found a spirit of cooperation and of helpfulness, yes, of eager cooperation and eager helpfulness, from Dr. Walcott and Dr. Holmes and from all of the officials of the Smithsonian Institution, that has not only eased our work here but has pushed it forward. The best thing I can wish the national parks' cause is that it shall continue to profit by the same spirit that Dr. Walcott and his associates have shown us in this instance; but there is no question about that—we know that we shall have that same spirit of encouragement and help from this institution so long as it exists, and so long as the national parks exist.

Dr. Walcott spoke of scientific study in our national parks.

Just to recapitulate for a moment, Prof. Lehnerts, of the University of Minnesota, has undertaken for us, in the spirit of public helpfulness, to promote among the other great universities of this country, East and West, the system of university classes in our national parks which he has been conducting for seven years past for the University of Minnesota. Every national park should become a classroom for the universities and the schools of the United States. Later on I was greatly encouraged when Dr. Claxton, the Commissioner of Education, said in his speech that he considered one of our great objectives should be the use of the national parks as schoolrooms for many of the scholars of our public schools. Dr. Claxton, who is an eminently practical man, has some eminently practical ideas on this subject, and I am very glad indeed that we got a verbatim report of his address of this morning, for it will serve as a textbook for us in our operations in the future.

In the near future I hope we shall see the birth of the nationl parks movement outside of the Government. The natural feeling for the national parks, the uprising of the people in response to our humble efforts, and to the long-continued efforts of many such propagandists as Enos Mills and Mrs. John Dickinson Sherman will soon take concrete form. Some time there will be born a national parks association which shall consist of private citizens interested in

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this cause from every State in this country. The province of this association is to work for the national parks outside of the Government, just as some of us are working for the national parks inside the Government; and between the two there shall exist a partnership of sympathy and public spirit.

Knowing this, recently in New York I had occasion to call upon one of the live-wire citizens of this land, Arthur E. Bestor, president of the Chautauqua Institution. In the course of our talk I told him about the coming national parks association and he rose to it, as everybody has risen to it, with enthusiasm. I expressed the hope that he might become one of the governors of that association, to which he agreed only upon one condition, and that was that he should be "a very live governor" of that body. I mention this incident now to give you a hint of the spirit of the man and teacher who is now about to address you.

ARTHUR E. BESTOR, PRESIDENT CHAUTAUQUA INSTITUTION.

ORGANIZED POPULAR EDUCATION.

The National Parks Conference has no more important task than the organization of such machinery as will bring to the people of America the knowledge of their unsurpassed heritage in the national parks and an earnest desire to enjoy them as individuals. Speaking on behalf of Chautauqua Institution, for two generations one of the great centers for popular education and one of the first places where the parks as national playgrounds were brought to the attention of the American people on a large scale, I can assure you of our readiness to put at your disposal all of our facilities for publicity and all of our agencies for the influencing of public opinion.

Our problem, strange to say, has not been unlike the one in which we are interested in this conference. Chautauqua has had to induce people to leave their comfortable homes in all parts of the country; has had to provide for all their physical as well as mental, spiritual, and recreational needs; had had to maintain them in safety, health, and comfort; had had to see that their environment was such that they could work out their social and intellectual salvation in comfort and happiness. We have succeeded in building up the unique center for popular education of the world, partly because we have successfully met the same needs that face you in connection with the national parks. We are still under the necessity of taking into account railroad rates and transportation problems, sustenance, and sanitary arrangements, and of carrying on publicity on a national scale.

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There are great interests involved in this conference which do not concern themselves with my particular topic—how the parks shall be administered, how influence shall be brought to bear on Congress for their maintenance and development, what advantage shall be taken of them by scientific and educational organizations, what shall be the relationship of the National Park Service and the National Parks Association to other organizations. But all those who are interested in any of these questions will do well to remember that all are equally concerned in the problem of the education of the mass of the people with reference to the parks.

How to make our citizens aware of their priceless possessions; how to substitute America for Europe as the travel field for lovers of magnificent scenery and natural beauty; how to make "See America first" a national slogan; how to create a desire and an ideal—these are the problems with which we are concerning ourselves.

Comparisons while odious seem always necessary for our human understanding. Some lovers of our national parks seem to have adopted as their slogan some such phrase as "Substitute America for Switzerland" and to conceive their task as the turning of travel from the Old World to our own country. There are certain difficulties inherent in such a task which we ought frankly to face. Compared with Switzerland we have not as yet many of the facilities which make travel there so great a delight. Government-owned railroads; hotels and inns along every road and at the end of every trail; organization of an entire nation for the convenience of tourists; expense adjusted to every desire; ease of access to centers of population; historical, literary, and romantic associations—all these and not merely scenery alone make the charm of Switzerland and other parts of out-of-door Europe.

If we are really desirous of making the national parks known to the American people we must face these difficulties:

(1) Distance from centers of population especially from those parts of the country lacking the grandeur and uniqueness of scenery offered by the national parks. The expense of travel is a considerable item in the vacation budget of all of us. In Europe all travel is organized on the basis of first, second, and third class, which most of use take advantage of in Europe, but are rather ashamed to use in America.

(2) Expense: This, of course, varies with personal taste, but there are thousands of people who will never visit the parks because it seems too expensive an undertaking, but who really could afford the trip. Our literature must give better indication of the expenses of such trips adjusted to the economic necessities of various classes of travelers.

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(3) Private exploitation: Too often in America, even where the Government owns and administers some historic or scenic site. we have left to private exploitation all the common necessities of life. Niagara Falls under the old individualistic system was almost unbearable. Public control and intelligent administration have made recent visits to the Falls a joyful experience. I am not attempting to discuss the whole problem of Government control, but it will add to the sum of national proprietorship if the Government can more and more actually administer to all our need in our own national playgrounds.

(4) Lack of romantic, literary, and historical associations: A fine beginning has been made in the National Parks portfolio in publishing the legends and pioneer history. Our authors and painters and nature lovers can do much in creating a literary and artistic tradition for the parks.

(5) Largeness of the task: Any of us who are engaged in the task of public education know what a task such a propaganda involves in an individualistic society like ours. It is not merely that the human mind is so inveterately opposed to new ideas and that so many of us look to some country on the other side of the sea as our mother land, but that the work of giving a hundred million people even a minimum of knowledge is a vast work which challenges us by its very immensity.

What are some of the agencies at our disposal and organizations to be utilized?

(1) Organizations directly involved: In the railroads which reach the parks we have the most powerful and influential corporations of the country through which they pass. They have already carried on a great advertising campaign. I think now of the advertising of Glacier Park by the Great Northern and the Grand Canyon by the Santa Fe. I understand that more and more the railroads are carrying on a continuous advertising campaign to increase travel, are cooperating with each other and with the National Park Service, and that they stand ready to unite in every effort to make the parks better known.

(2) Personalities: In this movement we can count confidently on the support of all lovers of the out-of-doors, of all protectors of bird and animal life, of all conservationists of beauty and natural resources, of all students of geology and forestry, of all believers in the surpassing natural beauty of their native land. And all these will devote themselves to this labor of love because they are working not for individual gain but for the joy of the task and in a common understanding with others who have the same unselfish spirit.

(3) Publicity: We are creating a literature. John Muir, Theodore Roosevelt, Enos Mills, William T. Hornaday, and others have

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shown us the way. More and more newspapers and periodicals will give attention to the parks and their development. The associated clubs have done a tremendous piece of work in connection with the problem of national security. They might well have their attention called to the possibility of a nation-wide propaganda for the national parks as one of their next tasks. Every patriotic organization should have this patriotic opportunity called to their attention.

(4) Universities, colleges, and scientific societies: Their leaders will more and more look to the national parks as laboratories, as opportunities for scientific research and as the most ideal centers for combined vacation and education.

(5) Motion pictures: How wonderfully this most widespread of our modern approaches to millions of people lends itself to propaganda for the national parks. We can reach the multitudes direct in no more effective way, and the people themselves will pay the bill.

(6) Chautauquas, lyceums, women's clubs: All these will respond to any such opportunity. It is only a question of how rapidly the National Park Service and the National Parks Association are prepared to supply slides and motion pictures to cooperate with lecturers and programs committees. Every chautauqua auditorium and lyceum hall and clubhouse and school building will be open if approach is made with national appeal.

(7) Schools: The distinguished Commissioner of Education has doubtless pointed out how the educational system of the country can be utilized. Those who have access to publishers of textbooks will see to it that even a disproportionate attention is given to the national parks in the next few years in the books which are in the curriculum of our elementary and intermediate and high schools. An exhibit of national-park pictures should be available for every school willing to place the exhibit and use the profits for purchase of some of the pictures themselves. Alongside copies of the old masters and European pictures, some of the fine photographs of the national parks should be in every school of the country.

Our work is to create such an organization as can simultaneously take advantage of all these avenues of approach. Our task is stupendous because so many opportunities are at our hand. Our propaganda yields itself to every agency for popular education and democratic organization and national publicity; it relates itself to every organization of a patriotic character; it links itself to every movement in which we are most deeply interested at the present time, conservation, preparedness, Americanization; it challenges us to an individual and collective task of the utmost importance and far-reaching value in our common national life.

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THE PRESIDING OFFICER, MR. YARD.

In reaching the people with the knowledge of their scenic resources we seek the aid of the author and of the artist. The literature of travel, the literature of out of doors, the literature of the mountain tops is undeveloped in America. There are distinguished exceptions, of course. Many books have been written which will live; but the literature lags behind nevertheless. It is in its infancy.

Now, it is one of our great desires that this literature shall become a national literature. Our publishers are as yet unawakened to the commercial possibilities of real mountain books, because the books which are usually offered to them are the journals or are the casual observations of passing travelers—travelogues, evanescent, momentary. But what we seek will grow out of this mass of evanescent books—the book which touches the heart of the people, the book which lives because it touches the heart of nature.

It is our desire, then, to awaken the authors, the writers, of this country to this great unexploited or little exploited field, and I have asked to speak to you on the subject of the author and the national parks a man whose name is familiar to every reader of the journal of greatest circulation in this United States. I do not speak of him in his official governmental capacity, interesting and important though that is, because on this occasion he is an author, a writer, and a lover of the big things of life, not only the big things scenically, not only the big things in the mass, but big things of the spiritual world.

I introduce Mr. Herbert Quick.

HON. HERBERT QUICK,
MEMBER OF THE FEDERAL FARM LOAN BOARD.

THE AUTHOR AND THE NATIONAL PARKS.

Mr. Chairman, ladies and gentlemen, two or three years ago there existed in the city of London an obscure street. It was peopled by obscure men, and yet that street ruled England, and those men ruled the England of that day and rule it yet. That street was Grubb Street, and the men who inhabited it were the obscure authors of the British Empire, and at that time to be known as a "Grubb Street scribbler" was a term of reproach in the mouths of those who thought they were infallible in England, but who really were governed, and their sons after them have been governed, by the Grubb Street scribblers.

Now, in this country, the business of writing has reached proportions absolutely unknown in any other country or in any other age of

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the world, and a writer not long ago coined a phrase which not only illustrates the importance of the authors and writers of America, but also shows the facility of those authors and writers in throwing a thing upon the screen with the lightning flash of a pithy phrase. He named the Authors' Fraternity, that great unorganized fraternity, which is a fraternity of thought aspiration and action, of pain and suffering—he called this great fraternity of men and women "Greater Grubb Street." And I stand before you here to-day as a representative in the service of the national-parks movement of the United States of "Greater Grubb Street," the greatest institution for stringing words together in such a way as to make more or less sense which exists in the world's history!

Now, I speak of "Greater Grubb Street" as an agency for turning out the printed page. Let me tell you that I am not apologizing for a literary trial, or the ideals or the motives or the behavior of the denizens of "Greater Grubb Street," a street in which I am very glad to be a resident. I do not believe that the English language has ever been written as well, and I have in mind Addison and Steele and all the supposed masters in English; but I do not believe that the English language has ever been written as well as it is written to-day in "Greater Grubb Street." The masterpieces of a hundred of the classics of the English language—I say a hundred of these masterpieces—might be cited which are pure as compared with the almost unconsidered literary pieces which are thrown out to-day by the writers of "Greater Grubb Street." The novelist could not sell one of his books to-day to any publisher in the United States, unless it might be Leather Stockings, and every year there are 50 novels written by the "Greater Grubb Street" fraternity and published in popularly circulated magazines, some of them widely circulated, and some of them not so widely circulated, that are better in every respect than any book that Cooper ever wrote. And when I speak of Cooper, I do not mention him as a horrible example, as a man who enjoys a too great popularity; I could mention others, the mention of whom, I am afraid, might give me a newspaper notoriety which I do not care at this time to incur—stories, poems, books of all sorts, which are given to the use of the Englilsh-speaking world as great works, which, if they were offered to-day on their merit, would not be published by any publishing house in the United States. And to-day there are better poems published monthly in the magazines than anybody could read 100 years at a time in the history of the English people.

I do not claim that the writers of to-day are any of them any such geniuses as those great geniuses that have lived in times gone by, but English poetry is written to-day with truth, with sincerity, with success, and with the highest sort of poetic feeling by the denizens

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of "Greater Grubb Street" in America, and I am here this afternoon to try to bring home to you the fact that you do not need to go back to the time of Addison and Steele, nor to those specious times of Queen Elizabeth; you can look around you, and in America to-day you will find a great mass of men of great talent who are writing the English in prose, in poetry, and in the drama, and writing it with wonderful skill and with great success; and so far as the financial returns are concerned, it makes a writer who is somewhat diffident as to his own talent, not to say genius—it makes him ashamed of himself when he reads of the struggle of such a man as Robert Burns to live by his pen and realizes the amount of money that he can make here by things so infinitely below the poorest thing that Robert Burns ever wrote. So that the "Greater Grubb Street" is not only a great agency for the writing of English in all its forms, but it is also a great institution for the making of money. The number of people who are living well, and who are in receipt of good incomes, on "Greater Grubb Street" would be the astonishment and the marvel of the inhabitants of the old original "Grubb Street" if they could know, for instance, of the income taxes that are paid by the authors of the United States.

This is a mighty agency that I have rather playfully typified to you here as "Greater Grubb Street." It is the greatest advertising agency which the world ever saw, and I was almost ready to say that the world will ever see. It is backed up by the most enterprising publishers ever known; it is backed up by magazines and newspapers of a circulation which is perfectly astounding; and the publicity which is given to the writings, and the workers in "Greater Grubb Street" is one of the marvels of this day, something which those who lived by literature in past ages never could have imagined as being possible. There are magazines now with circulations running far above two millions, and if you wish to realize the difference between the "Greater Grubb Street" of to-day, and the literary world of 50 years ago, take one of those magazines and compare it in mechanical finish, in illustration, in style, in artistic make-up, and in the quality of the literary matter published in it, with such newspapers as the New York Ledger, which had the greatest circulation in the time when the older people here present were struggling to find something entertaining to read. Why, those old newspapers were crude; they were absurd in their crudity; and the people who will buy 2,500,000 copies of a magazine such as I might mention, which is circulated in the United States now, and of the quality possessed by it, show thereby that they have made a mighty intellectual march past the time when they bought the New York Ledger and the New York Weekly, when I was a boy; and the difference in quality between those magazines and those old literary newspapers and the popular

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magazines generally of the United States, is the best possible gauge by which the historian of the future will distinguish between the civilization of 1870 and the civilization of 1917.

Now, we come to the national parks. "Greater Grubb Street" is the locality which will make or mar the national-park movement, and whether or not the national-park movement succeeds within a short time in doing what it wants to do, or takes a generation to do it, will be determined by the spirit of cooperation which can be developed between the national parks and those interested in the national parks and our people of "Greater Grubb Street" in the United States.

The national parks are wonders which it is not worth while for me to attempt to depict. All I need to do is to cite what has been said and point to what will be said from this platform, and to say "Them's my sentiments!"

No nation in the world can compare with the United States in first-class, high-class, marvelous mountain scenery, or can compare Alpine scenery with the United States; I mean scenery easily accessible to so large a number of people; and scattered about throughout the United States are other places which should be in the national-parks system. It is a shame, and almost a crime, that the Grand Canyon of Arizona should not be a national park. There ought to be national parks in other parts of the United States, and I think there ought to be a national park between this city and the city of Baltimore, which would be the entrance to our great American London.

Now, you can not build up those things through Congress unless this business of making the proper use of our great natural wonders and our great natural beauties becomes part and parcel of the life of the people. Why do we all speak—when we speak of mountain scenery—why do we all think of the Alps first? Why, because we have read nothing but the Alps all our lives, so far as mountain scenery is concerned, and we do not read it in guide books of the Alps; we read it because "Grubb Street" put the Alps in every novel and in every poem and in every play in which the mountain scenery was necessary as a part of the movement. You read "Our Mutual Friend," for instance, by Charles Dickens, and he takes you to the great St. Bernard. He did not take you there because he wanted to advertise Switzerland, but every time you are led by the pages of Charles Dickens to read that book, as I have read it a half dozen times, you are at once placed in the position of a man to whom the Alps are being sold.

Once there existed, as you all know, a singular character in England, known as White, who wrote a book called the "Natural History and Antiquities of Selbourne," and in it we read to-day of the

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things which Gilbert White noticed in that little picturesque, common, ordinary English neighborhood. He tells us about a species of goat turning head over heels in the air, and he rather suspects they do it for the purpose of scratching themselves. He tells us all sorts of things about the natural history of animals and we read it and are interested in it, not because we are interested in goats or their tumbling over, but because we are interested in the genius of this man White, a genius which every man is supposed to read now, or he is not a well-read man. The same is true of the things described by Isaac Walton in his "Complete Angler." If only the people read Walton who are interested in fishing, the sales of "The Complete Angler" would have fallen off many years ago to almost nothing, but we read Walton not because we are interested in fishing, but because the thing he writes is beautiful and attractive and always will be.

Yesterday I was reading about the battle of Waterloo. I did not care anything about the battle of Waterloo. Yet I read with the most avid interest page after page of the description of the form and the hill and the sunken road through the battle field of Waterloo. Why? Because I had happened to pick up a volume of Victor Hugo, and it was the charm and it was the genius of Hugo that made me read about the Battle of Waterloo, and nothing that I cared about the battle of Waterloo.

John Muir has written about the Sierras, and he has written about the glaciers up along the Alaskan coast, and there is one of his books that we all ought to get and read once in a while, and I have no doubt we will, and we will read and know more about glaciers than most of us would know if we went over the route itself; and why do we read it? We read it because we are interested in a little dog, "Sticky," and we do not care much about the dog himself, but it is the masterly way in which John Muir put the glaciers into a work of genius, as the setting for the charming quality of the dog. We read Thoreau not because we care anything about Valden Point. Why, the only thing that would take us to Valden Point would be because Thoreau wrote it. But its the genius of Thoreau.

Now, the parks are still without all of these things which fill people's minds with the idea of the parks. We think of going to the Alps, going to the lake countries of England, or wandering over the heaths in Scotland, or going anywhere where genius—literary genius—has put the scenery upon the pallet of literary production, and where we breathe it in, where we can not help but breathe it in if we are well read and cultured persons. The parks of the United States lack all that. I ought not to say that, ladies and gentlemen, in view of the fact that I wrote a book about the Yellowstone Park: and yet, let us be candid. I think we may as well admit that even

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the Yellowstone Park lacks something at least of what it should have in the way of a literature.

Now, "Greater Grubb Street" to-day, to-morrow, next year, and 25 years from now, should be enlisted in the business not of writing advertising matter for the railroads or the park service, but of filling the minds and hearts of "Greater Grubb Street" with the spirit of the parks themselves. Why, the parks are full of the natural material of literary production. We think of Barbarossa sitting in his "Enchanted Mountain," some little insignificant hole, a place over in Europe, but he sits there in a cave with his long beard growing down through the ages, and he is going to wait until something happens—I have forgotten just what, and he is aroused; but in the Yellowstone National Park, or in Crater Lake, or in the Arizona Canyon, or in various parks of the United States there are richer materials in them for fictitious literature which is brought out for the purpose of doing a particular literary stunt, but which, if the authors of the United States were filled with these things, would appear naturally in poem, novel, play, picture, short story, and all forms of literary production.

Why, out in the Yellowstone Park there is a place where there is a petrified forest, and it is a well-known fact that the first man going through there found the streams and trees petrified, and there was a petrified bird hanging aloft in the air with petrified song bubbling out of its mouth, and all that kept the bird hanging there from coming to the ground was the force of gravity, and that was petrified, too. It is a perfectly well-known fact that a traveler in Yellowstone Park early saw within sight of him a great huge elk feeding, and he fired at him three or four times, and the elk neither stopped feeding nor ran away, and the man finally approached the elk, and he found there was a glass mountain in the shape of a telescopic lens, and the elk was 75 or 80 miles away, but was made to appear by the glass mountain as though it were very near, and you can see it if you go there to this day, and you will find that a pretty good roadway has been made out of the tunnel ploughed by the bullet.

Then there is a spring in the park that is hot at the top and cold at the bottom, and things can be caught in the bottom of the stream and boiled for dinner in the top of the stream. And there in Crater Lake those Indian guides who had their age-long conflict, and I had it on the authority of no less a person than the chairman of this meeting who wrote about it, that these things are supported on absolute authority and are true. Now, of course, his statement that certain things are based on absolute authority I will admit I read in another part of his book, but I take it also to refer to the phenomena of these lakes.

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Now, the American legend in the Arizona Canyon, the Yellowstone Park, the Rocky Mountain Park, the Glacier Park, and all of these places; the book of travel, the narrative, of adventure nowadays in the park, and the poem inspired by the park, by its scenery, by its occurrences, the play located in the park—all of these things are not going to come unless the denizens of "Greater Grubb Street" are made familiar with the parks just as rapidly as they can be educated to the beauties of the parks and when the advertisements in our magazines are filled with park literature, not because somebody wants it published—that does not make people read it; not because Mr. Robert Yard or Mr. Stephen Mather gets around somebody and induces him to publish an article about the parks—that won't make people read it; but when the literary people of the United States have become so imbued with the park itself that they begin to write about it as the natural setting for their own thoughts, then it will go into a million avenues of thought in such a way that the people will breathe it in with their intellectual life; and when they begin to do that, you can not keep people out of the parks. You won't be able to take care of them in the parks. When the parks become an essential background for the great mass of literature which is interesting, not because it's about the parks but on account of its own inherent qualities of genius, of talent, then you will begin to find that your whole work of getting people to go to the parks is done, and all you have to do is to give them a good time while they are there and take care of them and give them the facilities, and the parks will become the fashion; and just as soon as anything in the United States becomes the fashion it is all off. We will have to go somewhere else than to the park to have a good time, because there will be so many people there; they will be around underfoot all the time.

Now, how is this to be done? Once get "Greater Grubb Street" under this proposition and your work is done. They will write about it in spite of the editors. They will print it in spite of anything you can do.

Now, in that respect, with reference to that phase of the matter, I do not know that I have any concrete suggestions to make as a defense of "Greater Grubb Street." I think perhaps I can not say very much except this: I want to tell you what the Canadian Government has done. Now, there may be some innocent-minded people here who wonder why it is that Smith, Brown, Jones, and Robinson, authors, writers of repute, have been writing so much about Canada, northern Canada, western Canada, for the last 10 or 15 years. Why is it that so many stories have been located in western Canada? Why is it that every author feels that he has to write about the Northwest mounted police or the muskrat or the mouse or some other border

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product? Why, it is done, because the Canadian Government has made it impossible for the American writers to avoid writing about western Canada. Why have they done that? I will tell you what they have done to me, and then you will understand how they have done that.

More than 10 years ago people connected with various things in western Canada began asking me to go to Canada and make a trip. They said all you will need to do is to go to Canada and travel through Canada. You can go to the Hudson Bay if you want to; you can go up to Prince Rupert, or through the grain districts, or the Canadian rockies, or into Ontario, if you want to. Just take a trip up through Canada.

"I can not afford it," I said. "It will not cost you anything. You will travel on a pass. Your expenses will be paid." I said, "No; I will not go on that basis. I won't put myself under obligations to write anything on that basis." They said, "No; that will not make any difference; all you need to do is to go up there, and you will have to write about it. You can not help it."

And it is a matter of fact that any author who gets inspiration will bubble over and write about it, whether he wants to or not. What finally happened was, I felt I was tempted. I was told that a company of agricultural editors were going to be given about a 2,000-mile trip through western Canada at the expense of the Canadian Northern, and the Grand Trunk Pacific and the Canadian Pacific Railway, and would I not go? I said, "I do not think anything of that western country. I am opposed to the American farmers going up there. I won't write anything about it." "Well, go anyhow, and have a good time," they said to me. And I went, and I was up there for weeks, and had an excellent time; saw a lot of interesting country; and to save my life I could not help writing about western Canada from time to time ever since. Now, if they did that to me, they did it to hundreds of other authors in America.

The writers of America have not been corrupted by Canada; they have just been filled up with Canada. The Canadian people have taken the highest ground in the world; they have simply thrown their doors open and invited the writers of America to come to them. Without the slightest obligation to write anything about Canada, absolutely free of any contractual relations, implied or otherwise, and the writers of America have gone up to western Canada, and northern Canada, and also Ontario. They have traveled all over it. It has cost them very little; and the result has been that the literature of the United States to-day is more permeated with Canadian influence than with the things of the United States, so far as outdoor life is concerned.

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Now, it isn't the fault of the writers of the United States. They have had a chance to see Canada. They have not had a chance to see the national parks of the United States. I do not know whether it can be arranged so that they can; I very much doubt it; but I will say this, that if any arrangements can be made by which "Greater Grubb Street" can be mobilized in and about the national parks of the United States, and fill the literature of the United States as it comes from the presses to-day, with the beauties and the graces and the charms and the grandeur of the national parks of this country, it would be the finest thing in the world for the people of this country, because, as a matter of fact, a man sees in nature what he takes to nature. A man brings back from the journey nothing more nor less than what it gives him, and the people of the country need to be educated in the enjoyment and the appreciation of the national parks scenery and all the other scenery of the United States. They want to understand that the time has now arrived when we must make our own legends, and our own superstitions, and I promise you, Mr. Chairman, that if "Greater Grubb Street" is once turned loose on this matter, and "Greater Grubb Street" is once turned loose on this proposition effectively, your work will be largely expedited.

THE PRESIDING OFFICER, MR. YARD.

The address that we have heard is most enlightening. It comes right from headquarters; and we are much obliged to Mr. Quick for some valuable hints. Mr. Quick may have got himself into trouble by his speech, because I know we shall be after him for some very lively help in following out the suggestions that he has made.

Now, there is another element in all this besides the literary one which has its great hold upon the American people. This is the age of pictures. Stories are largely told in pictures. One picture carefully chosen, some one has said, is worth, for message sake, a thousand pages of ordinary written words. The picture carefully chosen, the picture with a mission, picked from many by the man who perceives its usefulness for carrying out its mission, will carry to thousands upon thousands of people who never would bother to read the printed word.

There is with us here a man whom all acknowledge to be the man of greatest accomplishments in the art of approaching the public by pictures. Mr. Gilbert H. Grosvenor, the editor of the National Geographic Magazine, will now speak awhile to us and will, I know, enlighten us as to how the message of the picture can best be utilized in carrying our message of the national parks to the people of the United States.

(Mr. Grosvenor's revised address was not received in time for publication.)

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THE PRESIDING OFFICER, MR. YARD.

But we must have not only the writer, not only the photographer, not only the picture maker, not only the editor, carrying the message of the national parks to the people of the United States; we must have the artist. The artist uses line and mass and color to convey the spiritualized fact, not the literal physical fact; and that may suggest a definition perhaps of art in its relation to national parks, that it shall carry the spiritual fact to those who do not see, who have not the opportunity of looking upon these spectacles and perceiving for themselves what lies enshrined within.

It is not, you will perceive, the line itself, it is not the physical mass, it is not the proportion, it is not the light nor the shadow nor the color that carries the spiritual meaning; it is the artist who interprets by using these mediums. It is therefore one of our greatest objects to secure the help of the artist in the convoy of the message which the national parks have for this people.

In order to emphasize this fact, we have attempted at very short notice to get together a loan exhibition of paintings of scenery illustrative of our national parks. That exhibition, small but worth while, is now up stairs in the National Gallery. When, some six weeks or less ago, Mr. Mather suggested this idea to me, and I, being in Chicago, sought Mr. Eggers, director of the Art Institute there, for advice and encouragement and suggestion, he asked, "You come from Washington?" I said I did. He asked, "You are going back there?" And I said, "Yes." And he said, "There is in Washington a man who, if you will see, will make it needless for you to go further. See Dr. William H. Holmes, of the Smithsonian Institution, and you will need see no one else."

I have seen Dr. Holmes. Dr. Holmes is, let me tell you, not only, as Dr. Eggers stated, one of the great curators of this country, one of the unusual makers and displayers of collections of pictures, but an artist himself of deep feeling, an artist with great power of interpretation, an artist who is inspired with the spiritual sense which is the soul of art. I present Dr. Holmes.

DR. WILLIAM H. HOLMES, HEAD CURATOR, NATIONAL GALLERY OF ART.

THE PAINTER AND THE NATIONAL PARKS.

It gave me great pleasure to install in the large room of the National Gallery the collection of paintings brought together for this occasion in illustration of the wonderful scenery of our national parks. It is for the most part a sane exhibit although not wholly free from the pathologic manifestations which characterize the so-called modernist movement of to-day.

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I would call especial attention to the works of Moran, Bierstadt, and Hill who, with Church, are the great exponents of American landscape art. The genius of these men alone has risen to heroic heights enabling them to grasp and present on canvas the greatest subjects which the continent affords. Following close upon the footsteps of these masters are Laurence, Parshall, Butler, Rungius, Ufer, Leigh, the Powells, Groll, Potthast, Daingerfield, Peyraud, Babcock, Dunton, and others whose works, shown in this collection, are worthy of the admiring attention of the public.

When I came to the Smithsonian Institution 45 years ago Thomas Moran was exhibiting in the main hall of the institution his great painting of the Yellowstone Canyon which now hangs in the United States Capitol. To-day he is at El Tovar, on the south rim of the Grand Canyon of the Colorado, still at work, true to his early love and adding steadily to his marvelous record. He is the master par excellence of the canyons, the plateaus, and the mountains. His grasp of the great subjects and his knowledge of form, color, rock structure, vegetation, and every phase of atmospheric effect are marvelous.

The painting of the Grand Canyon of the Yellowstone, shown on the east wall of the gallery, is his masterpiece—a work which insures his place as the first painter of our national scenery, if not indeed, the greatest landscape painter that the world has produced. I have climbed the sculptured walls and slid down the sulphurous slides of the real canyon and studied the subject from all points of view and under all atmospheric effects and find this work a wonderful interpretation in its reality, beauty, and poetic expression, yet presenting with the utmost faithfulness the infinity of detail which characterizes the original and which escape the brush of all others who have attempted the subject.

Bierstadt's "Mount Whitney," on the west wall of the gallery, is a superb work true to the type of the Sierra Nevadas and a strongly poetic interpretation of one of the grandest phases of our crystalline mountain ranges. Those of us who have dwelt for a time in these wilds find it hard to pass this picture. The gallery to which it belongs has fallen heir to one of the greatest treasures of American landscape art.

The "Awakening of the Grand Canyon," by Parshall, is a masterly interpretation of a phase of this marvel of marvels which few have sought to represent. The sun strikes the lofty rim of the far-away cliffs, while the canyon itself is filled with mist so that the observer must search for the gorge and the river as he must search for the real gorge and river before the morning sun has thought of revealing them.

My failure to mention other works in detail must not be thought of as indicating that many of them are not worthy of mention, for

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every picture in the central group tells its vivid story of the wonders of our great West.

It is entirely natural that one who began exploring in the Rocky Mountains 44 years ago and who has witnessed the development of the great surveys and the inception of the movement for the establishment of national parks should take to reminiscing, but I shall not weary you by recalling the multitude of scenes and events that come to mind. I have sketched perhaps every range and group of mountains from Montana to Mexico and have climbed nearly all of the great peaks of the ranges and explored the valleys and canyons. When I am homesick at all it is for these wilds and especially for the upland parks which nature has arranged with more than the skill of the landscape gardener. Everywhere there are subjects to inspire the painter's brush and at the same time to test his skill.

I may speak of the Yellowstone Valley where we began our explorations in 1872, and recall the inception of the idea of setting aside the central portions of this wonderful land as a national park. Dr. Hayden, the director of the survey of the Territories and his able executive officer, James Stevenson, conceived the idea, and on their return to Washington they, with others, urged upon Congress the advisability of reserving this great area as a free resort to all the people. The paintings of Moran, who accompanied the expedition in 1871, were an important factor in bringing the project to a successful issue.

In those early days many of the physical features of the park were without names, and names were freely given for convenience of reference in the topographic as well as the geologic work. I had the pleasure of naming mountains, valleys, streams, and geysers, but did not name the peak which bears my own name. That was the work of Geographer Gannett, but I did not object. A feature of particular interest on the east fork of the Yellowstone is Amethyst Mountain on the marvels of which I made the first report. The face of the mountain shelves off in narrow cliffs in which stand out in bold relief the trunks of petrified trees, suggesting the columns of a hundred ruined temples. The Tertiary forests had been buried one over another in the gradually accumulating volcanic débris and thus became petrified and the erosion of the valley in subsequent ages wore away these partially consolidated formations leaving the trunks exposed. Many of these trunks were originally hollow and as petrifaction progressed they were filled with crystals of quartz many of which have the amethystine hue, and on breaking open the trunks the crystals were exposed and easily extracted. Our pack mules were loaded to the limit with the remarkable specimens.

In 1872 our work carried us to Colorado, where several years were passed in exploring the great ranges, the features of particular in-

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terest being the conquest of the Mountain of the Holy Cross, myself being the first person known to have reached the summit, and the valley of the San Juan, on the wonders of which I had the honor of making the first report. Moran's great paintings of these subjects are well known.

In 1880 I had my first look into the Grand Canyon of the Colorado River. In company with Maj. Duton, I approached the gorge from the north, riding through the deep forest which covers the great Kaibab Plateau. As we rode forward we began to catch glimpses of the blue through the mesh of tree trunks and foliage, and gradually as we approached the rim the blue, which seemed the blue of the sky, sank deeper and deeper until we found ourselves hesitating to proceed, the impression being strong that we had come to the edge of the world. Reaching the edge, the great gorge began to reveal itself, and what at first had seemed the blue sky became a vast expanse of sculptured plateau fronts, diversified by promontories, isolated pyramids, and deep recesses in infinite detail, extending to impenetrable depths. To the east the chasm cut the horizon in a great notch and the same again far to the west.

I spent two full days in making a pencil panorama of the canyon, my own natural method of expression being the graphic. Description is vain. We must depend upon the pictorial art to convey to the mind of those who can not visit the region some idea, howsoever weak, of this greatest wonder of the world. But I can not go on. The memories and scenes crowds upon my mind so that I am helpless in the face of the task.

THE PRESIDING OFFICER, MR. YARD.

Now, let no one go, if he can help it, because the coming dessert is fine. We have considered the educational features from various points of view, but the soul of all scenery is spiritual, and this will now be discussed by the Rev. Charles W. Gilkey, of Chicago.

At the close of his address the conference will be adjourned until this evening, when we shall have same remarkable colored slides shown in this room by Mr. Gleason.

I present Mr. Gilkey.

THE REV. CHARLES W. GILKEY, OF CHICAGO, ILL.

THE SPIRITUAL UPLIFT OF SCENERY AS EXEMPLIFIED BY THE GRAND CANYON.

Mr. Chairman, ladies, and gentlemen, some of my Chicago friends have been teasing me a bit lately with a new story of a Scandinavian girl who has just come to Chicago. She felt herself very far from

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home and wanted to be very careful. On the first Sunday on which she was in our city she went to a Scandinavian church. The minister happened to be a rather youthful and apparently unmarried man, and at the close of the service he spoke to the stranger in his congregation, expressing his pleasure in seeing her there. He said: "I would like very much to come and call on you some time." The Swedish girl blushed and stammered: "No, t'anks. Ay bane have a fellow alretty."

You may have felt as I did when I first looked over the program for the conference, and particularly for this afternoon; I felt that the conference was amply provided for, and that there seemed to be little reason why a plain preacher should enter it.

But I have been struck by the fact that, in all the addresses which it has been my privilege so far in the conference to hear, the note which it is mine to sound is not sounded now for the first time; that through all these addresses the term spiritual, in its widest significance, as including all the higher interests of our nature, the whole gamut of the possibilities of the human life, has steadily been held forward as one of the most remarkable, and certainly one of the most powerful, of the effects of our national parks upon all of us who visit them. It is that phase of the subject falling distinctly to me this afternoon that I want for a little while to fasten your attention upon.

The national parks are not simply evolutions of nature at her greatest, at her best, at her grandest, as you have probably noticed when you have visited the parks; they are also very many times in their way an evolution of human nature, sometimes at its finest, rarely, perhaps, at its worst.

You have heard, as I have—who of us has not?—in visiting some of the great scenic places from one or another of the group of travelers in which you may have found yourself, some remark which might evidence itself not at all as a judgment on the scenery, but rather as a judgment on the person that uttered it. My father-in-law is very fond of telling his particular experience at Glacier Point in the Yosemite. The company had just arrived there and was standing breathless, speechless, at the outlook, when suddenly, while everybody was trying to recover his breath and composure in the midst of the wonder of it all, from the rear of the group, in a high feminine voice, came this remark: "Sarah, where do you suppose they bought those awful curtains in our room at the hotel?"

Fortunately, most people do not succeed in revealing their human nature with such startling clarity as a remark like that reveals the unfortunate maker of it, but for all of us human nature is revealed when we come into the presence of the great objects of the natural world. Some of us burst into speech as intellectually irrelevant per-

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haps as that was. Some of us more or less adequately express the reaction of our esthetic nature openly, and some of us, lacking words, say nothing at all. For our human nature, in its capacity in such scenes, runs through the whole gamut of human life and its possibilities; and that is why educational day has such a natural part in the very center of the program.

We are thinking to-day about the reaction of the national parks on human nature. Other addresses earlier to-day have sketched its reaction on our mental, our esthetic life, the extraordinary power of great scenes like these to stimulate our minds to their utmost, bringing our esthetic natures to their furthest sensibility. But just as the intellectual and the esthetic parts of us are integral and normal parts of our nature, so are the normal and spiritual capacities to which, in the broadest comprehensive way, we apply, as I shall apply it this afternoon, the term "spiritual," are natural parts of our human nature. And the interesting thing about our national parks, as about all great objects of natural scenery, is that they not only quicken men's minds, stimulate men's esthetic natures, but that they deepen powerfully men's moral consciousness; and even more powerfully do they stimulate men's religious nature; it is this latter phase of the great work of our national parks, in deepening the spiritual capacities of human nature, to which I have to ask your attention.

My own attention has been focused upon it since my own first visit to the Grand Canyon during the summer just passed. On my return to Chicago I tried, in a series of three addresses to my own people there, to review some of the spiritual uplift of such scenery as that in our western parks, and particularly in the Grand Canyon; and I have been struck with the fact not simply as a matter of theory, to which one might go in defense, but as a matter of experience, that not only have those who are fortunate enough to see these great things with their own eyes but those who even by proxy, as it were, can get in touch with some of their spiritual results and impressions, enjoy the spiritual uplift of our western scenery. And let me say particularly of the Grand Canyon that it is one of the real facts, one of the most real facts, of human experience.

The thing that struck me first, when, with others, I came to the edge of the rim of the canyon, the thing that differentiated it at once from all of the other great natural objects which I had seen during the summer in the West, was the totally different effect which it produces on the spectator. Who of us does not remember the chorus of "Ohs!" and "Ahs!" and "Isn't it wonderful!" and that conventional familiar chorus of the last summer or two which I suppose will be rendered in other words after a year or so when our contemporary slang has changed a bit—"Some view." That's the way we Americans talk when we get into other corners of our country.

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But the thing that struck me at once, not only about myself, but about all of my fellow travelers, when we approached the canyon was that we all were doing the same thing, starting back in involuntary reaction, in bewilderment, as if instinctively afraid to look down, and in breathless silence; and nothing grew upon me more in the next hours, the next days, than the way in which the canyon asserted over you, not simply at your first impression, but the longer you stayed there, that mysterious, irresistible mood of silence.

At first you yield to the mood and rightly, perhaps, you do not attempt to analyze or explain it. But after a little while I found myself rather curiously trying to find why it was that the canyon affected me and everybody else, apparently, so differently from the way other great things had done; that, whereas in all these other great scenes we all burst into chattering speech here we started back in breathless awe. I have three guesses and because they are fundamental to what I want them to try to say I want to give them to you simply for what they may be worth as guesses.

One is that the extraordinarily psychological effect of depth upon the human mind and the human faculties of perception is, I begin to suspect, that natural shrinking which is common to us all and which in many of us rises almost to a positive complaint. We all regard the career of the steeplejack as one of dreadful daring. We are far more sensitive to depths below us than we are to heights above us; and the extraordinary thing about the canyon and one reason why, I suspect, is it seizes you with that grasp of sudden awe, is that it takes advantage of this intuitive human shrinking from great depths below. When you go up into a building by the elevator or the stairs you go up gradually, and as you go up you get steadily used to the new perspective. When you climb a high mountain you become used by the physical adjustments of the effort, by all the ascending outlooks, to the gradually ascending heights, and when finally you look down you are more or less adjusted. But at the canyon you are making your way through a scrub pine piece of woods on perfectly level territory and all of a sudden, without any warning, the ground breaks down below you literally a mile.

Then I have another guess, which is, of course, very familiar, the incredible immensity of it. I was trying to make real in Chicago the distance from Hopi Point east and west and telling our folks that that was one-third as far as the distance from Chicago to Joliet and just as far as from Chicago to Wisconsin. You do not need, you who have been there, to be reminded of all the incredible immensities of it, the 13 miles straight across, the 20 miles across to the other side, diagonally, the 4,500 feet below to the first level of the floor, and the 1,500 feet deeper yet, and that most astounding of all; also that little glimpse of the Colorado River you thought

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might be a mile long until the guide told you it was times that many. This incredible immensity of it is one of the other elements in this great all.

And the third is the weird immensity of its color. Its gray and purple and red and brown are familiar enough to us in small dashes and at close range; but when nature has not been satisfied with molding into fantastic forms mountains thousands of feet high and stretching out miles in extent, but has painted them in bands a thousand feet wide, shading into each other, and has set you at a perspective miles away in order to see her gigantic canvas, then the total effect is entirely different from that given by colorful nature in other instances. And that is another of the reasons why the canyon is so utterly impossible to reproduce.

You hear all the words that have been piled together about it and none of them come anywhere near its reality. You see all the photographs and stereopticon and moving pictures and all the paintings that the utmost skill can depict, and then you have not seen the canyon because you have not felt it.

And that's just what I am trying to say, that the most extraordinary thing about the canyon is that indescribable mood into which it does not so much plunge as seizes you, and there you are. For when you take these same colors and mix them on a small scale in a little picture, however skillfully, the result is essentially and intrinsically different from what the reality was on that scale of immensity, with that weird immensity and blending of color, and beyond all with that yawning depth which seizes upon all the instincts in you and makes you start back in fear and in silence. And that, too, is I suspect the reason, as has just been suggested by the last speaker, why one really, to understand or appreciate the canyon, one must stay a while.

I have been sincerely sorry ever since coming away for those unfortunate visitors who have to run in and out on the next train. The canyon refuses to yield its inner secrets to any sudden assault. You can not take it by storm. You have to live with it, for the lights and shadows, the combinations of color are changing with every passing hour. At sunrise, high noon, and sunset it changes with the changing sky and it alters its mood with yours, and you must see it at all hours; you must see it in all conditions in order really to have it impress upon you this mysterious spell.

And among the reasons why you must stay awhile—and here again I come back close to my emotion point, which I am anxious that you should feel before I go on to apply it—you must stay awhile in order to appreciate that the other mysterious fact about the canyon is its silence. It is not only that you are silent in its presence, but that it is silent in yours; and that hush of eternity that broods over it

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day and night is one of the most mysterious and one of the most powerful things with which I personally have ever come into contact.

I do not know how it was with you, but I remember well, after long moments out on one of the points, when no sound had been heard, and when often the wheeling buzzards with their motionless wings seemed to add to the terrible stillness of it because they never uttered a sound, that the very chirp of the cricket on the route going home was a positive relief, as if to reassure you that you were not the only living thing in the whole vast scene.

And I well remember the impression made on me when I was fortunate enough to see one of those wonderful bluebirds dip down over the edge of the rim with a flourish of marvelous deep blue as the sun fell on it; I was thankful for his little song to set against that silence. But I noticed that he, too, like me, seemed to be afraid of all that was down there; that he too did not venture many score of feet out over the great rim of the upper edge.

Now, if my own experience of the canyon, as I have tried to suggest it to you in some of the things that seemed to me salient about it, is at all characteristic, it is the basis at once for the first and most important thing that I want to say this afternoon about the spiritual uplift of such scenery as this and about the canyon in particular; and that is this, that, better than any place I know, the canyon creates that awe and reverence which are at the very foundation of all spiritual life.

The students of morals and religion in our time are telling us that human instinct is the root of both. Life is the human instinct of all. The reason why the spirit is perhaps no stronger in our modern life is because the conventional flatness, the obvious mediocrity, the familiar shallowness of the life which you and I have to live is so ever present with us that it has dulled, if not atrophied, this fundamental instinct of awe and reverence which is at the bottom of all real spiritual life.

Now, what the canyon does for you is to pick you out of circumstances and scenes and away from people and ways of living that do little to stimulate your awe and reverence, and to set you down in the place where, try as you will to resist, try as you will to hold yourself in another mood, you can not help yielding to your awe and reverence.

From whatever point of view you approach the canyon, you also become interested in it as a student. Your mind may be extraordinarily stimulated by the marvellous aspects of its geological history; it may be apparent to you that those lowest bottoms must be where the Colorado River is wending its way; that the walls are all vertical; and that they may have been thrown up by some earthquake

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aeons before the horizontal strata of the wider canyon were deposited at all; that after that process was all complete some other prehistoric river had to begin to cut its way down before the modern river could begin to cut its slot at all. And when your historic imagination has taken that retrospect back into the uncounted aeons you feel just like one felt in the presence of the works of prehistoric man at the San Diego Exposition last summer. You have begun to feel that your intellectual curiosity is summoning your intellectual imagination to reverence and to awe.

But it is not perhaps so much your intellect that is summoning to reverence and awe as it is your emotion. How powerful that is I can not tell you. Neither can I erect it in you unless you have been there. You and I can only restore the mood of awe and reverence within ourselves by going there again ourselves.

The best sentence I think I have found to express this thought is on a post card I picked up:

> Eluding all sense of perspective or dimension, outstretching the faculties of measurements, a boding, terrible thing, unflinchingly real, yet spectral as a dream.

I know no six or seven words that sum up the remarkable conception of the canyon's remarkable effect on the human imagination than those last words: "A boding, terrible thing, unflinchingly real, yet spectral as a dream."

Speaking of the awe and reverence which lie at the bottom and root of all true spiritual life, let me remind you with all frankness that no nation on earth so needs just this stimulant as we Americans. The third dimension has dropped out of our national life. We are the biggest nation on earth when it comes to measuring length and breadth and talking about it. Who lives as we do? We talk about great figures, great statistics, great numbers, great distances, great wealth, great values, great credits, great finances, and all the rest that have to do with the other two dimensions. But when you stop to think about the third dimension, the sense of depth, that is what everybody misses in our American life. Kipling looks at us and, in a very friendly, very frank series of phrases, points out exactly this lack of awe and reverence.

One of our older Americans, only a few weeks ago, was saying that one of the most significant and perhaps one of our most dangerous aspects of our national life was a passion for up-to-dateness; that we will not read a newspaper that is more than 24 hours old; that we look upon a book written further back than the last month as quite ancient; and that as a result the sense for all the past, that sense in which awe and reverence plays so large a part, more and more has tended to drop out of our national consciousness; and that,

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in becoming so tremendously up to date, we are at the same time getting unusually shallow.

That is just what I mean when I say that the third dimension is forever tending to drop out of our American life. Suppose it had been an American instead of Moses to whom the voice came out of the bush—"Take off thy shoes from off thy feet, for the ground whereon thou standest is holy ground." What is your guess as to the characteristic American reply? Would the American have kept his hat on and asked why he could not keep on his shoes also? Or he would never have heard the voice at all?

My point is this, that anything which gives to we Americans a tremendous, overwhelming sense of the third dimension has to do with one of our greatest needs psychologically. Why? Because things moral always have to do with that third dimension. You can feel the difference between what Mr. Lloyd George a little while ago called the sense of self-sacrifice, the high plateaus of moral character, and those lower levels of the senses, those sins of the disposition—the bad temper, unkindness, and selfishness which are the lowest moral levels of all. Unless you can feel the difference between those levels, where are you as an individual? Or how is the nation that loses that sense going to keep its moral sense, its consciousness? If you are interested in pursuing this line of thought, when you go home read Tennyson's Vision of Sin, and you will see at once that through it all runs the picture of a mountain range. Do you know, when I stood on Hopi Point, at the Grand Canyon, I began to suspect that Tennyson might have written the Vision of Sin there. Do you remember those last lines, with their wonderful picture of human destiny and the mystery of human life? See how the picture fits the canyon—

> At last I heard a voice upon the slope
> Cry to the summit, "Is there any hope?"
> To which an answer pealed from that high land,
> But in a tongue no man could understand;
> And on the glimmering limit far withdrawn
> God made Himself an awful rose of dawn.

And anybody who has ever seen sunset or sunrise at the canyon has seen the perfect setting of Tennyson's verse.

Whatever increases in our American souls the sense of the third dimension is directly a moral education—and it is more than that. Whatever increases in our American souls the instinctive sense of reverence is the planting of a root of vital religion. For, to a man into whose soul there never comes the consciousness of anything so supreme, so wonderful that he can only bow before it in breathless awe, how can there come any personal experience of religion?

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Just once more, if I may detain you but a moment. I had one other experience at the canyon that has helped me how to understand what I believe to be part of the secret of its extraordinary spiritual uplift, and that was the sense of dependence and the dread of loneliness which the canyon can cast over you. We were out at Hopi Point. I will not try to describe it for you; I could not; but as we watched the shadows lengthen upon the canyon and the deep purple setting of night steal up the valley, Mrs. Gilkey turned to me and said, "I would not be alone here for a great deal."

Not until the remark was made did I realize the profound psychological truth. "I would not be alone here for a great deal." And on the way home she made another remark which has stayed with me ever since. She said, "Do you know I feel as if I had stood before the last judgment seat—as if the secrets of my soul had been laid bare?"

I will have to leave it to those of you who have been at the canyon under such circumstances to recognize what I believe to be the truth of both those remarks. No spot on this earth that I have ever stood in has so fastened upon me an instinctive dread of being left alone, an instinctive sense of dependence on other companionship, an instinctive sense of personal responsibility such as that impressed upon me at the canyon.

I have been wondering ever since if possibly a visit to the canyon will make it a little easier for all of us to understand a thing that religion has always talked about, and always will, and that is the instinct that every human life is strangely, mysteriously responsible. The traditional doctrine of religion that incarnates is the doctrine of the last judgment. Now, naturally enough, those whose last idea of terror was that of standing before the judgment bar painted their scenes of responsibility in terms of a great judgment seat, a great white throne, and a great judge. Rightly or wrongly, that no longer holds for you and me; and particularly for us Americans that doctrine no longer holds the dread that it used to hold for our ancestors. But you go to the canyon some day at sunset and stand upon Hopi Point and let your soul answer. You will know then more about the doctrine of the last judgment than you ever knew before.

Once more, and only a reference: They told us that down in a little walled canyon alone or in groups live men who have fled from justice and are trying to escape society. Stand on the rim and look down. Watch the depths where darkness lingers in the morning and hovers in the evening; and you will begin to see a parable on human life. It has stayed with me ever since. Deep in nature's canyon depths hide those unsocial beings who flee the face of men. High up on the rim where first they see the sunrise, where the light stays longest, where the promise of the new day tarries last, are the

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prophets and seers of humanity, with all the rest of us clambering up or slipping down on the slope in between.

One profoundly suggestive hint that the canyon gave me the last hour I spent with it was this: The best views are not those from the bottom, fine as they are; or upon the slopes, interesting as they are. For the best views of the canyon, stay up on the top. It is true of human life no less. It is not the realist's exploration into the life of the underworld which affords the widest, the best, the truest outlook on human life. It is not even the geologist's exploration on the slope, invaluable as it is. It is the outlook of the individualism that can climb to the peak of human life and look over its whole scope; that can let its soul look up and down in reverence and awe.

All this our ancestors would have called natural religion; and our ancestors, like modern detectives, would have gone around the grand canyon with microscopes looking for a little finger print of the Almighty. For us modern folk, also, this is natural religion, only we get at it just the other way. We have found out more than our grandmothers knew about the ways in which the Grand Canyon and all the other great wonders of the natural world have created, and we are less consciously dogmatic than they were. It may or may not get anywhere to trace the connection between cause and effect or to try in any literal sense to make these the handiwork or the finger marks of the Almighty; but we can not afford to lose out of our lives or out of the Nation's life natural religion in its true eternal sense, the natural religion that comes not so much by process of argument by nature as by process of investigation into the mysteries and secrets of the human soul. As one thinker has well put it, it is not through nature that our modern world comes to God; it is through man.

Perhaps this is not so heretical as at first it might sound; for no less an authority than George Adams Smith tells us that to the highbrow of old, with his wonderful sense of the starry heavens and the earth beneath, God's masterpiece of nature were not so much of an argument as a sacrament, not so much a proof of God as a revelation of the world outside, of the love and care which he had found in his own soul's experience. Another said, following out the same great thought to which I am trying to lead you, that two things moved him to awe—the starry heavens above him, and the moral law within him; and, if the starry heavens above, say on a silent night in the Yosemite, or if the wonders of that same light as it lingers in all its splendor in the Grand Canyon, will move any of us or our countrymen to awe, it has thereby helped us to a quicker and a keener awe for that moral light within us, which, after all is said and done, is the only indispensable thing for the future of our nation.

(Whereupon the afternoon session was adjourned at 5 o'clock p. m.)

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WEDNESDAY, JANUARY 3, EVENING SESSION.

The entire evening session was devoted to an illustrated lecture on the national parks by Mr. Herbert W. Gleason, of Boston. The lecturer used 150 lantern slides, all colored from nature, most of the coloring being by Mrs. H. W. Gleason, who has accompanied her husband on all his trips through the parks. A number of remarkable moving panoramas were also shown, giving broad landscape effects from high viewpoints.

Herbert W. Gleason.

It has been my good fortune to visit all of the more prominent national parks of the country, in many cases repeatedly, and also many of the national monuments. From more than a thousand photographs taken on these various trips a brief selection has been made for presentation on this occasion, the object being, not to give a comprehensive view of the scenic beauty of the national parks, which would take many evenings, but simply to indicate here and there some of the more striking features.

The principal national parks of the country fall readily into two divisions, geographically; first, those which are found along the range of the Rocky Mountains, and secondly, those which are found on the Pacific slope. Beginning with the first division, Yellowstone Park naturally claims chief attention, not only because it is the largest of all the parks and was the first to be established, but also because it possesses many features which are absolutely unique. Indeed, in the minds of many people it is the only national park which we possess—they have never heard of any others.

On the splendid arch of basaltic rock which stands at the northern entrance to Yellowstone Park there has been engraved the legend: "For the benefit and enjoyment of the people," a sentiment which may well serve as the text for any discourse upon our national parks, and also as an appropriate rallying cry in all efforts for their protection and perpetuation. Yellowstone Park would deserve its establishment if only on account of the beauty of its ordinary features of mountain, lake, and river; but it has worthily commanded world-wide attention because of the wonderful variety and splendor of its volcanic phenomena. Prominent among these are the remarkable terraces and travertine deposits at the Mammoth Hot Springs. Here the "Minerva" Terrace, "Cleopatra" Terrace, "Jupiter" Terrace, and many similar formations constitute an assemblage of extraordinary interest, while the manifold rainbow tints of the travertine are exquisitely beautiful. So with regard to the multitude of hot springs and boiling pools—the "Beryl," "Punch Bowl,"

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"Morning Glory," "Oyster," "Emerald," etc.—one finds here infinite variety in form and color, as well as never-ceasing charm. But Yellowstone Park is famous more especially for its geysers—those relics of old-time volcanic activity so startling in their habit and so mysterious, at first sight, in their operation. No other locality in the world equals the Yellowstone in the number, variety, and magnificent display of its geysers. It is worth a long journey just to behold a single eruption of "Old Faithful."

Every visitor to Yellowstone Park notes with delight the surprising tameness of the wild animals. The bear, deer, elk, antelope, squirrels, marmots, and even the birds evince a confidence in man which speaks volumes in favor of the policy of protection which has been accorded to all wild animals in the park, and it is a welcome fact that the same policy in the case of other parks is producing the same happy result.

The climax of beauty in Yellowstone Park is found in the Grand Canyon of the Yellowstone. Here on the walls of this canyon nature seems to have exhausted her palette of colors. Such brilliancy is found nowhere else on earth. As Enos Mills happily says, it is "lined with the sunset." Standing on Lookout Point, facing the Great Falls, one is almost carried away with the supernal beauty and fancies himself suddenly transported to another world. No wonder that more than one skilled artist, seeking to reproduce the scene, has dropped his brush in utter despair.

The second largest park along the crest of the Rockies is Glacier Park in Montana, so called because of the fact that within its borders are found more than 60 living glaciers. These glaciers, however, are all small and do not compare with the glaciers in Mount Rainier National Park, or even with those in Mount Olympus National Monument. But Glacier Park excels in other features, especially its mountain lakes, many of which surpass in beauty those of any other section of the country. At the western entrance to the park lies Lake Benton, a superb sheet of water 10 miles long, and affording glorious views of the surrounding mountains. Corresponding to this, at the eastern entrance, is Lake St. Marys, also about 10 miles long, from whose shores there rise abruptly stupendous mountain peaks, giving views of rare sublimity. St. Marys is always beautiful, even when the storm clouds gather and the thunder rolls and the winds lash its surface in fury. One may spend many days of unalloyed delight by its shores.

And St. Marys Camp is an admirable base from which to make excursions to other points of interest. Among these the trip to Lake McDermott is especially popular. Here, close by the Continental Divide, there nestles an alpine gem of the first water.

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Rarely can one find a combination of mountain, lake, glacier, and forest scenery so commandingly beautiful. And from Lake McDermott, too, various side trips can be taken which are highly rewarding. One of the most enjoyable of these is that which follows a mountain torrent up to its source in Iceberg Lake. Here, in a glacial cirque at the foot of great cliffs which rise sheer for 2,000 feet and more, lies a glacier whose ice is continually breaking off into miniature icebergs which float about the lake. Rather a chilly locality, one would say, for wild flowers to choose as a home, yet upon the very borders of this icy pool there flourishes a host of brilliant flowers—spirea, asters, harebells, geranium, elk grass, painted brush, etc.—a jovial company.

Return to St. Marys Lake may be made over Piegan Pass, a wonderful trip of some 22 miles, terminating at Going-to-the-Sun Camp, where the surrounding scenery is among the grandest in the entire park. The mountains, instead of being named "Mount Jones," "Mount Smith," etc., are named after old-time Indian chiefs or to commemorate Indian legends. "Red Eagle," "Little Chief," "Almost-a-Dog," "Single Shot," "Siyeh," "Going-to-the-Sun" are some of these. From St. Marys the trail leads to Gunsight Lake, with side trips to Blackfeet Glacier, Pumpelly Glacier, etc., and then over Gunsight Pass and on to Lake McDonald, passing Sperry Glacier on the way. The northern portion of the park, which, however, is reached with some difficulty at present on account of the scarcity of good trails, abounds in alpine scenery of the most rugged and picturesque type.

The Rocky Mountain National Park, one of the latest to be established, is located in the northern part of Colorado and includes some of the most impressive and strikingly beautiful scenery of the whole Rocky Mountain Range, centering about Longs Peak (altitude, 14,256 feet). The park is notable for its easy accessibility, being within a few hours' trip from Denver either by train or automobile. The western entrance is at Grand Lake, a delightful summer resort, and the eastern entrance is by way of the winding river canyons, fascinating in their wild beauty, which lead to Estes Park, a region long famous for its many attractions as a summer home. Estes Park, while not within the actual bounds of the national park, is yet an essential portion of the park, as it forms the chief starting point and base of supplies for all excursions in the park proper. One might easily spend a month in Estes Park and enjoy a new excursion almost every day. Among these trips may be mentioned the following: Up Black Canyon to Hallett Glacier on Hagues Peak; by way of the new Fall River road to Specimen Mountain and over the Continental Divide at Milner Pass; also over the divide by way of Flattop Mountain and down

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to Grand Lake; following the trail from Moraine Park up to Fern Lake and still higher to Lake Odessa; another trail to Loch Vale, Glacier Gorge, and Taylor Glacier; climbing to the summit of Lily Mountain, the Twin Sisters, Estes Cone, etc.

But the crowning excursion in Rocky Mountain Park, for those who are competent to undertake it, is the ascent of Longs Peak. This is usually made from Longs Peak Inn, the home of Mr. Enos Mills, who has rightly been termed "the father of Rocky Mountain Park" because of his long and persistent devotion to its interests. Under ordinary conditions the climb can be made without danger and with no especial difficulty, good muscle, steady nerves, plenty of "wind," and a fair degree of gymnastic ability being the requirements. After leaving timber line the surrounding country opens up in truly magnificent style, and on reaching the summit the view in every direction is sublime in the extreme.

Wild animal life in Rocky Mountain Park is peculiarly interesting, there being a number of bands of mountain sheep within the park, while everywhere one finds abundant opportunity to observe the habits of the beaver. As to wild flowers, the number is almost countless, and the midsummer display is beautiful beyond expression.

Colorado is fortunate in possessing still another national park, situated in the extreme southwestern corner of the State—Mesa Verde National Park. This park was created for the purpose of preserving a most interesting series of prehistoric cliff dwellings which were discovered a few years ago in some of the canyons of Mesa Verde. It is a decidedly novel experience to ride 30 miles to the summit of this mesa, and then, on coming to the rim of one of the canyons, without having previously seen a sign of human habitation, suddenly discover, halfway down the perpendicular wall of the canyon, a whole village of stone houses sheltered within a great cave. And it is yet more novel, on descending the steep trail leading to the cave, to explore one of these community dwellings, to note the plan upon which it is built, the excellence of the masonry—far surpassing that of present-day Indians—the peculiar forms of doorways and windows, the fireplaces, the curious underground kivas or ceremonial chambers, the attempts at frescoed walls in places, the finger prints of women and children made in the fresh adobe mortar when the stones were first put in place, the deep grooves in the solid rock where the men sharpened their stone axes, for these structures were built in the Stone Age when tools of metal were unknown. These grooves are pathetic, likewise the rough scarf marks still to be seen on the ends of beams used for supporting the second and third stories of the dwellings. Who these cliff dwellers were, where they came from, how long they lived here, where they went to; these are problems in archæology which are far from being solved. Three of

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the principal groups of buildings, the Cliff Palace, the Sprucetree House, and the Balcony House have been put in excellent repair, under Government direction, and bid fair to last for still another indefinite period.

The people who formerly dwelt here have left abundant evidences, not merely of their skill in masonry, but in the making of pottery and fabrics. They possessed also a considerable artistic sense for a rude people, for their implements and vessels of earthenware are profusely ornamented. An astonishing fact, hard to be explained, is that some of their designs duplicate early Christian and even ancient Greek and Egyptian patterns.

But Mesa Verde is not the only national park devoted to the preservation of antiquities. Casa Grande National Park, in southern Arizona, includes what is probably the most remarkable structure on this continent—a great stone house of singular construction and use unknown, so ancient that when it was first discovered by Spanish explorers in the early part of the sixteenth century it was then an antique ruin, and among the native tribes of the region there was no shadow of tradition respecting its character or history. Montezuma's Castle and the Tonto Ruins, also in Arizona, are included among the national monuments, both preserving excellent specimens of the cliff-dweller's work. Of similar character are the Navajo and Walnut Canyon Monuments, also in Arizona. In February, 1916, the Bandelier National Monument, in the Rio Grande Valley, N. Mex., was created. Within an area of 18,000 acres there are included a large number of cavate dwellings which have exceptional archæological interest. It is proposed to extend this area farther to the north so as to include the remarkable Puye Mesa, the whole to be called the National Park of the Cliff Cities. Still another region of fascinating interest along the same line is the Canyon de Chelly, in the Navajo Reservation, where are found a series of cliff dwellings in the red sandstone walls of a box canyon, which in itself possesses extraordinary beauty. This canyon is not yet even a national monument, but measures have been taken looking to its establishment as such.

Coming next to the national parks on the Pacific slope, the first to engage attention is the Mount Rainier National Park in the State of Washington. The crowning feature of this park is, of course, Mount Rainier, the highest mountain on the Pacific coast, and one of the most majestic peaks to be found anywhere in the world, for the entire altitude of the mountain (14,408 feet) can be seen from sea level. The glacier system of Mount Rainier is immense, covering 48 square miles and including 28 distinct glaciers, some of which are of enormous size. The mountain also presents many interesting evidences of its ancient volcanic activity. The ascent of the moun-

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tain is frequently made and proves a most inspiring experience. Like a diamond in a setting of emeralds, Mount Rainier is surrounded by a number of most charming natural parks, in which the display of wild flowers, in their abundance, variety, novelty, and brilliancy, is quite on a par with the magnificent aspect of the mountain. High up on the mountain slopes one may sometimes meet with a herd of wild goats, also an occasional flock of ptarmigan—that bird of arctic habits which apparently loves to dwell amid perpetual snow.

But Mount Rainier was not always the highest mountain on the Pacific coast. In prehistoric times another mountain in southern Oregon towered above Mount Rainier. But this mountain, which was a mighty volcano like Rainier, met with a sad catastrophe one day. Either the whole top of the mountain was blown off in some terrific explosion or else the mountain swallowed itself, so to speak, the latter being the generally accepted theory of geologists. Whatever the fact was, we find to-day an immense caldera occupying the highest level of the mountain, and within this great crater there is a lake, 6 miles in diameter and with a maximum depth of 2,000 feet, of indescribable beauty. This lake is in the center of Crater Lake National Park—one of the most interesting and beautiful of all our national parks. The lake itself—a deep ultramarine blue in color, the steep walls inclosing it which rise in places to a height of 2,000 feet above the lake, the glowing tints of copper and sulphur and amethyst which the volcanic rock exhibits here and there, the graceful drapery of the mountain hemlocks both within and without the crater walls, the quaint "Wizard Island" which was upheaved after the major cataclysm, the neighboring snow-crowned peaks—all these combine to make a picture which the beholder will ever remember with utmost delight.

California rejoices in possessing no less than four national parks, as well as several national monuments. Entering the State from the north, we first come to the Lassen Volcanic National Park, created in the summer of 1916, which contains, among other interesting volcanic phenomena, Lassen Peak (10,465 feet altitude), which has become widely famous of late on account of its awakening from a long slumber and indulging in a prolonged series of spectacular fireworks.

Yosemite National Park is surpassed in size only by the Yellowstone and Glacier Parks. Many people confuse Yosemite Valley with Yosemite Park. The valley is included within the park, but only as a single feature, the area of the valley being only about 8 square miles, while the area of the park is 1,125 square miles. Still, even if the valley stood absolutely alone, it would be well worthy of high distinction as a national park. For within this limited compass it seems almost as if nature had sought to bring

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together the most magnificent and graceful specimens of her handiwork. Yosemite Valley has been often described and illustrated, but in spite of this every visitor on entering the valley is met with a revelation of grandeur and beauty such as he had never before conceived. And the vision never palls. One may spend weeks in the valley; he may visit it repeatedly, yet the wonder and the glory of it are ever fresh and awe compelling. El Capitan, Cathedral Rocks, Half Dome, Mirror Lake, Vernal Fall, Nevada Fall, Yosemite Fall, Bridal Veil—these are names familiar to a multitude of people through verbal descriptions and pictorial reproduction, but only those who have seen the reality can begin to appreciate what Yosemite Valley means.

But having seen Yosemite Valley one should by all means undertake a tour of Yosemite Park. Tuolumne Meadows, some 30 miles north of the valley, is now easily reached either by trail or automobile road and forms an admirable base from which to explore a large section of the High Sierra as well as to visit many localities of notable character in the northern portion of the park. Mount Lyell, Mount Dana, Kuna Crest, Tioga Lake, Mono Pass, McClure Glacier, Dog Lake, Conness Peak, Piute Mountain, Rodgers Lake, Matterhorn Canyon, Kerrick Canyon, Tilden Lake—these are only a few names. There is the marvelous Grand Canyon of the Tuolumne, a stupendous gorge, beginning shortly below the Tuolumne Meadows and extending westerly for nearly 25 miles, carved out of the mountain mass by an ancient glacier, with walls rising sheer from 4,000 to 5,000 feet high, while through the narrow canyon there courses the Tuolumne River in one continual succession of glorious cascades and waterfalls. Difficult of access as yet—for there is no trail except through a small portion of the canyon—it rewards the explorer with some of the most magnificent canyon scenery on the American Continent.

At the lower end of the Tuolumne Canyon lies Hetch Hetchy Valley, in many ways a counterpart of Yosemite Valley, yet with a marked picturesque quality of its own. Those of us who have seen Hetch Hetchy in all its primitive beauty can not help a feeling of sadness in view of the fact that the valley has been given to San Francisco for an artificial water reservoir.

The Sequoia and General Grant National Parks were established for the purpose of conserving some of the most notable groves of that magnificent tree, the *Sequoia gigantea*, relic of an earlier geologic age, found only in California, and commanding the highest interest on account of its immense size, its majestic dignity, and its hoary antiquity. Unquestionably, these trees are the largest and the oldest of all living things. Many of them are over 300 feet high, with a trunk diameter at base of from 30 to 40 feet,

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and an age dating back certainly 5,000 years and more. Few objects in all the outdoor world are worthy of such heartfelt reverence.

It is proposed to extend the boundaries of the Sequoia Park to include a region of mountainous country along the crest of the Southern Sierra and its western slope drained by the Kings River and its tributaries. If this shall be done, the new park will bring under national protection Mount Whitney (the highest elevation within the United States proper), Mount Williamson, Mount Tyndall, the famous Kings River Canyon, Tehipite Valley, and many other mountains and valleys of great scenic interest.

Brief reference may be made in closing to some of the more notable national monuments, which are to all intents and purposes national parks, though occupying a somewhat different status and being created by presidential proclamation instead of a specific act of Congress.

The Devils Postpile, in California, is one of the most remarkable collection of hexagonal basaltic rock columns to be found anywhere in the world. The Devils Tower, in Wyoming, is a closely allied formation, rising to a height of more than 1,200 feet above the surrounding plain. The Colorado Monument and the Wheeling Monument, both in Colorado, present some very striking results of erosion in the form of lofty monoliths and curiously carved and colored cliffs. The Natural Bridges Monument, in southern Utah, includes three of the largest and most striking natural rock bridges known anywhere. A similar formation is the Rainbow Bridge Monument, also in Utah, the height of which is 309 feet and the span 278 feet. The Petrified Forest Monument, in Arizona, includes three areas where are found the silicified remains of ancient coniferous trees, of great interest and beauty. Mount Olympus Monument, in the northwestern corner of Washington, is a mountain area of superb character and unusual scientific interest, its extensive glacier system being particularly notable. A plan is on foot to give this region the full status of a national park, which it amply deserves. The Sieur de Monts Monument, on Mount Desert Island off the coast of Maine, a locality of historical interest and scenic beauty, is the only national park or monument yet created east of the Mississippi.

There are many grand canyons in the United States, but only one Grand Canyon; and by far the greatest, both in area and importance, of all the national monuments is the Grand Canyon of Arizona. No words can describe the awful majesty and the sublime beauty of this stupendous chasm. As Prof. Van Dyke has said, "Instead of its being, as is sometimes stated, the eighth wonder of the world, it is the first wonder of the world." A bill is now before Congress, with good prospect of its being passed, to make the Grand Canyon a full-

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fledged national park, and thus to preserve for all coming generations, under full governmental control and protection, this masterpiece of nature's production.

The Harriman Fiord in Alaska, an arm of Prince William Sound, is a proposed national monument of exceptional interest and attractiveness. Only 12 miles long and a mile or so in width, it is an amphitheater of sublimity tremendously impressive and exquisitely beautiful. On all sides rise lofty mountains whose summits pierce the clouds at altitudes varying from eight to eleven thousand feet above sea level. Five huge glaciers descend directly into the fiord, discharging icebergs with roars of thunder, while many other glaciers lie on the higher slopes, the azure hues of their pinnacles and crevasses glistening in the sunlight. Few white men have ever seen this wonderful fiord, but in coming days, with the opening up of the new governmental railway, it is certain to become widely known and prized as one of our finest scenic assets in all Alaska.

One other national monument should be mentioned, not merely for its intrinsic interest, but because it honors the name of one who devoted his life, in a very real and most effective way, to the welfare of our national parks—the Muir Woods of California. This is a tract of primitive redwood forest on the slopes of Mount Tamalpais, across the bay from San Francisco, which was deeded to the Government by Hon. William Kent, a Member of Congress, and named after John Muir, the eminent naturalist and writer, in recognition of his efforts to awaken interest in the wonder and glory of the outdoor world. A day spent with Mr. Muir himself in the Muir Woods was one never to be forgotten. Utterly oblivious of the fact that any special honor was conferred upon him in connection with the park, he was continually intent upon discovering new forms of beauty in the trees or shrubs or vines or flowers, all the time unfolding from his vast store of information facts of deep interest pertaining to the varied features of the park. And this was characteristic of his entire life. He gave himself in whole-souled enthusiasm to the study of nature's methods and mysteries, not solely for his own satisfaction, but that he might interpret them to others and thus reveal something of their wonder, their beauty, and their spiritual significance. To quote a word of tribute from one who knew him well:[1]

His was the vibrant voice that sang of God's manifestation in the harmonies and beauties of nature. His was the hand that pointed the way to the clear and high places of earth. His were the feet that beat paths for others to follow, leading to shrines in the forest or meadow, on the glacier or cliff of rocks, by the river's edge, or on the mountain's summit. His name will endure, not alone because it is written upon the Muir Glacier of Alaska or among the giant Sequoias of the Muir Woods in California, but because it is written in letters of sincere love upon the hearts of thousands whose lives his own has sweetened and brightened for all time.

[1] Prof. E. S. Meany, of the University of Washington.

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THURSDAY, JANUARY 4, MORNING SESSION.

SUBJECT, "THE RECREATIONAL USE OF THE NATIONAL PARKS."

The Thursday morning session was convened at 10.08 o'clock, with Mr. Enos Mills presiding.

THE PRESIDING OFFICER, MR. MILLS.

Ladies and gentlemen, I am sure you will confer a great favor on the speaker as well as obtaining a distinct advantage for yourselves if you will gather forward in the room.

The subject to be discussed this morning is "The recreational use of the national parks." The first speaker on this subject is Mr. W. A. Welch, who is the chief engineer in charge of the Palisades Interstate Park. As some of you may not know, we will say that this park embraces about 30,000 acres of land. Altogether, $8,000,000 have been expended in this park. Five millions more are already available and will soon be spent. More than one-half of this entire sum has been donated privately.

Now, the man who has charge of the spending of this money, on whose shoulders falls the burden of carrying out the admirable plans and policies of this interstate park machine, is the man who is to speak this morning. The work which this man is doing is really evolutionary and revolutionary. Heretofore, when too many workmen have been afflicted with "blue Monday," they were simply dropped from the rolls and others substituted. Heretofore, when people got bad, they were put into prison, and when there were too many of them they enlarged the prison. In later years, especially the last few years, society is finding that much inefficiency and crime and indifference may be prevented by providing outdoor recreation. Hence, great numbers of new parks are being established. They are being used for the benefit of everyone.

Some years ago, a well-known philosopher said that a man's chief business is his amusement. Not until recently, as I have suggested, has society taken this statement seriously; but it is a known fact that people progress on their playgrounds, and if they do not have playgrounds they do not progress. From now on I think you will see increased areas made into playgrounds, and they are to be given to the public to use these playgrounds. At any rate, the Palisades Interstate Park is within two hours' travel of 10,000,000 people; so you can see the opportunities this park has to serve the people.

Well, now, fortunately, it is being developed in what I think will be considered the best possible manner. There are no French fixings, there are no marble columns, there are no unnecessary decorations;

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that park is handled so as to adjust itself to the needs of the people. For instance, there is a large hotel in one part of it. This hotel is conducted by the park management. No one is making money out of the visiting public. There isn't a concession in this park. If you want a boat ride, the boats are there free, because that park belongs to the people and is run for the people.

To me the most inspiring spot in the world to-day is the Interstate Park—the Palisades Interstate Park. The man who is in charge of it, who is doing the greatest work that I know of at the present time, Mr. W. A. Welch, will now speak to us.

MR. W. A. WELCH, CHIEF ENGINEER, PALISADES INTERSTATE PARK.

THE MAKING OF A RECREATIONAL PARK.

Ladies and gentlemen, I have a little son about 3 years old whose greatest pet is a very small kitten, and I took him to the zoological park in New York a short time ago, and told him that I would show him some more kittens. I took him into the lion's house. He stopped at the door and looked around at those cages of the lions and tigers and leopards and jaguar, and then he tugged and tugged at my coat, an said, "Papa, we are in the wrong place. These are all big kittens here." And that's the way I felt when Mr. Mather asked me to tell you something about our poor little park, because I know something of the national parks; I know their wonders and their magnificence and their glories; and it seems very foolish to bring up something about our little park up in New York State. But our time is very limited; we are late; and if you will permit me, I will just read through a little sketch of the park we have here and then show you a few of the pictures that will visualize to you the uses that the people are making of the Palisades Park.

I will show you just a few pictures of the people in the park, and so try to visualize to you some of these things. The first of these pictures which were taken under the palisades were necessarily taken in the morning, and so there are not very many people in the park.

(Thereupon Mr. Welch showed a number of pictures of the Palisades Interstate Park in New York State.)

The Palisades Interstate Park had its inception in a movement started in the nineties to save the palisades from the quarrymen.

The first plan was a proposal in 1895 to induce the National Government to acquire the cliffs and the land under them for a military reservation. This idea, however, was abandoned, and then the New Jersey Federation of Women's Clubs began an active campaign which resulted in the creation by the New Jersey Legislature of a

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commission to investigate and formulate a plan for the creation of a park.

This resulted in legislative action by the States of New York and New Jersey in 1900, creating the Palisades Interstate Park Commission, each governor being empowered to appoint 10 commissioners, 5 of whom must be residents of his State, and the other 5 residents of the other State.

The New York bill carried an appropriation of $10,000 for expenses, and the New Jersey bill a like appropriation of $5,000. The commisisoners, who serve without compensation, decided to devote all of this money to surveys and the acquisition of lands, and to spend none of it for administration purposes, and for 10 years they had their office literally "under their hats."

This $10,000 appropriation was used to bind an option on the largest quarry which was then operating opposite One hundred and fifty-fifth Street, New York City. The price of this property was $132,500, and the balance, $122,500, was donated by citizens of New York, the option taken up and the quarry closed. The surveys showed that there were approximately 900 acres of land in the 12-mile strip under the palisades over which the commission had jurisdiction. The commission estimated that this could be acquired at the rate of $500 per acre, and they asked the New York Legislature for $400,000 and the New Jersey Legislature for $50,000, this proportion being determined by the fact that the entire strip was much more accessible to New York City than to any of the large cities of New Jersey.

The legislatures made the appropriations as requested, and within the next nine years the commission succeeded in acquiring practically all of this land by purchase. In 1910 the jurisdiction of the commission was extended northward along the west bank of the Hudson River to Newburgh and westward to include the Ramapo Mountains in Rockland and Orange Counties, N. Y.

New York State voted a bond issue of $2,500,000 and transferred to the commission the Bear Mountain prison site of 500 acres. Mrs. E. H. Harriman donated 10,000 acres of land and $1,000,000, and other individuals donated $1,600,000, while New Jersey appropriated $50,000 for the construction of the Henry Hudson Drive through the park.

In this past year New York State has again voted $2,500,000 for the acquisition of additional lands and a like amount is being raised by private subscriptions for further development of the park.

At present the commission own about 30,000 acres of land and have expended in its acquisition and development nearly $8,000,000, 55 per cent of which has been contributed by individuals. The commissioners, all of whom are active business and professional men

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who have unselfishly devoted their time and labor all of these years to the creation of this great playground, are entitled to the sincerest gratitude of all lovers of the great out of doors. Only we of the organization know how much time they have willingly taken from their private duties to devote to the study, planning, and execution of this project, or properly realize the immense value of the services that this body of men are willingly giving to the people—services that it would be impossible for any private enterprise to purchase.

Four years ago the commission really began the work of opening up and making the park accessible and usable. They did some work at first by contract but found this expensive, unsatisfactory, and destructive; so they organized their own engineering and construction force, purchased their own plant, and have done all their work in this way. Our organization, which was taught first of all to destroy nothing, preserve at any cost all vegetation and natural beauties, has always been free from political influences and is now a thoroughly loyal, well-knit force, which can carry out work of any kind or magnitude. Many of its members were taken from the former residents of the park lands, this being particularly true of our patrol and forestry forces. We have taken most of our building materials from the property, having our own sawmills, crushers, etc.

The palisades section, which extends for 12 miles along the west shore of the Hudson River directly opposite the upper part of New York City, embraces all the land between the top of the steep cliffs and the river. This was a veritable wilderness, cut off entirely from New Jersey by the cliffs themselves and almost inaccessible from the river because of the rough bowlder-strewn shores, the only landings being at the few quarrymen's and fishermen's huts. There were the wrecks of many abandoned schooners and fishing boats half buried in the few beaches which existed.

The area between the shore and the steep cliffs, which is from 300 to 1,000 feet wide, was heavily timbered and covered with a mass of dense undergrowth and was almost impenetrable. The entire shore front has been cleaned up, wrecks and other obstructions to navigation removed, 13 large docks constructed out to deep water where river boats, excursion steamers and barges can land, a number of smaller docks erected for motor boats and small pleasure craft, stone bulkheads built in front of the marshy shores, and many acres of these marshes filled in and made into playgrounds.

Three large motor-boat basins were constructed which accommodate more than 1,000 pleasure boats.

Ferries have been established between New York and the park. A number of bathing beaches were built by covering the rough shingle with crusher dust from the quarries, bathing floats pro-

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vided in the deep water off these beaches. There were many springs along the river's edge. These have all been cleaned out, protected, and provided with pumps. Pavilions, bathhouses, shelter houses, refreshment stands, comfort stations have been erected, a path from 10 to 30 feet broad has been built along the whole shore. Many other paths lead from this up into the groves which have been cleared out and made into beautiful picnic grounds and many sites for campers provided in the upper end of the park. Stairways have been built down the face of the cliffs to enable the people of New Jersey to get into the park.

One of the most wonderful driveways in the country has been constructed up the cliffs at Englewood and is now being extended northward along the foot of the cliffs 5 miles to Alpine. This section will be opened next summer and will be one of the finest scenic drives in the East. This development right at the door of the world's greatest city, easily reached by ferry for a 5-cent fare, has brought several million people into the park during the past three years.

One of the beaches which is nearly a mile long has been reserved for the use of canoeists, and many thousands of the members of the canoe clubs, as well as the unattached canoeists of New York and New Jersey camped there during the past summer. Just north of Alpine a number of camps were conducted last season by the neighborhood associations of New York. These were week-end camps for boys and this proved a most successful experiment. Hundreds of working boys from the city would go over on Saturday afternoons and remain in the camp until early Monday morning. They had tennis and hand ball courts, bathing and boating, their climbs through the rocks and woods, and two nights each week away from the stifling tenements. Next year we hope to have several more camps in this locality that will accommodate several thousand boys. To the north of these camps and farthest away from the regular ferries general camping is permitted and encouraged, and several thousand people camped in this area last year. There were many families among these campers who remained in camp most of the summer, the bread winners spending their vacations and all of their week ends there. Still farther to the north Forest View Dock and Playground was a favorite place with the social organization one-day excursions. There were more than 90,000 of them landed at this dock last season. A few miles north of the New Jersey State line and on the west slope of the palisades ridge, behind the village of Nyack, the commission own a detached tract of over 500 acres. A part of this tract was developed by the State of New York for a rifle range, and several substantial buildings erected for the use of the National Guard. This

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range was abandoned just after its completion and given to the commission, who have restricted it to the use of working girls as a summer camp ground. This camp is conducted under the auspices of the Y. W. C. A., of New York. There were more than 5,000 girls in this camp during the past season. They were taken up there from the city, provided with tents, bedding, food, medical supplies, enjoyed the playgrounds, the woods, and mountains, straw rides to the river and bathing beaches at Hook Mountain and were talked to by competent teachers around their nightly camp fire for two weeks at a cost to them of $7 each. This camp has been most wonderfully successful, and the commission hope to greatly enlarge its capacity and make it possible for many more girls whose lives are bounded by the shops and tenements to each year enjoy a little fresh air and sunshine.

Just north of Nyack the palisades ridge bends back to the river and for 5 miles the country is just like the lower palisades. The commission now own all but one quarry site in this section and that one has been condemned and is now in the courts. Very little development work has been done in this section, but we hope soon to open it up as a great summer camp ground. The next 8 miles of the Hudson shore is occupied by the villages of Haverstraw, Stony Point, Tomkins Cove, and Jones Point, which lies just at the southern edge of the Highlands. Just inside the Highlands on the site of the proposed Bear Mountain prison, the commission has made its greatest development. This is about 40 miles from New York by the river, and in order to get the people up here at a reasonable price, the commission arranged with a steamboat company to run boats from New York to Bear Mountain daily throughout the summer at a round-trip fare of 50 cents for adults and half rate for children on week days and 75 cents on Sundays and holidays. These steamers brought more than 300,000 people during the past summer.

The commission built two large docks and filled in several acres at this landing, erected steel ramps leading from the river to the lake, and all of the regular passenger steamers on the river make regular stops here now. The West Shore Railroad has established a station here.

On a shelf at the foot of Bear Mountain, 165 feet above the Hudson, lies Hessian Pond, a beautiful body of clear spring water, 40 acres in area. Just south of this pond we have made a 20-acre playground, with baseball fields, tennis courts, football fields, and running tracks.

On the shores of the lake there is a circular dancing pavilion of rustic construction on the floor of which 500 couples can dance and the floor and the music are free. There are ice houses buried in the side of the mountain with rustic picnic pavilions on their roofs. There are many tables and benches in the groves for picnic parties

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and swings for the children. There is a boathouse on the lake and 150 rowboats which are free. These boats are in such demand that it was found necessary to limit the time of their use by each party. To accomplish this we devised a scheme by which we require each party taking out a boat to deposit 25 cents to insure the return of that boat within 40 minutes. This deposit is returned if the boat is brought back on time. The year before last so many deposits were forfeited, the great majority voluntarily and after the boats had been returned on time, that we netted $1,360 from these free boats, and during the past season they have yielded $1,872.

Between this playground and the lake we built Bear Mountain Inn, a great restaurant which accommodates more than 3,000 people at one time. The first story is of great arches built of the moss-covered bowlders taken from the old stone fences on the property. The second story is of huge chestnut logs from our forests. The dining rooms are all open—no doors, no windows. The first floor is devoted entirely to lunch counters and self-service, and here the prices are as low as the quality of the food will permit, and a substantial hot dinner can be obtained for from 30 to 40 cents or cold lunches, milk, coffee, tea, and iced drinks may be purchased and carried to the tables in the picnic groves. On the second floor in the large dining room, which seats more than 1,000 people, a table d'hôte dinner may be had for $1.25, or à la carte in proportion. In the special dining room on this floor—a room occupied and designed especially for automobilists, the service and prices equal those of the best hotels of the world.

All of the food in all of the restaurants is of the same grade—the best the markets afford. In the basement is an extensive refrigerating plant, a bakery, an ice-cream plant, a laundry, a bottling plant where all of the soft drinks are manufactured with the water from Bear Mountain Spring—one of the finest springs in the world—storerooms, and electrical plant. There are two completely equipped kitchens on the other floors. This restaurant is conducted by the commission and more than $100,000 worth of business was done there during the past season. Just north of Hessian Pond is the site of Fort Clinton. Across the deep gorge of Popolopen Creek, beyond, is the site of Fort Montgomery, the first capital of the State of New York. These forts we have just connected by a steel arch bridge 600 feet long and a little higher than the Brooklyn Bridge, over which passes the new boulevard which the commission are assisting the State highway department to build along the west shore of the Hudson—the extension of the Henry Hudson Drive, destined to be one of the country's most beautiful motor roads.

These forts, which are now the property of the commission, have not been disturbed since the revolution. Great hemlock and pine

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trees are growing on the old ramparts and through the ruins of the old buildings. We are now opening out and uncovering these old works and marking and in some instances restoring parts of these historic spots. In the heavily timbered plateau behind Fort Clinton and at the north end of Hessian Pond, sites have been prepared for several hundred camps, and these have all been occupied during the past two seasons. Many families camp here, it being near the boats, the inn, and playground, and altogether an ideal camping spot. Last season 25 shop girls were maintained in one camp here, who secured all of their supplies from the inn and were chaperoned by the deaconess of one of the New York churches. The girls were kept in camp for two weeks each, and all of the expenses of the camp were defrayed by one gentleman in New York. We are now building with money contributed by this gentleman log buildings for a larger camp, which he will maintain in the same manner, and there are several other parties now talking of doing similar things next season.

The majority of the commisison's holdings lie back from the river behind Bear Mountain. A tract of heavily wooded, well-watered mountains extends 16 miles to the westward and 3 to 6 miles wide. These mountains are covered with heavy deciduous forests and contain a number of fine streams and lakes. We have carefully forested most of this tract and have planted more than 2,000,000 conifers.

This to me was the most interesting feature of our last season's work.

These poor little brats, almost skeletons, who had never been off the New York streets in their lives, who had lived in the poorest, most congested tenement districts of the East Side, coming as some of them did from families of ten or a dozen, whose only windows opened on a filthy air shaft, who had never had enough to eat in all their lives, were brought into these beautiful woods, taught to swim in the lake, fed on the best and most nourishing food, exercised and drilled regularly by expert physical culturists, given the best of medical care, mothered by trained nurses, and so carefully handled that there was not one case of illness among 450 boys, and this at a time when the whole East was terror-stricken by the infantile paralysis epidemic.

These boys were shown more of nature's wonders and charms in this one short summer than their people have known in all of their lives, and this is one of the things, it seems to me, which really makes for preparedness, and we want more of these camps—not only for the undernourished, but for all of the city children. The commission is now discussing the ways and means to establish in the park a number of classes or kinds of group camping. Camps

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similar to this nutrition camp—camps like the Boy Scout camps or boys who can pay their way; group camps for families who can be fed from a common mess hall at the lowest possible rate; group camps for poor families to be supported by charitable organizations; group camps for families or individuals to be fed from a common mess hall or the inn at a higher rate; the individual camps of parties who can afford to pay a small fee for their permits and possibly the leasing of acreage around some of the lakes for the erection of summer camps under the direction of the commission's forces.

The water, sanitary, and garbage-disposal problems have, we think, been solved. The experiments which we carried through last season were so successful that we feel that these essentials can be properly taken care of.

One whose boyhood was passed in the mountains and plains of the West, who roamed and camped and hunted at will in that great playground, who learned to love all the mountains, valleys, and streams, the trees and flowers, and all nature's wonderful creatures, can not but feel that the present generation is missing so much from their lives, so much that will make them better men and better women, not only better physically but better mentally and morally. We who know and understand this can not do too much to enable them to see and enjoy some of nature's wonders and to work out for themselves some of the little mysteries which so fascinated us and so carry with them through life the sweet memories which are so dear. This is the feeling we have instilled into our park organization, the feeling that makes our work so fascinating, the knowledge that we are opening up and making accessible to everyone our little bit of unspoiled wilderness, and we are all proud of our little 30,000 acres of land because it can be used by so many people, for it is within an easy two hours' journey of more than 10,000,000 people.

THE PRESIDING OFFICER, MR. MILLS.

I am sure that everyone will agree that Mr. Welch is doing a splendid service for mankind; and in this connection, as you know, someone has said that the best use to which scenery could be put was to make it into a park for the benefit of men, women, and children. Surely the work that he is doing in this interstate park well justifies that use of scenery; and in this connection, why knock this proposed national park of the forest lying between Washington and Baltimore? This forest is being depleted every day. It is becoming more valuable every day. If it isn't done to-day, five years from now all that remains you will have to buy at exorbitant figures. I would

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like to see a national park made of the forest region that is obtainable between Washington and Baltimore.

Will Mr. Barber please come to the platform? Now, the gentleman who next speaks to you climbed Mount Washington in 1858. I am not going to say anything about his age. Someone has already said that the automobile has divided the human race into two classes—the quick and the dead; but the human race also is divided into two classes—those who are afraid of weather and those who are not. Now, weather is one of those peculiar intangible things that will bear acquaintance. The idea of winter sports, you will readily see when people become so enthusiastic over them; surely the winter weather will bear acquaintance. At any rate, before you realize it, our national parks and other places will be used all the year round; they will be used in the winter as well as in the summer; and the man who speaks to you to-day has had many weather experiences.

Still further in this connection, many of the national park supervisors are already at work on a plan for the using of the parks in the winter time; and I am sure that these supervisors realize, after hearing Mr. Welch to-day, that they hold positions of extraordinary honor and responsibility. I am glad to know that the park supervisors are to view the Interstate Park to see what Mr. Welch is doing in that region, for then, I am sure, they will return to their respective parks determined to make the best use of these parks for the people at all seasons of the year.

At any rate, Mr. Barber is an enthusiast on winter sports and winter outings. He will tell you in his own way about his mountain climbing, and I am sure that you will enthuse with him.

Mr. J. W. Barber will now speak to us on "Winter sports in the national parks."

Mr. J. W. Barber.

WINTER SPORTS IN THE NATIONAL PARKS.

Mr. Chairman, ladies, and gentlemen, referring to Mr. Mills's introduction, those who know me would hardly say that winter sports is my special hobby, but I am pleased to bring that subject before you to-day for the reason that I think there is great need of systematic work being done in this country for the development of winter sports. There has been a great deal said here in my hearing—and I have attended most of these meetings—in regard to the use of the mountains, their beneficent influence upon mankind. But nothing has been said until to-day of the recreational value of sports.

Now, I have lived just about long enough to realize that there is no recreation that does not have sport. A man that is not sportively

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inclined is not a man that usually goes into the wilds and takes up recreation as a pastime.

We have a slogan, and a very good one, I think, which we first heard about three years ago, "See America first." In explanation of my attitude toward this slogan, I climbed Mount Washington in 1858; but it was two years earlier, in 1856, when I, with my father, waded through the snow in April in the Franconia Range and mounted an observatory which was then getting into disuse, in this the oldest national park in America. It was then old. I say "national" in the sense that it is the only large section worthy of the name of a national park which was used for two generations or more nationally. I refer to that section of New Hampshire which commences at The Flume, passes The Old Man of the Mountain and Mount Lafayette, and then continues around the White Mountains.

After all this long time this section, traversed by 2,000 automobiles, say, 10,000 per day on any fine day in August, has come into its own, not, however, under the Department of the Interior but as a forest reserve under the Department of Agriculture. It will be, I hope, ere long the recreational center for the East, and is to-day an open playground for the people of New England and all of our country as well.

From 1866 to 1895 I visited rather systematically the sport centers and the recreation centers of our country, and it was at the camp in Paradise Park, which was shown you last night on the screen, where Mr. Mather first caught his inspiration, that I found, in comparing notes with others, that I had seen as much and more of our own country than any one of the 200 in that camp. "Well, old fellow," I said, "it is about time that you took a vacation on the other side, as you have 'seen America first.'" Accordingly, I have spent two seasons in Switzerland at the time of their winter sports; and that is my reason for being here. But, as my time is quite past and there are others to come, I will forbear anything that I was to say and will ask for the lights to be turned out in order that I may give you some idea of how winter sports are conducted in Switzerland, in the effort to show you that it is very easy for the American people to adapt many of their sports for use in our own country.

(Whereupon pictures of winter sports in Switzerland were shown.)

THE PRESIDING OFFICER, MR. MILLS.

I am sorry to have to cut down the time of the speaker, but we are already very late and there are others to follow. Will the other speakers please come to the platform—Mrs. Ada F. Chalmers, Dr. Hugh M. Smith, and Mrs. Marion Randall Parsons.

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The next speaker who will address you is a lady who believes in giving her children the greatest advantages in the world; that is to say, out where nature is big and real, where the children will have their imagination, which is the greatest gift that man possesses, stimulated and expanded along the proper lines. This lady will tell you far better than anything I can suggest the experiences she has had with nature. I now take pleasure in introducing to you Mrs. Ada F. Chalmers, who will speak on "Family hiking in national parks."

MRS. ADA F. CHALMERS.

FAMILY HIKING IN NATIONAL PARKS.

Mr. Chairman, ladies, and gentlemen, as a child growing up I always had a great desire to play in a small patch of woods near my home. Here I spent all the time allowed me for play; making mud pies and building imaginary castles. In the spring it was here I found the first violet; in the summer I spent hours wading in the small creek on the edge of this woods and catching small yellow butterflies; and in the fall I spent many happy hours tramping through the dead leaves there, gathering chestnuts which I would carry home and roast.

To me the woods and all it contained were my friends and playfellows; but strange to say, my brother and cousins who made their home with us did not enjoy my pleasure. They preferred the louder, noisy games of the day, which gave me but little pleasure. Truly, it was a case of a child being alone among many, for my mother did not share my love for the woods either.

Years passed, and I grew to womanhood; later assumed the duties of wife and mother and made my home in a distant city. Although my little patch of woods was now lost to me, my love and longing for it did not die.

One early spring day, when the longing to be out of doors is strongly felt by all, I received a letter from an old girl friend, asking me to come to Montana and visit her, holding out as a special inducement a camping trip which we all would take to one of our great national parks.

Of course I accepted, and around this trip revolves the story which prompted Mr. Mather to invite me to come from Missouri to place before this conference the story of our camping trip and a few suggestions.

I offer the facts and the story of our trip as a suggestion for other mothers and all persons who wish to enjoy our national parks and can not afford to pay the necessary high charges which must prevail in the national parks until enough people patronize them to enable the Government to reduce the rates.

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Knowing absolutely nothing about the conditions within the park, but having a born desire and curiosity to see and enjoy some of the wonders and beauties of my own country even though my purse was small, I immediately began to plan for one good time.

Letters passed frequently between Mrs. G. and myself, and we arranged between us that as much as possible of the clothing necessary for our camping trip should be made from old clothing on hand.

Our attic and barn were thoroughly searched, and for several weeks before starting for Montana I spent every spare moment trying to piece together our outfit.

For a time my task looked hopeless, and several times I was on the verge of giving up; but finally two shirts, pockets included, were made for myself from two discarded woolen skirts; from a third skirt I fashioned a thoroughly up-to-date walking skirt. This skirt, of which I was so proud, became the bone of contention between Mrs. G. and myself. She insisted that my skirt would be in the way and only add extra weight. I did not contradict her statements, but I could not make up my mind to adopt trousers and leave my skirt at home. However, I compromised by making the skirt very short (only to the knee), and I only wore it when in or near one of the chalets. With a pair of Duxbak hiking bloomers, woolen stockings and underwear, heavy walking shoes, gloves, and leggings I soon found my outfit complete.

The next thing was to outfit the boys.

My eldest boy had a heavy Boy Scout uniform which he had outgrown. This was brought down from the attic, and after I had thoroughly overhauled the coat, pants, cap, and leggings, it became the prized possession of my youngest boy. With a woolen sweater, underwear, hose, gloves, and heavy shoes, outfit No. 2 was completed.

Two flannel shirts and a heavy duxbak hunting suit of his father's was made to fit (in imagination only) the eldest boy. These were his first long trousers, so who could blame him for admiring their length and ignoring the extra girth at the waist?

A rubber poncho and two woolen blankets each comprised our bedding. We each carried a 2-quart water bag, for which I had made a flannel case which could be slipped on and off. At night we used these bags for pillows and during the day on long tramps they took the place of canteens.

The day before we were ready to start for Belton, we purchased outright two shaggy bronchos from a guide for $25; also a supply of bacon, flour, matches, candles, and meal, a folding oven, and a second-hand aluminum cooking outfit. The bronchos and the above-named goods he agreed to deliver to us two days later when we should arrive at the head of Lake McDonald.

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August 3 found us eager and ready to start on our big trip through Glacier National Park.

We took the train to Belton, a jolly crowd of six, and then, via stage and launch, reached the head of Lake McDonald. Here we were joined by the two pack horses which were to be our traveling companions throughout the trip.

G's horse was old, slow and sure, and bore the scar of many a hard knock, while ours had such a noisy way of breathing that we named him "Blow." He was a very sociable fellow and had a never-tiring way of offering you his right hind leg whenever he thought you were behind him. However, the old adage, "Change not the old friends for the new" holds well in Glacier National Park, for the new ones are scarce and hard to find, so "Blow" and I became fast friends, as I always endeavored to arrange my meetings with him face to face.

After learning how to pack our supplies and fasten them to the pack saddle, we hit the trail and walked what seemed to be 8 or 10 miles uphill and reached the Sperry Chalet about dark. Here we pitched our first camp and decided to remain for the night. Mr. G. set up our tents while my boys gathered wood and built a fire. Mrs. G. and I then got acquainted with our new cooking outfit. While she prepared fried potatoes, bacon, and onions, I made corn bread and set it to bake. These, with coffee and cookies, completed our first meal.

The next day about noon we broke camp at Sperrys Chalet, and a short distance down the trail we fell in with a party of four gentlemen from Billings who were enjoying a little fishing trip. The distance from Sperry to Gunsight, our next camping place, is about 10 miles, uphill and over unbroken paths of snow. We reached Gunsight at dark, my boys and I tired and hungry and my friends very much out of sorts. When supper was over, and we were all getting ready for a good night's sleep, Mrs. G. surprised us all by announcing that she had had enough of camping and was going to return home in the morning. This was indeed a disappointment to us all, especially my boys, who were already in tears. After talking the matter over with the children, we decided that we would remain in the park and hit the trail by ourselves. After a good night's rest, immediately after an early breakfast, we broke camp, my friends to return to Belton, my boys and I to continue the trip by some 12 miles through the pine woods to Going to the Sun Chalet.

On our arrival here late that afternoon the children and I pitched our first camp. My! how carefully I removed each strap rope and bundle from off of the pack horse, and how frightened I was lest I should never be able to get them evenly balanced and securely tied on again.

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We remained in the Going to the Sun district for four days, fishing, gathering flowers and leaves, and visiting many points of interest within 5 or 6 miles of our camp.

The morning of the fifth day here, after purchasing a fresh supply of food at the chalet, we started on our trip to St. Mary Chalet. It was a beautiful day, and the scenery along the way beggered description. We met no one along the trail, but we saw many kinds of beautiful birds.

Arriving at St. Mary we pitched our second camp, built a fire, washed up, changed shoes to rest our tired feet, and enjoyed a fine trout supper. The trout were the gift of a gentleman tourist who was stopping at the chalet. While eating supper, I suddenly realized that I was tired, so without waiting to say "good night" to the stars we just tumbled into bed. The following morning we awakened, refreshed, rested, and eager to start the new day.

We remained at St. Mary five days, and it was while here that my youngest boy caught his first trout. My! but he was proud! He would not allow me to cook it, but insisted that he was going to keep it and take it back home with him. So sincerely did he desire to keep this trout that, during my absence from camp that afternoon, he melted the mutton tallow which I used to waterproof our shoes with, and tried to coat the fish with tallow, instead of paraffin.

Many Glaciers Chalet lay 25 miles or more northwest of our present camping grounds. Owing to the long distance over the rough trail I hesitated and wondered whether it was advisable to undertake the trip with the children and our short-winded pack horse. However, we decided in favor of the trip, and sunrise next morning found us up and breakfast over. We took the trip by easy stages, camping when and where we pleased along the trail. We reached Many Glaciers in the late afternoon of the fourth day. Here we spent five most enjoyable days. The morning of the sixth day at Many Glaciers found me up at dawn watching a most wonderful sunrise. After an early breakfast, our marketing and food supplies safely packed away, we cleaned camp and hit the trail for our return trip to St. Mary.

When about two hours on the trail misfortune overtook me. My right shoe sole suddenly divorced itself from its upper, and it was only by the aid of strings torn from a bandana handkerchief and by wearing my stocking over my shoe, that I was able to reach St. Mary Chalet.

Here for the first time in 24 nights we slept in a bed under a roof. The following day I sold our outfit to a party of tourists for $5 more than the original cost, and made arrangements for myself and children to return to Belton by auto 24 hours later.

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On figuring up expenses I found that the total expense of our trip was $108.17, or $4.16 per day; $1.39 per day for each person, myself and two boys, 9 and 12 years old.

I think that you will agree with me when I say that our trip points the way to a new field of enjoyment open to thousands of women and children.

It proves that persons of limited means who love the great out of doors and beautiful mountain scenery can enjoy it as fully as those who can afford the luxury of the hotels. In fact, I believe that they can enjoy the scenery far more, for they are not obliged to return to the hotel at regular hours for meals and bed. They are free to linger as long as they please in the beautiful spots far away from the hotels and camps, and may stop where and when they please to fish, photograph, or sketch.

My experiment proves more than this. It proves that the national parks could be and should be enjoyed by the masses, both from an educational as well as a recreational standpoint. With the opening of commissary or food stations within our national parks the camper and hiker would be able to replenish his food supplies, and women and children of limited means could then enjoy long summer periods there, when the men folks could not secure vacations long enough to go with them.

This would open the way to an immense field of enjoyment. Groups of students younger and older would then be able to spend whole summers in the wildest parts of our national parks under the care of a competent woman only.

Furthermore, experience is not necessary. Any woman of fair physical strength and endurance may confidently undertake a trip of this kind provided only that she has courage and good common sense, the ability to take care of herself, and enough confident resourcefulness to meet the emergencies of an unaccustomed and rough environment.

It is not an easy life, but it is a splendid experience.

The woman who undertakes it must be able to walk 10 miles or more over mountain trails without undue fatigue. She must not be afraid of a horse, and she must learn how to pack her outfit on her horse each morning and unpack it at night. She must learn how to pitch a tent, make a fire in the open, and be able to cook the simple things that make living cheap and comfortable in our great out of doors.

But all of these things are easy. The principal requisites are the love of nature and the great out of doors, a stout heart, an even temper, and common sense.

Some day this experiment must be made more carefully and completely for the benefit of the cause. The woman making it must have

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a good equipment, and keep a daily record of everything which will help other women to undertake similar trips. The record, with full instructions, must then be published and made available to all the women of modest incomes in the land.

I thank you.

THE PRESIDING OFFICER, MR. MILLS.

I am sure Mrs. Chalmers will be interested to know that this year a college woman will be employed as one of the guides in the Rocky Mountain National Park. I know of one other woman guide there, and I am certain that from now forward the number of lady guides in the park will be increased.

Now, the time is late, but I want to make three little announcements: To-night in this room Mr. Stephen R. Capps, of the United States Geological Survey, will give an illustrated lecture concerning the wild animals around Mount McKinley. Also, to-night there will be an illustrated lecture concerning scenes in the Rocky Mountain Park, with pictures taken by Mr. Clatworthy.

The next speaker, Dr. Hugh M. Smith, Commissioner of Fisheries, is a man thoroughly acquainted with his subject, but I really believe the fish man has never been appreciated and has been more sinned against than sinning. For instance, one of the best qualities which anyone can possess is the gift of imagination, and it is always discouraged. The only man I know of who usually has nerve enough to give his imagination full sway is the fisherman. Now, you know it is extraordinary how fast a fish grows from the time you catch it until you tell about it that night. Hence we have with us to-day Dr. Hugh M. Smith, whose business it is to keep the streams supplied with fish that thousands of people may find their health and recreation while chasing the fish, and at the same time stimulate a wholesome imagination. Dr. Hugh M. Smith.

DR. HUGH M. SMITH, OF WASHINGTON, D. C., COMMISSIONER OF FISHERIES, DEPARTMENT OF COMMERCE.

FISH AND FISHING IN THE NATIONAL PARKS.

Mr. Chairman, ladies, and gentlemen, the message I have to convey may not be as long as some fish stories you have heard, but may prove to be as dry as the proverbial angler. In view of the lateness of the hour, perhaps it would suffice for this occasion if I were to resume my seat after simply saying that the national parks should be and can be made the finest fishing resorts in the country, and that the Bureau of Fisheries is cooperating with the Department of the

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Interior and the park authorities in bringing this condition about and in maintaining it after once being established.

I trust that the various specialists and interests and activities represented in this notable conference will not feel aggrieved if I remind them that there is no one feature of the national parks that appeals to so many people of such diverse temperaments and callings as do fish and fishing. I take it that no one would dispute the statement that a very large percentage of the visitors to the parks are attracted thereto wholly or partly by the fishing.

In my own experience, which I am sorry to say has been somewhat limited, about the first question that one asks or has propounded to him when he lands in a national park is, "Which would you rather do, or go fishing?"

About three years ago the Bureau of Fisheries undertook the task of systematically stocking with suitable fishes the waters within the national parks and forests, and a comprehensive plan covering such work was agreed upon after conference with the Departments of the Interior and Agriculture. Prior to that time, although valuable and lasting work had been done, there had been no definite or sustained policy looking to the maintenance and increase of the fish supply in the vast areas within the reservations, and no adequate attention had been given to the wonderful and inspiring possibilities that are thus presented for augmenting the attractiveness and usefulness of the parks and forests.

For the proper administration of the national parks with regard to their fish life, an indispensable preliminary duty devolving on the Government is the investigation of the physical and biological character of the water of each park with particular reference to the present fish life and the possibility of improving by artificial means the number and variety of its fishes. Such an investigation has been made by us in many of the parks and is planned for others as rapidly as circumstances will permit.

In 1916 we conducted an investigation in Glacier Park from the standpoints of the ichthyologist and the fish culturist. The inquiries confirmed the widespread belief that this is a field of almost boundless opportunity for intelligent fishery effort, and indicated that this peerless park, with its Atlantic, Arctic, and Pacific drainage systems, with its innumerable lakes and streams, and with the diverse biological conditions that accompany such different physical features, can possibly be made the leading game-fish preserve and angling resort of the whole world.

What has been accomplished in the Yellowstone Park by intelligently aiding nature in producing and maintaining desirable game fishes is well known. That field serves as a model and an object

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lesson, and the same general policy which has been followed there is recommended for all other parks.

It is not desirable at this time and place to enter into a detailed discussion of this matter, but I may be permitted to outline very briefly some of the factors involved in the proper development and management of the national parks with regard to their fish life:

(1) Different waters should be reserved for different kinds of fish. Where nature has evolved a particular type of fish in a given water, it will usually be found to be the part of wisdom for man to maintain that type instead of disturbing the balance by promiscuous transplanting.

(2) The introduction of nonindigenous fishes and the transfer of species from one basin to another in any park should be strictly prohibited except by authority of the department.

(3) The stocking of the waters of each park should be in accordance with a definite and fully matured plan; and the responsibility for keeping the waters properly stocked should rest on the Bureau of Fisheries.

(4) Adequate regulations for the preservation of the fish life in each park should be formulated and issued; and each park visitor should be promptly acquainted with the regulations.

(5) Where the laws of adjoining States are applicable, it will be the best policy to adopt them.

(6) The regulations should be liberal and designed to afford the greatest freedom of fishing consistent with the preservation of the supply.

(7) The duty of determining the regulations that are required in each park should devolve on the Bureau of Fisheries in consultation with the local authorities.

(8) For each park there should be issued by the Government for gratuitous distribution a pamphlet or booklet describing and illustrating all of the fishes therein, and giving information regarding their size, habits, game, and food qualities, etc., such as the general visitor requires. Such a document prepared by the Bureau of Fisheries for the Yellowstone Park has proved very useful and popular.

It behooves the legislative and executive branches of the Government to appreciate the superb fishing attractions offered by the national parks and to give all necessary financial and other support for the proper development and utilization of their aquatic resources. Anglers—professional and amateur—constitute a large and influential element of our population. Most of them, while still retaining the enthusiasm that old Izaak Walton instilled in his dis-

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ciples, have the feeling, which all true anglers must have, that it is not all of fishing to fish. To such, each of the national parks, with its characteristic scenic beauty and historic, scientific, and sentimental interest, will ever be a kind of piscatorial Mecca to which great bands of devotees will make annual pilgrimages.

The Presiding Officer, Mr. Mills.

The brief paper by Dr. Smith shows how important it is to keep the lakes and streams in our national parks supplied with fish; also it shows what a scientifically important work it is. From the few paragraphs of the able paper which he read you can readily see that here is a fish man who understands his business.

But now, ladies and gentlemen, one of the best organizations for encouraging outdoor life, one which has from the beginning aggressively and consistently supported national parks legislation, is the Sierra Club, of California. As you know, throughout his life, the grand John Muir was its president. It was the hope of the members and directors of this club to encourage outdoor life, and this they did. In every way they persuaded people to go to the outdoors, and in recent years this organization, working largely through cooperation, has given hundreds of people excursions into the wildest places on the Pacific coast.

The lady who is to speak to you to-day has been the guide, the counsellor, and friend of many a "tenderfoot" on these outing trips. For many reasons I am glad to see that she has come here to address you to-day. For instance, she is an outdoor woman; and then she is one of those peculiar persons who is always expected by the organization to which she belongs to do all of the work that the other people do not do. Now, for eight years Mrs. Parsons has been the drudge of the Sierra Club, but she does her work carefully, whether it is in the receiving line, or whether it is cooking a meal by camp fire, or editing the magazine, as the case may be. But at any rate, Mrs. Parsons has climbed practically all of the big peaks on the Pacific coast, a record, I think, not made by any other woman, and certainly by no man; so you see she enjoys outdoor life. There is, by the way, a tribe of Indians in Colorado that called their country the "Land of the Blue Sky," and, when I think of how many towering peaks this lady has ascended and stood upon—on their pinnacles against the clouds and the sky—I think of Mrs. Parsons as the "Lady of the Blue Sky," Marion Randall Parsons, of the Sierra.

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Mrs. Marion Randall Parsons, of the Sierra Club.

LIVING IN THE NATIONAL PARKS.

Visitors to national parks are grouped on two sides of a great divide—on one side those who cling to roofs of board or canvas, on the other those who trust themselves to the open sky.

Of the first group I know little, except as I happen to have passed its different types on the trail—the supertourist, who likes to have the way made smooth before him, to be shown what to admire and how to pass from wonder to wonder with the least expenditure of time and thought; the mere tourist, willing to subject his body to some discomfort in order to see what the world has to show, looking a bit dejected about it, perhaps, when he thinks nobody is looking, lolling and lurching upon his saddle, or even holding himself tenderly aloof from it with both hands; and those happy-hearted, more-time-giving visitors who seek the parks for sheer love of the beauty they have to show. All these visitors love the parks and enjoy themselves, but not, I feel quite sure, as intensely as we do on the gypsy side of the divide. People who live in houses can only half know the charm of the mountains, for houses have a habit of claiming us in the hours of greatest beauty—at evening, and at morning, and through all the still, starry hours of the night.

All of my national park days have been gypsy days. In the Olympics or at Mount Rainier tents, of course, were necessary for occasional shelter from storms. In Yosemite Park or in all the glorious Southern Sierra of the greater Sequoia I had no shelter at all except the friendly arms of pines.

But gypsies even are of several kinds. There is the gypsy de luxe, who travels horseback and takes with him cook, packers, and his own pack train. I was of this class myself once for a few days, when three of us had a packer and two pack mules all our own. The packer, I regret to say, failed to take us at this valuation, as we learned when he said good-by. He looked my companion's "city clothes" up and down with a critical eye. "Say, I never could get on to you callin' yourselves gypsies de looks," said he. "Them pants and all. But she sure is some looker in town."

At the other end of the gypsy social scale is the "mucker," the camper who is getting his vacation at the least possible cost. He comes sometimes from a country town, driving up with his family as far above the parched valley heat as the roads will carry him. Then, abandoning his wagon, he turns the farm nags into pack horses, and travels the trails to the nearest fishing ground. Or he may be a lad from the university, traveling with a donkey, and living for incredible weeks on bacon and the simple, deadly corn dodger.

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But, of all the gypsy tribes, I am most familiar with the ways of mountaineers, the mountaineers of the mountaineering clubs. We go for a month or more each summer to the national parks, in bands of 100 or 200 members, with cooks and packers and woodchoppers to do our chores, and a pack train of 60 or 70 animals to carry the baggage. In the course of a summer we may travel a park from end to end and see byways that not even the rangers know. We may shift our big camp almost as many times as there are nights in our journey. I have not time to tell you how we do it, how we have learned by experience how many pounds of sugar a growing boy will consume in a month; how many tons of ham and bacon it takes to feed 200 mountain appetites; how many hobnails must be supplied for the stout soles that disintegrate upon the stony trails and turn their wearer's apprentice to the cobbler's last; how many minutes it takes to turn nailed-up boxes, tied-up sacks, and sealed cans into a hundred steaming-hot dinners.

Let me, instead, take you with me on one of my gypsy days in Yosemite National Park. To begin the day properly I should by rights first go to bed the night before. And to get to bed I have first to find it, and I have carelessly allowed the moon to set before I start out on my quest. After the bright circle of camp-fire light where my evening hours were spent the outer darkness, where my sleeping bag somewhere lies, has a mazelike and bewildering character. One tree looks very like another, and the forest is very full of them; and a single candle, even with a tin-can reflector, makes very little impression on the encompassing blackness. After one false start I head for the commissary fires and from them set out confidently—nearly into the river that time. Again I about face, but my lantern flash evokes a masculine ejaculation that sends me veering off again. At last I come upon the tree beneath whose branches my sleeping bag lies spread out upon a mattress of pine needles. A heap of smaller bags, containing all my worldly possessions, lies alongside. This, for to-night, is home. I sit upon my sleeping bag to undress. It is a long, envelopelike bag, made of wool comforters and covered with a brown waterproof cover that makes me, when snugly encased, look like a big fat sausage. Crawling into it and getting my feet clear down to the bottom is rather like trying to lift myself up a ladder by the boot straps.

My bed doesn't feel quite as comfortable as I had imagined it might when I so carefully scraped and patted the needles into place before dinner. There is something under my spinal column that feels like the Great Western Divide. At last, after a due amount of twisting and squirming, I find my proper angle of repose. Then only do I really begin to be conscious of the clear bright splendor of the night. The stars are more sparklingly near than when it is frostiest

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in the lowlands. By their light I can even dimly perceive the grouping of near-by trees and the streaks of snow on the mountain walls beyond. In the broad bend of the river the stars are shining like a little strip of sky at my feet.

Sleep seems like a mere waste of experience, but though, or perhaps because I do not court it, sleep comes quickly. The stars are paling when I next open my eyes. The eastern sky changes to yellow, then glows to orange. Two dark red mountains rise high against the sunrise.

It is time to get up—after 5 o'clock. My bag is coated white with frost and it takes some courage to crawl out of it. My fingers grow numb as I struggle with my yard long shoe laces. Washing in the icy stream is so shuddering a process that I, coast-bred Californian, realize as never before why cleanliness is ranked so high among the virtues.

The cooks have been at work since daybreak. Coffee, mush, bacon, and corn bread are ready. In cafeteria style I find my own white enamel plate, tin cup, knife, and spoon and pass in front of the rough log table to be served. I sit on a fallen log to eat my breakfast, with a bandana spread across my knees for tablecloth and napkin in one.

Breakfast over, I am ready for the trail. Six of us are going to-day on a long ramble from the camp in Tuolumne Meadows, across country toward the base of Mount Conness. We plan to follow no trail, not even a blazed way of that kind once described as "jackassable, but for horses impassable." We stop first at the Soda Spring and then set off through the open meadows. The fine, tender grasses are starred with pink and lavendar daisies; golden sheets of buttercups are spread over the marshier ground; blue lupines and violets, pink shooting stars—all alike are sparkling with a white sheen of frost. The Tuolumne River, flowing rapidly in wide sweeps and bends through the brilliant green of the meadow, flashes in the early sunshine. Along the southwestern horizon rises a rim of snowy peaks over 12,000 feet high, and below their crowns the mountain flanks are clothed in a dark forest of tamarack pines.

We are climbing, now, up a forested ridge called Juniper Crest, swinging around it toward Delaney Creek. The forest of tamarack pines here is broken by vagrant trees, strayed into the sheltered nooks from other zones—Jeffrey pines, with ruddy bark, and sturdy, spreading arms; slender, virginal hemlocks; junipers, ragged, bent, centuries old; even red firs, though most of them sadly tempest-racked and broken. Now we are following Delaney Creek, no broadly flowing river but a cascading brook singing its way down in sparkling rapids and falls over ledges of granite. In crossing it disaster overtakes me, for in giving a hand to a tottering sister she pulls me into the stream. It seems unfair that she should get wet

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only to the knees while I fall ignominiously prone and am soaked from head to toe. We delay only long enough to have our laugh out, for the sun will dry my drenched clothing quickly, and colds in this blessed country are unknown.

Three or four miles of forest walking brings us to the base of Ragged Peak. We had no thought of climbing it, but when its flanks rise temptingly in our path we think it will be just as easy to climb over it as to circle it. So we start upward, bowlder leading up to bowlder, like the steps of a pyramid. On the crest of the ridge climbing grows more difficult, and on the broken fingers of the summit it is a matter of scrambling. From the crest we gain a superb view. Conness, a great frontal precipice and field of snow, towers close on one side; on the other stretches the gleaming array of the whole Tuolumne-Merced Divide, with black Banner and Ritter rising above it at the head. Ten miles of the Tuolumne Meadows are outstretched below us, from the mouth of Tuolumne Canyon up to the Kuna Crest.

To reach Young Lake, where we plan to lunch, we cross through a gap to the right of the Pinnacles. The snow field that crowns this little pass stretches far down the farther side, and down it we go coasting gloriously. On the shore of the lake, beneath a group of hemlocks, we stop for lunch. We roll together a pile of stones for a fireplace and fill the teakettle—a blackened tin can wrapped in a smutty bandanna. The can first held a gallon of tomatoes, but we have hammered down its rough-cut edges, punched two holes with a nail, fitted in a wire handle, and manufactured a teakettle. How good lunch tastes—hard-tack and cheese, sardines, raisins, and chocolate, and, for a surprise, two carefully cherished, juicy oranges, saved, with what self-restraint none but a mountaineer knows, for this gala day. Until one has been without such things for a month one can not realize what emotions an orange can arouse—an esthetic delight like the strains of a symphony or the poetry motion of a Russian ballet.

Then comes the joy of rest, of complete physical relaxation after hours of toil. We lie upon the ground and even fall asleep if we want to, quite regardless of conversation or of company. And then, rested and utterly content, we while away an hour or two in talk and the easy laughter that comes when mind and body are equally at ease and content. And as we lie there a picture is imprinting itself upon memory—a blue lake dancing in full sunshine; ragged groups of trees encircling it; high cliff walls streaked with snow; the broken pinnacles of Ragged Peak rising behind; the noble front of Conness just ahead.

We quench the embers of our fire at last, rinse out the teakettle, and start again on our ramble. We circle the peak and strike back

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through the woods. Time to saunter along and watch the birds and chipmunks as we go; time to watch the warm afternoon color grow in the trooping clouds, time to lie dreaming along the stream sides if we like; for a party from camp is to join us, and supper will meet us on the way.

We are a little early at the meeting place. The wide sweep of Delaney Meadows is empty of all life except a badger who shambles over to his hole and disappears at our coming. This is the meadow so loved by John Muir when, more than 40 years ago, he camped here with the despised sheep and noted their devastation. We have him to thank that the park is preserved for us in all its fresh and unsullied beauty to-day.

By the time we have chosen a good spot for supper our friends appear leading the sumpter mule.

We have got to cook supper. A dozen cooks busy themselves with it, regardless of the fact that they court proverbial disaster. They slice and butter bread; fry bacon and broil steaks; mash up the soup powder and stir it into the boiling water; delicately manipulate the fire under the rice kettle, so that it shall be cooked dry, and yet not scorched—no tenderfoot's job, the rice! Others get wood and start a fire to warm and light our dining room a little later. The meadows are still glowing with golden light, growing warmer and ruddier until purple shadows begin to close in from the forest edges.

Our fire shines brighter and brighter in the dusk. We gather close about it to finish dinner. There is still light enough down by the stream to wash up by—each man his own dishwasher, of course.

Our labors ended, we return to the camp fire for an hour of songs and stories before we start down through the moonlit woods toward camp. Dew is falling in the forest, covering everything with silvery mist. The low moon is just ahead, and in its light the figures of our companions are glorified by a shining aura. The ground is covered with delicately sparkling silver threads, out of which fairies might weave a fabric of dreams.

So we go down to the meadow again, back to our quiet homes beneath the pines. No words can fully tell what the day has been, what joy there was in the mere living and breathing, what strength of friendship the companionship of the trail has brought, what physical well-being and mental stimulus and spiritual content we carry with us back into the world of work again.

THE PRESIDING OFFICER, MR. MILLS.

Mrs. Parsons has given you a glimpse, a broad glimpse, of the joys that lurk around our camp fires in the national parks. We shall now hear read a report of an interesting and valuable experiment at Mount Rainier.

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ANNA LOUISE STRONG, MANAGER OF CAMP SEATTLE, MOUNT RAINIER NATIONAL PARK.

USING A NATIONAL PARK.

We all want to stimulate the use of the national parks. That is why you are here, and why I am taking the time to write you an account of my experiences, while in the rush of preparation for a New Year's snowshoe trip with the mountaineers to Paradise Valley on Mount Rainier-Tacoma. And although my camp experiences have dealt mainly with one park only, yet I am sufficiently acquainted with some other parks to believe that in all of them, as in Rainier National Park, there are large areas unreached by the public, and large groups of the public who do not reach any portions of the park. Consequently, I believe the organization of Camp Seattle offers a suggestion to persons living near and interested in any national park.

Rainier National Park lies about 100 miles from the city of Seattle and 60 miles from Tacoma. One small corner of it is reached by automobile road, and boasts two hotels (until this year one hotel and a camp). To this corner come the vast numbers of tourists, many of them spending only one day in a round trip from Tacoma by automobile, and others remaining a day or more in one of the hotels, taking a side trip to the Paradise Glacier and the Nisqually Glacier, and returning with no conception of the some dozen mountain parks surrounding this gigantic peak. In fact it would take months adequately to explore the slopes and subpeaks of Rainier, and even from one single camping spot in Paradise, it is possible to arrange 10 or more all-day trips, each absolutely different from the others, and each leading into wild splendors.

The rest of the mountain is inaccessible by road, but is reached by numerous trails. In the upper altitudes trails are unnecessary for mountaineers provided with a map, compass, and aneroid, and the method of travel leads across glaciers and rocky ridges into uninhabited wildernesses. There are no stores of provisions available and no shelter except a few huts built by the Government. These other parts of the mountain have been visited only by those hardy explorers who could carry their own provisions and blankets on their backs for several days into the wilderness. An exception to this is occasionally found in parties, like the mountaineers from Seattle, traveling with their own pack train; or in other groups hiring pack animals and guides.

Many of us living in Seattle wanted to help open the mountain to more people. We believed that there were hundreds of persons, teachers, shopgirls, working people and their families, professional

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people on small salaries, who could not afford a long stay in a hotel, and who, on the other hand, were not sufficiently well acquainted with mountains to join the mountaineers and provide themselves with the complete outfit of sleeping bag and mosquito net which such a trip entails. The mountaineer trip comes only at one definite date and persons with vacations at other times can not join; moreover the mountaineers reach Rainier only about once in four or five years. We wanted to make it possible for any person willing to dispense with certain hotel comforts for the sake of a longer visit to the mountain, to come for periods ranging from four days to a week at the lowest possible cost.

So we started Camp Seattle a cooperative camp in Rainier National Park. We invested no money; we took practically no financial risks, except the risk of working a few weeks without salary. The cost of staying at the camp was $1.25 per day, and we hope in two years' time to reduce this to about $1 or less. This included army cot, mattress, tent covering, food, alpenstocks, cold cream, grease paint, etc., and leadership of hikes. In fact, any person with no equipment except some old warm clothes, a good pair of hiking boots (and bloomers for the women) could be made comfortable in camp. Some came and enjoyed themselves without the hiking boots and bloomers, but these were really essential to the complete program.

The cost, $1.25 per day, is just half the charge in the hotel camp, and less than one-third the cost of the hotel itself. We were able to reach this rate by eliminating two great expenses, the cost of service and the cost of uncertainty. The hotel camps must maintain a force of servants all week for guests who come mainly for Saturday night. We ran each group from Monday to Monday with a possible change on Friday for those who could not stay the entire week. While this plan failed to meet the needs of those who could only spend a day or two, we felt that it was not our business to care for tourists and transients, and that we had a large field among the men and women with two weeks or a week of vacation, who were quite willing to be convinced that "it takes a week to see Paradise Park." For these we arranged different hikes each day, and it is on record that more than a few of the regular hotel guests, seeing our parties start off to explore some new glacier or peak, were persuaded to believe that there were reasons for waiting over an extra day or two to see the sights.

We began our activities in May, with a scouting trip to the mountain and the publication of a four-page announcement. This was our only outlay and it was paid back before the camp opened. We circulated the folders among the teachers, the summer-school students, the department stores, the Y. M. C. A. and Y. W. C. A., and in other places. We required a deposit of $5 to reserve a place, and the payment of the whole amount before leaving the city. From our de-

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posits we planned to buy the tents and camp equipment, reserving enough from each deposit to guarantee the cost of the food to be supplied. We were, however, very fortunate in securing tents and much equipment from the Tacoma Y. M. C. A. and we did not buy our own till nearly the end of the season. We were handicapped by a late season which made it necessary to take all our freight and baggage on pack animals, and which cut the time for opening the camp to five weeks instead of eight, but in spite of these difficulties we were able on the $1.25 per day—with a continuous camp attendance running from 20 to 60 but averaging 40 to 50 and reaching a total of 270 for the season—to run the camp, pay salaries to cook, camp manager, and office manager, but a dozen new tents, 54 cots, two dozen alpenstocks, and some minor equipment, and close with $100 worth of groceries on our hands, which were turned over to the hotel in consideration of a promise to return an equal amount next year.

A study of the camp's accounts shows that each $1.25 received for one day's stay in camp was spent as follows:

Food material	$0.35
Freight, mostly on food	.20
Equipment, tents, etc.	.25
Cook	.10
Other items of camp management, including installation and manager's salary	.15
Promotion, printing, and maintenance of Seattle office	.20
	1.25

Some comments on this table may be in place. The cook, who in winter months is head of the science department in a near-by high school, saved an amount fully equal to his own salary by his understanding of food values and the economy in the cost of food, without, however, causing the slightest criticism concerning either quality or quantity. The freight was unexpectedly high, but will not be reduced in coming seasons, as we plan to go even further from the beaten track. The equipment was not quite all purchased this first year. It could have been purchased on the above allowance if we had been able to run the camp for seven or eight weeks instead of five. The last two items include a salary for a camp manager and an office manager in Seattle. These persons did not receive as much salary as they have received in other work. They were both sufficiently interested in the camp to offer their services free of charge if necessary. It was felt, however, that it would set a wrong precedent if full-time services were accepted without pay, and that if the success of the camp warranted it, these persons should be paid.

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It will readily be seen from the above accounts that any educational or recreational body or board, having already on its staff persons who can be assigned to the duties of camp manager and office assistant, can reduce the price of the camp even in the first season to $1 per day, and if this group has enough permanence to be willing to pay gradually for its permanent equipment, the cost can be still further reduced. Municipal park and recreation departments should be able to establish camps of this kind to great advantage. But without any financial backing or guaranteed paid assistance, any individuals interested in developing the national park in their vicinity can doubtless run a camp on the basis I have given above.

As soon as plans for the camp were actually under way, several kinds of assistance were offered. Blankets to the number of 200 were loaned by the city of Seattle. These were of great assistance, and without them the camp would have been limited to those persons who could provide their own blankets, thus eliminating the summer school students and many young women not living at home. The city park department also gave the full time of Maj. Ingraham, a veteran explorer of Rainier, as leader of hikes and recreation. The fact that the camp was managed under the auspices of the Central Council of Social Agencies, a delegate group representing most of the educational, civic, and philanthropic bodies of Seattle, doubtless aided in securing this cooperation.

On every Monday night, with the opening of each new camp, an organizing camp fire was held, and the camp officers elected. We formed a miniature municipality, with five departments. The fire chief chose two assistants and thus formed a fire department to secure wood and build fires. A commissioner of public works was also chosen and allowed two assistants in the tasks of digging garbage holes, draining mosquito pools, staking down tents, etc. The recreation department, with three members, managed the evening camp-fire programs. The board of health, with three members, supervised the general orderliness and sanitation of the camp. All other members, not assigned to any of the above committees, served under the commissary department, and were divided into dish-washing and table-serving squads.

I should like to describe a few of the hikes taken from the camp, but the names are unknown to most of my audience. Our trips were not limited by trails and beaten ways. We were among the glaciers and high ridges where trails can not last from year to year. We explored crevasses, scaled rock pinnacles, and went snow sliding and botanizing at the same time. More perhaps than any other park, Rainier is noted for the variety and profusion of its flowers, thicker than grass grows in eastern meadows. We saw avalanche lilies

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piercing through three inches of snow and ready to burst into bloom; we saw every imaginable color and form of blossom. And we lowered ourselves with ropes into deep canyons beside foaming torrents. The trip which remains longest in my mind, however, is an overnight hike to Summerland, a park on the eastern slope of the mountain. With a few brief directions, a map, and an aneroid barometer, seven of us made our way over deep chasms, wide and steep glaciers, and almost perpendicular cliffs, until we came at sundown to a beautiful park from which an entirely new view of the summit was obtainable. We threw our blankets down on the edge of a high cliff, under some scrubby subalpine trees which furnished firewood and protection. Before us the rocky mountain side plunged downward for a thousand feet and then swept up again in the great Frying-Pan Glacier, white and brilliant in the starlight, up to the odd-shaped Little Tahoma, to Liberty Cap, and the summit itself. As we watched, the northern lights began far down on the horizon, gradually spreading upward until they covered the sky. We knew that we were a day's journey from any other human habitation, and the lure of the wild was such that we longed to bring our camp to Summerland next year, to escape the automobilist and the tin cans he leaves in his wake.

Something of this kind is in fact our plan. The camp proved so popular that we had to turn away 100 people during one very crowded week. Our members speak of returning next year, and in all probability the numbers who will wish to come will be at least doubled. But we do not wish to have a camp larger than 50. This is a number that can become acquainted around a camp fire, and in all-day hiking trips. Larger groups are more unwieldy. So we hope, beginning next year with the Paradise Camp, to spread by the third week into two or three other mountain parks on the slopes of Rainier, establishing camps about a day's journey apart. The following year, if all goes well, we may perhaps encircle the mountain, and after that, our equipment once secured, we shall be able to reduce the cost even below the present amount, and reach groups of people who do not yet feel that they can afford the trip.

While it has been impossible to make any real study of the kinds of people coming, we are convinced, on inquiry, that less than 10 per cent of those coming to our camp would have visited the mountain if we had not been organized to assist them. Probably the number is still smaller. So we are in no sense competing with the hotels. In fact we have advertised the park in a way which will ultimately benefit the hotels also, and we have brought in actual freight bills, to the company which handles both transportation and hotels, a larger sum than they would have secured from such possible customers as we may have drawn away. The company is recog-

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nizing this fact, and their attitude, which at first was naturally one of some slight suspicion, has changed to that of appreciation.

A cooperative organization has valuable possibilities in a national park, not only in reducing the cost of its members but in opening up new territory. For the hotel company to open new places on the mountain means large outlay on a venture, and possibly years of waiting, before profits justify the project. For a cooperative camp there is no outlay except that already covered (or practically assured) by previous registrations and deposits. Members in a non-profit-making camp will endure the difficulties and hardships incident to meager equipment, and will themselves work to overcome those difficulties, knowing that their work is for the common good and not to add to another person's profits.

The mountaineers with their one-night camps and pack train blaze the trail; the cooperative camp of longer duration, greater flexibility of time and program, and somewhat greater comforts comes next; and the hotel camps for tourists can go most easily and with least risk where these have opened the way. This would suggest that it might be even desirable for the national parks themselves, in addition to granting the mere permissive use of the parks to cooperative camps, to take positive steps in near-by cities toward suggesting and stimulating them.

What time it is in Washington when this paper is read I have no means of knowing; here in Seattle it is 10 at night, and I leave before daylight for the mountain, on the snowshoe trip. The flowers will be gone and many of the well-known landmarks hidden under perhaps 20 feet of snow; but we shall find the old camp site and walk over the spot where the stove and cooking utensils, properly greased, are buried under the white drifts between four trees, awaiting another summer. We shall find the spot where we had the camp fires, and shall sing again some of the songs made up by camp members. Songs some easily in camp, from the funny ones that tell how "old Rainier is freezing in the good old summertime" to the deeper and serious moods—

When we come to the end of a perfect day
  And meet by the open fire,
And our thoughts go back to the winding way
  That was ever climbing higher;
To the cliffs of rock and the slopes of snow
  And the fields of rippling flowers,
Then whatever the world may bring we know
  One perfect day is ours.

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THE PRESIDING OFFICER, MR. MILLS.

In dismissing you, let me remind you that in a room upstairs are a number of magnificent pictures of national parks; and this evening a new room will be opened with photographs by Mr. Kiser, unquestionably the greatest outdoor photographer in the world.

(Whereupon, the Thursday morning session of the National Parks Conference was closed.)

THURSDAY, JANUARY 4, AFTERNOON SESSION.

SUBJECT, "WILD ANIMAL LIFE IN THE NATIONAL PARKS."

The Thursday afternoon session was convened with Mr. Robert Sterling Yard, of the Department of the Interior, presiding.

THE PRESIDING OFFICER, MR. YARD.

Before beginning the afternoon session I have one or two announcements to make. At the close of this afternoon's session do not hurry, because we are going to have a treat which is not on the program. Mr. Belmore Brown, artist, explorer, author—a man who gets there—has brought here to Washington some magnificent slides showing Mount McKinley.

Mount McKinley, in Alaska, is 20,300 feet high, as high as many of the Himalayas, in effect higher than the Himalayas. Mount McKinley is looked at from an elevation of 3,000 feet. The man who stands, or the woman who stands, at the foot of Mount McKinley and looks up at it looks upon a mountain rising more than 17,000 feet above the level on which he or she stands. That makes Mount McKinley a greater mountain by far than the loftiest of the Himalayas, which are seen from valleys eight and ten thousand feet in altitude. Mr. Brown has been to McKinley. He has photographed McKinley. Mount McKinley is to be made at this session of Congress, we hope, one of our national parks, and it will be one of the greatest. The pictures which Mr. Brown will show at the end of the session will be very remarkable pictures, the first that any of you have seen. They will be thrown on the screen.

Now, to-night Mr. Stephen R. Capps, of the Geological Survey, will show some pictures of the animals around Mount McKinley, for it is the greatest center, perhaps, in the world for animals. He will show you one picture of 1,500 caribou. Following Mr. Capps will come an autochrome of the Rocky Mountain National Park. An autochrome is a photograph in nature's own colors. These autochromes will be extremely beautiful, and they will be well worth coming out to see.

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Now, one more announcement. To-morrow we shall have a question box. Mr. Mather will be on the stand. He will answer questions; any who have questions which they would like to have answered may write them out on paper and leave them right on this table here. Mr. Mather will answer them, or designate some authority in the audience to answer them. To-morrow morning, therefore, will be a specially interesting session.

The presiding officer of this afternoon's session, which is a session of very rare interest because in our national parks we have the only areas in which no shot is ever fired legally at an animal not predatory, will be Mr. John B. Burnham, president of the American Game Protective and Propagation Society. Mr. Burnham has been well known for some years, and his society has been known for some years as one of the most active agencies for the protection of wild animal life in America. Mr. Burnham has succeeded in carrying game-protection laws through the legislatures of many States where they would not have existed for years to come if it had not been for his distinguished efforts and the influence of the society of which he is the president. He is, therefore, the man of men to preside at this session, which considers the wild animal life in the national parks and its preservation. Mr. Burnham.

(Whereupon Mr. John B. Burnham, president of the American Game Protective and Propagation Society, of New York City, assumed the chair.)

THE PRESIDING OFFICER OF THE DAY, MR. BURNHAM.

Mr. Temporary Chairman, ladies, and gentlemen, as I look over this highly interesting program in this most interesting conference, I am more than ever impressed by the importance of the subject of wild life, with which the present session deals.

It was only yesterday, as time goes, that in New England, one of the oldest sections of our country, conservation was unknown. Sport was derided. They said that a man who loved hunting and fishing was too lazy to work, and not smart enough to steal.

Our forefathers who settled New England were against game laws. Some of them had had their noses slit or their ears cropped off for poaching in the old country and we can not blame them for thinking game laws class legislation.

Then, too, wild life, like the forests which clothed the new country, was a nuisance. The deer and squirrels and turkeys ate their crops and the bears the pigs. The settlers used the same energy in exterminating the game they had employed in slashing and burning the forests. Their descendants have been on the job ever since as the vast tracts of gameless country bear silent witness. As a nation we have been cursed by our contempt for conservation.

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We never waked up to appreciate the value of our game, of a superabundant wild life with which a generous creator had endowned this country, until it had forever disappeared or was on the verge of extinction, then public opinion changed and a great wave of conservation swept the country, and by conservation I mean just plain common sense. The man who is well does not appreciate the value of health until he is taken sick. Similarly we did not appreciate the blessings of nature till we began to lose them. Then we realized what a shorn and barren place this old world would be without the birds and the wild creatures and how half the charm of life would be gone as well as a large slice of something which can be directly valued in dollars and cents.

To those of us who are on the firing line, this change of sentiment in favor of game conservation is both marvelous and inspiriting. It was pioneered by such men of vision as Frank Forrester, George Bird Grinnell, William Dutcher, and many others, and to all these wise and forceful men, living and dead, I take off my hat. What a splendid thing to have been a pioneer in such a movement.

When as a boy I had my first big game hunt in Wyoming in 1886, there were still wild buffalo to be shot. There were no game laws in the State and I had never heard of closed seasons or any of the other modern safeguards for wild life. An Army officer told me that in the last year of buffalo abundance, 1884 I think, he saw a pile of buffalo hides along the line of the Northern Pacific Railway, west of Medora, N. Dak., half a mile long, and piled as high as men could reach from a wagon, ready for shipment to the eastern markets.

We went about the annihilation of the buffalo in a businesslike way. The hunting parties were well organized. First went the men who shot down the animals; then came the skinners, who took off the hides and threw them in piles, marked with the emblem of the party; after them followed the packers, who loaded the hides into wagons and transported them to the nearest railroad station.

The very next year these organized bands of hunters camped on their usual grounds and waited for the buffalo herd to come. They waited for days and weeks and no buffalo appeared. No one could make those men realize that the year before they had killed the last of the herd. When they finally gave up waiting and returned to their other pursuits, they were of the opinion that the buffalo had migrated to some other country, because in previous years they had not noticed any appreciable diminution in the numbers of the animals. I talked with old buffalo hunters in the Klondike in 1897, whom you could not convince of the fact that they had killed the last of the buffalo in 1885.

It is pleasant to turn from such a picture to the present time, when every State is alive to the value of its wild-life resources and the

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Federal Government is using its power to protect the migratory birds.

When George Shiras introduced his first Federal migratory-bird law 13 years ago, the principle of the law was incomprehensible to the country, as well as the necessity for it. To-day only prejudice opposes it. It has overwhelming support in Congress and the backing not only of the Agricultural Department, but of the State Department and the Executive. Time will iron out the difficulties which confront the law, technical difficulties and not fundamental ones. The principle is forever established and the strong arm of Uncle Sam, through the Biological Survey, gives a protection which the States can not give.

But, to come to our program, first we shall hear from Mr. Henry S. Graves, who is at the head of our National Forest Service, and who is not only doing a wonderful work for the conservation of our resources of trees and timber, but who is very keenly alive to the requirements of the wild life in our national forests. It gives me pleasure to introduce a man who has given such practical and lasting evidence of his sincerity in the cause of wild-life conservation, Mr. Graves.

HENRY S. GRAVES, FORESTER, AND CHIEF FOREST SERVICE.

NATIONAL FORESTS AND NATIONAL PARKS IN WILD-LIFE CONSERVATION.

Mr. Chairman, ladies, and gentlemen, I have asked the privilege of speaking first this afternoon, as I have an important engagement a little later to-day. I am going to speak on the subject of the national parks and national forests in wild-life conservation. Our public forests and parks are the natural home of many species of our most interesting game animals. The importance of these public properties in conserving wild life in its natural state is very great to-day, and will become increasingly great as the years go by. We can never reconcile ourselves to the reckless and unwarranted slaughter of game that has all but exterminated some kinds of wild life and which promises to exterminate others unless more successful measures are used than have been employed heretofore. But we must at the same time recognize that the progress of settlement and industry means the human occupation of extensive areas formerly the range of large quantities of wild life. More and more the game has been forced back to less accessible and less used areas, considerable portions of which are now or will be comprised in public forests and parks. In the problem of permanent forest production, we must rely in the long run upon lands not suited to profitable agricultural home building; so also we will be best able

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to maintain and develop game life on areas permanently devoted to forest and park purposes or set aside specifically for wild-life preservation.

In game conservation we are passing through very much the same stages as in forest conservation. The only difference is that in the latter we have in many respects made further advances. The time was when forestry was considered a fancy of a few idealists. Not more than 20 years ago so-called practical men considered that forest-fire prevention was an impossibility. It was thought that we had forests in such abundance that there would always be plenty in spite of fires and other destructive agencies. In any case it was thought that the forests would take care of themselves. Nature had planted the existing forests. Nature would continue to plant trees to meet future needs. An average of 50,000,000 acres burned each year with an annual money loss of $50,000,000, soon taught the folly of such a theory and the Nation became convinced that forest protection was really necessary. The reaction against the old public-land abuses, great conflagrations, widespread depredations, and speculation in public timber led to the initiation of a policy of setting aside national forests. But at first these were little more than withdrawals. There was no authority for constructive administration. At the beginning, the thought of forestry in the public minds was almost wholly protective, and it took some six years to secure authority to apply to the public forests the principle of constructive use and development. It took several years more to organize and equip the forests and actually demonstrate that these properties could best be protected, and the many local and national interests could best be secured by their administration as a permanent Federal enterprise, in contrast to parceling them out to private owners.

Now, in game conservation we are still in the protective stage. We constantly use the expression game protection, or when we say game conservation, mean protection. Seldom do we hear of game administration or game development. Protection is, of course, the first necessary step. We have not yet secured adequate protection, but great progress is being made through public education. Game protection is but one step in game conservation, just as forest protection is but a step in forestry. By fire prevention we are securing a very considerable amount of new forest growth. By restrictions on hunting we will secure a considerable amount of game increase, but this alone will not suffice to stock areas that should abound in game and furnish the supply that might exist for legitimate sport and enjoyment by the public.

In many of our national forests, through cooperation with the States, we are already securing fairly good protection of the game; and we have the basis of constructive development of game at various

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points. For instance, we have a good many centers where we have increasing herds of elk and mountain sheep, and these animals, simply through protection, are on the increase.

It is essential, in addition, that we make specific provision for stocking areas with game and for building up the herds, through practical application of scientific knowledge of their needs and by providing the range necessary for their support.

Simply by protection in the national forests have we secured a very large amount of regrowth of forest trees on areas which were formerly burned over. I suppose that there are some seven or eight million acres of land formerly covered with fine forests which were destroyed by fire, and which are growing up to young trees simply through protection. There are at least seven or eight million acres more in the national forests on which the forests had been destroyed by forest fires which are not being restored simply through protection, but will require artificial restocking. In the mountains of Colorado last summer I rode many miles through forests burned more than 50 or 60 years ago in which I could not find a single young tree. It may be that in course of time, fifty or a hundred years more, the forests will be restored. But the climatic conditions are critical, and in most of those places to secure the restoration of the forests within a reasonable time artificial restocking must be resorted to; and that is why the Forest Service to-day is carrying on extensive work in replanting critical areas within the national forests, taking first such areas as watersheds, and others which it is most important should be covered with a forest growth in the near future.

Let us take the game situation on the national forests. We have not been able to make the progress in game development as in the case of other natural resources. The reason is that we have been forced by limitations of jurisdiction to confine our efforts chiefly to mere protection. In case of the timber, forage, water power and recreation resources, and so on, the Government has full jurisdiction and these various resources are being safeguarded and developed and constructively utilized. In the case of the game it has been assumed that the States have jurisdiction and the Forest Service has acted with and on behalf of the States. An exception is on the Pisgah Forest in North Carolina, where jurisdiction has been specifically granted to the Government by an act of the legislature; and there are two other national game preserves—one in the Tusayan and Kaibab Forests of Arizona, and one on the Wichita Forest in Oklahoma. Through a cooperative arrangement our forest officers are deputy State game wardens, and they are rendering an excellent service in carrying out State laws. But their efforts are effective only so far as they are supported by the State officers and local sentiment. In many places such support is lacking, and there the Government's

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efforts are neutralized, with disastrous consequences to the game. On the constructive side, the service has in many places been able to change local sentiment through educational work, and it has also been able to do a good deal in the way of making plants of game in places where the original stock has disappeared; but that is not game administration.

What impresses me is that there are vast areas where there is now little or no game, areas that can easily support abundant wild stock, and that without preventing the right use and development of other resources. By a constructive administration of the game these various areas could be made to support abundant wild life. But this requires a consistent application of farseeing plans, the establishment of chains of game sanctuaries, the planting of game where needed, the development of game herds of a size adapted to the extent of available summer and winter feed, the use of the increase beyond that number by hunting or otherwise, all based upon a technical knowledge of the requirements of the game, and correlated with the use and development of the forests for their various other purposes. It is simply a problem of technical administration.

The effort to secure these results by merely State laws is futile, just as ineffective as an effort to secure the application of forestry by prescribing the technical methods in a Federal statute, and will not be successful. We have examples of such efforts to-day that are likely to prove disastrous. In several instances State game preserves have been superimposed upon the national forests, or blanket laws passed restricting hunting, without reference to the possible increase of the protected animals beyond the available feed, and without reference to the various problems of forest administration. All goes well until the numbers increase beyond the capacity of the land to support them, and then the animals suffer or actually die of starvation. And I fear very much that in the case of our splendid elk herd in the Olympic Mountains that unless the principles of technical game administration are applied there, ultimately that herd will suffer, because it may increase to a point beyond what the feeding grounds will supply to the animals, and then the animals will begin to starve or otherwise suffer. It is just as unintelligent and just as cruel to overstock a range with wild stock as with cattle. Furthermore, game preserves established by legislative action will not meet the requirements of real game development. This applies to their location, their boundaries, and the changes that may be needed from time to time. There is an inevitable tendency when game gets scarce to ask for a preserve, and then as soon as the game has begun to become plentiful to demand that it be abolished, so as to have a lot of hunting. Meantime the game is apt to become tame, and when protection is withdrawn is soon wiped out.

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A legislative body can not be expected to act effectively in such a technical matter. Rather, the executive responsible for the game administration should be given the authority to make sanctuaries where and when essential, and the regulations regarding the number of animals to be used should be based upon the special conditions prevailing from year to year. This is the way it is done in Europe and is the reason why game has been plentifully maintained in the public forests there.

These considerations lie at the basis of the proposal to secure authority to set aside game sanctuaries within the National forests. Their establishment, their location, their boundaries, and their revocation should, however, be an executive matter and not submit in each case to legislative reference. Unfortunately, the present game sanctuary bill in Congress requires the sanction of State legislatures before the President could establish any sanctuary. Such a measure is not essentially different from the present custom of superimposing State game preserves upon national forests, and would be no substantial gain. In such a form I am opposed to the measure. But even with authority to make game preserves, or sanctuaries, the situation is only partially met. The actual administration of the game on the Federal properties should be delegated to the organizations handling them. In the national forests the responsibility for administering the game should rest with the forest service, and there should be authority not only for protecting the animals but to take such measures as may be necessary for building up and maintaining the herds. This could be done without sacrifice of any sovereign power of the individual States. The whole advantage of game conservation would go to the States, which would reap the benefits of the license fees, and the certain increased local expenditures by visitors who would be attracted to the localities by reason of the existence of abundant game. It is simply a measure of efficient handling of the game resource under a single direction, and by the organization already handling all the other resources on the property.

Any plan of game development on the public properties must include both forests and parks, and I am referring to the Federal properties only. Far-reaching plans should be worked out covering the whole field. The Yellowstone elk problem will never be solved except by applying a plan that includes the entire region, both the park and the surrounding forests. With such a plan and with adequate authority, the respective responsibilities may be distributed and the necessary activities coordinated for effective results. The whole talent and resources of the Government should be used in preparing and carrying out these plans. This would apply to redistributing animals, making plants in depleted areas,

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killing predatory animals, feeding when necessary, and actual field administration.

In a similar way I want to see a more effective coordination of other plans as between the forests and parks. A good deal is being done in correlated fire protection. Fire-working plans should be still further coordinated between adjacent parks and forests, including the development of lookouts and telephone equipment that would serve both, harmonized protective trail systems, mutual assistance in fire-fighting reserves, and so on. The same applies to the development of roads, both in the matter of primary systems of communication and secondary lines to points of special attraction in the forests between parks.

I have been discussing what I regard as essentials of conserving the game resources with special reference to the forests over which I preside. To achieve these ends there is required the cooperation of the States. I hope that as we secure further facts to support my contentions we may be able to persuade the States that regardless of any legal theories of constitutional rights, a coordinated administration under a single direction is the only practical plan to achieve the ends desired both by the States and the Nation. We have in many instances worked out such a practical plan of administration in the protection of State forest lands from fire, and with cities in handling watersheds. I have faith that we can make the same principle effective in game conservation. In any event we need to bring the Federal and State agencies closer together in sympathy and practical field cooperation. To crystallize this expression of need into a specific plan, I wish to repeat the suggestion which I made to the informal game conference held in New York last fall, at which various Federal agencies, representatives of local organizations interested in game, were present; that at some time during the coming year the Forest Service and National Park Service jointly call a conference of game officials from the forest and park States to meet at a convenient point in the West and discuss practical ways and means for uniting in the adoption of such specific measures as may lead to an effective solution of the problem of wild-life development in the public forest and park regions.

I have confined my remarks to-day to a rather technical problem of administration. It is a very practical problem and one that we have got to face. It will require our best thought and joint efforts before we will be able adequately to meet this problem of game and wild-life conservation on our public properties.

I thank you.

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THE PRESIDING OFFICER, MR. BURNHAM.

There is before Congress at the present time a measure to make a national park of the tallest mountain in North America—Mount McKinley, Alaska. The originator of this project will be our next speaker. Mr. Charles Sheldon has spent a great deal of time in the wilder sections of our country, and I have no doubt quite a few years in Alaska. Since 1905 he has wintered on Mount McKinley. He knows his subject as few can know it. Ladies and gentlemen, I take pleasure in presenting Mr. Sheldon, who is a sportsman, a naturalist, and an author. Mr. Sheldon.

MR. CHARLES SHELDON, CHAIRMAN GAME PRESERVATION COMMITTEE, BOONE AND CROCKETT CLUB.

MOUNT M'KINLEY.

Mr. Chairman, ladies and gentlemen, it is a matter of very great regret that so few of those who are here have seen the region to be embraced in the proposed national park, which will be called, and I regret it very much also, the McKinley National Park. I should have preferred that wonderful Indian name, Denali National Park—"Denali," the Indian word meaning "the great one," so appropriate to that magnificent mountain; but, in common with many others, I recognize that rigid rules must be established by our geographical board which determines such names, and Mount McKinley, according to those rules, may remain.

In a large portion of the sessions of this conference which I have so far attended, I have found obtruding time and again a region which is not yet a national park—the Grand Canyon of the Colorado. Strange as it may seem to you here, the region in America which is an absolute and complete contrast to the Grand Canyon, the only region which evokes similar emotions, emotions of spirituality and of reverence, is this region surrounding Mount McKinley. I will, in a moment, tell you why.

The bill before Congress embraces as its central feature Mount McKinley, the most magnificent mountain, by far, I say without reserve, on this continent; and I fully believe that, when it is known by some who have seen the high mountains of South America and the Himalayas, it will prove to be the most magnificent and stupendous mountain sight in the world. On this mountain there is a snow jacket of 16,000 feet, which remains there all the year around. Below it are bare ridges, from 5,000 to 6,000 feet high. There are parallel ranges of sharp and jagged peaks and serried crests containing rocks of various colors stretching away outside of them as far as you can

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see. This gives contrasts to the stupendous grandeur of the snow ranges behind them.

On the south side of this range (the lines of the proposed park extend on the south side of this range) is a glaciated region of rock and ice of stupendous grandeur, but inhospitable; it will not be a pleasure ground for people in general because of its inhospitable character and difficulty of access for years to come; but the lines of the park are so drawn that it includes the northern features that are necessary to make a successful national park. On the north side of the range the line extends 75 miles, approximately, east and west of McKinley, 150 miles in all, from 20 to 40 miles wide. The north side is a region mostly timberless, and yet with tongues of timber extending up the rivers. Outside of the rough ranges are gently rolling hills, hundreds of little straggling lakes, a region which, when roads are once established in there, and conveniences for tourists, you can ride all over it with horses. It is accessible in every part, and the game of the region will be constantly in sight, a thing which is not true of most of the regions of our other national parks.

When, four years ago, at the noon hour, I was sitting down in a side canyon of the Grand Canyon of the Colorado, on a slope distant enough from the main river, so that no sound or suggestion of it would be heard, I felt a very strange sensation; at first—I had been in the wilderness a good many years at different periods—at first I did not understand it, and when I thought it over a moment, and heard my heart beating—actually heard my heart beating—I realized for the first time in my life around me the environment was one of complete and absolute silence. There was not a breath of air; there was not a sound of an insect; no birds were around; everything was completely and absolutely silent. Then, in the midst of such silence, when I looked around and saw the stupendous architecture of nature, I felt that here this work was completed. I knew that it was not completed, but there was nothing that could be conceived by the senses to indicate that the forces of nature were at work, still continuing to carve the landscape before me. That, in itself, produces this feeling which in this conference you have heard so often expressed, of reverence and awe—man's insignificance in such surroundings; and when I sat on the edge of the Grand Canyon, I realized the feeling that so many of you have experienced, an indescribable feeling of reverence and awe that almost suspended one's breathing by the tremendous vision of the chasm reaching away down into the earth before me.

When I first climbed the ridge just north of the Alaska Range in 1906, and suddenly coming over the top I looked ahead, and saw this tremendous upheaval of mountains, this range before me with McKinley rising in the center, and the stupendous grandeur of it,

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my impressions were exactly the same as those given me by looking down into the Grand Canyon. One was nature carved down into the surface of the earth, and the other was the most magnificent upheaval of nature above it. Later, when I went up the slopes of Mount McKinley, and sat there a few moments, I saw, felt, or heard from time to time avalanches crashing down the mountain around me. I saw the glacial rivers rushing; I saw rocks sliding down their cliffs; I saw the mountains rapidly being denuded; I felt myself in a state where all the dynamic forces that carve the earth are still active, more active than any other part of this continent than I have been familiar with. I felt just exactly the impression that I had when I was alone in the Grand Canyon, that feeling of reverence and awe produced by grandeur. Exactly the same feeling was produced by the realization of the dynamic forces of nature around me actively at work carving the landscape. At such times man feels his atomic insignificance in this universe.

The region is one which, by virtue of its very wonder and magnificence, is bound to become a national park. It has been said that the mountains would remain there, that the region would always remain there, but it was not accessible at present. Why make it a national park now? The reason for that, and the principal reason for doing it immediately, is to save the magnificent herds of game which exist within this area to be laid aside, herds of game which are now threatened, because in a short time the railroad will be constructed close to it; and during that construction thousands of head of game will be slaughtered for meat of those constructing the railroad; and that will be in a better measure prevented when it is realized that it is to be protected by the National Government under national park administration.

I have been asked to speak to you of the game to be seen within this region. Its abundance is very much greater than any region within the United States, and I believe its abundance is greater within this area than within any region of the continent. The caribou—we will never have much of an opportunity to see caribou in abundance in our national parks, and I doubt if we can see caribou abundantly in Canada, unless it is in Newfoundland or the barren grounds, such as they exist in those regions. The moment our pack train went down the ridge, across the enormous channels of the Glacier River, flowing from the glacier, the great glacier which falls between the domed summits of Mount McKinley, caribou were visible on all sides.

The caribou is not the barren ground caribou. Its specific status has not yet been determined. Its habits and size indicate that it is simply a woodland caribou, and possibly closely related to the caribou which already exist and exist doubtfully in very small num-

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bers now on the Kenai Peninsula. These caribou, of the McKinley region, in the summer were everywhere. They were on the flats and along the Glacier River, on all the ridges. They penetrated all the canyons of the mountains. They were high on the slopes of the mountains, and in the region adjacent to Mount McKinley the caribou were on the very tops of the mountains, some of them even about where the mountain sheep were continually feeding. They existed in small bands, bands of 10, 30, sometimes 40, often in much larger bands. The large bulls were more often seen well up within the ranges, sometimes two or three, or more, the largest bulls mostly alone.

From immediately in front of Mount McKinley I started eastward along the range 70 or 75 miles. While traveling along there, these caribou surrounded me like cattle on a cattle ranch. They kept coming up to the pack train in evident curiosity, often trotting toward us and stampeding the horses. Always when they approached within a certain distance, circulating to sniff the wind, when they received the scent, they would put up their tails and run off. I do not recall one occasion where caribou stayed very long after they received the scent of our pack train. These caribou do not band up and travel as those of the barren grounds. They remain in that locality, or very close to it, the whole year. Throughout the summer they are constantly in sight above timber, and throughout the region on the north side of this range when October comes, the eastern herds of caribou, those to the east of the Muldrow Glacier, pass outside of the ranges, and there they spend the winter. Then they have a tendency to band up. They do not band up in enormous bands, but they gather in bands from 20 to 200 or 300. The bands stick very closely together, and yet they are independent, and they dig out the snow to feed, and travel around a circuit to the same place, about a hundred miles, I should say, every 9 or 10 days.

I went outside of the ranges during the winter to make a special investigation of them, and at different periods sometimes there were no caribou at all, but I could see their trails, and at the ends of these stated intervals the bands began to come in, following each other rapidly, spreading around and digging down into the snow, eating the lichen moss, which is their particular food, and remaining 2 or 3 days, then passing on and completing the circle. The lines of the park take in most of the area outside of the ranges where these caribou roam.

The lines of the park have been so drawn also as to include a vast strip of moose country. The moose exists on the north side of Mount McKinley throughout the forested areas, below—down the rivers entering the Yukon—the Tanana, some of them very close to the Tanana River; but they exist in great abundance toward the head-

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waters of the rivers, and great care has been taken to include an area which will be a vast preserve for these interesting animals, looking more like prehistoric beasts than almost any animal we have. One constantly sees the moose feeding up in the willows, and on the side hills, well up above the timber line.

The next animal, and the one which in the future, will excite, I think, more interest among visitors and tourists than any other, is the mountain sheep. The mountain sheep exists in this region in countless thousands. Nobody could make an estimate of their numbers, without remaining in the region a very long time, and thoroughly traversing it from end to end. On one day's travel, about 15 miles, my journals record, that I counted at least a thousand mountain sheep on the hillsides. They are apparently pure white animals. A year later I went over the same trip casually and the same numbers were visible. In almost any direction in which you go among the mountains, with the exception of small areas immediately close to Mount McKinley, mountain sheep are visible on all sides.

I have often wondered, in reading mountain literature, and I have at times reveled in listening to descriptions of emotions evoked by the scenery of our national parks in this conference, why it was that animals are not more mentioned as an adornment to the landscape. The most interesting book on mountains here in this last year was by Mr. Van Dyke. His wonderful analysis and ecstatic views of mountain scenery merely records the animals which inhabit the mountains, but in spite of his subtle analysis he does not say a word about the addition to the scenery, the emotions which are evoked by the sight of animals in the mountains. Who could, when looking into the Grand Canyon—those of you who are familiar with it and who realize all the feelings and emotions that that stupendous picture of nature arouses within you—suppose in the midst of it a mountain ram steps up on a crag, his color, his horns, his attitude wholly in unison with his surroundings, does not that make the feeling of your emotions more complete and more profound? It must.

In more civilized countries, on mountains and hills that have been stamped with civilization for centuries, the adornments, the little castle with its spires, the Moorish castles in Spain—they enhance the landscape. Painters put them in as adornments on paintings of landscape. Well, it's just exactly the same way in the wilderness. Does not, like some little touch like the little spire in the civilized landscape, a wild animal, the product of that environment, so adorn it that we feel that it is complete? That feeling, that completeness of all your feelings aroused by such wild scenery will in this region be constantly gratified to the uttermost.

The geologists, the men of science who go into the country, they feel emotions there from an understanding of the spirit of the rocks,

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of what the rocks reveal, and of the history of the formation of the earth. In just the same way the individual must feel additional emotion there when he sees these animals around which are records of the survivals of the animals of the past, when this earth was carved. They exist there as a link connecting this life with the life of the past ages just as the records in the rocks show the records of the past ages there before you.

Grizzly bears are abundant there, and smaller fur animals are abundant. They are all exposed to sight above the timber.

Now, it is to save game, to keep those regions as they existed in a primitive state, that this region should be laid aside as a national park. Nor is it very distant of access. When the railroad is completed it will not be so distant as the Yellowstone Park was when it was created. Thousands of people are going up the coast of Alaska every year, a coast which surpasses in beauty a trip to the North Cape, which has been popular for so long. When the railroad has been completed, it will be but a short trip. When roads are built into this region, it is but a short trip from the railroad. It will take but one day or a part of a day on a railroad, and the next day go in over the roads to this park.

The park is necessary. I dislike to speak of the material aspects of anything, and yet they are very necessary. The park is necessary as a financial asset to the people of this country, who are providing, through taxation, the money, the large amount of money, it will cost to build the railroad. The Norhern Pacific makes a feature of the Yellowstone Park, the Great Northern Road, a feature of the Glacier Park, the Atchison Road, of the Grand Canyon; the Southern Pacific Road, a feature of the Yosemite Park. All of them are tremendous financial assets to the railroads. In the same way this park, when finally developed, will be a financial asset to a railroad which is owned in common by all the people of this country, rather than by a private company. Again, near the park directly outside the line, directly north of Mount McKinley, there are mineral developments; there are possibilities of mining development—not placer mining, but mining of a character which may afford large bodies of ore. Should this possibility be realized, it will surely induce a branch of this railroad, which will go almost within sight, and right to the gates leading to Mount McKinley. That will make the region very easily accessible.

Again, the interior of Alaska needs people, needs people to develop it. Such a region as this, holding our inducements to the tourists who now go up the coasts of Alaska, will bring people into the interior. As a result of that, investments will be made. All of those things are sure to follow.

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The people of Alaska themselves realize the significance of this national park—this proposed national park. I say "national park" because I believe we are going to get it. It is receiving most conscientious consideration by the committee in Congress, and I believe we are going to get it at this session of Congress. The people of Alaska realize it and support it. It will be a region, as I say, comparable with the Grand Canyon.

The animal life will surely, in addition to the stupendous scenery, be one of the leading features which will induce tourists to go there. This is not the time or the occasion to go into detail about the interesting features of animal life and their habits. I have not time here more than to mention it generally.

I wish to take the occasion here to mention the enthusiasm of Mr. Mather, who is leading this national-parks movement, and also the enthusiasm of the men in his office. It really is an inspiration to come into contact with men of such quality.

Likewise I find the same enthusiasm among other departments in the Government, other departments perhaps more concerned with material than esthetic development. All are enthusiastically supporting this national parks movement; and I have been equally inspired to find some of the leaders in Congress in thorough appreciation of the esthetic values and all the other values that this movement is bringing to the country. I feel very sure that in the future, when this national park is established and easily accessible, we will look upon it as a priceless possession of the people, just as we look upon the Yellowstone Park, the Grand Canyon that will be a national park, the Yosmite, and all the others.

THE PRESIDING OFFICER, MR. BURNHAM.

William Bay Merchon says of the days of their abundance that the wild pigeons flying over Saginaw, Mich., knocked the hats off of pedestrians on the streets. John James Andolm tells of a flock of wild pigeons which he estimated to contain a billion and a half in numbers, somewhat exceeding the human population of the world. A recent writer in Scribner's had an interesting comparison, to give some concrete idea of what the population of the world meant. He said that the entire living population of the world could be put on the surface of Lake Champlain when that lake was frozen over, and have plenty of elbow room. I live on the shore of Lake Champlain, and that interests me. It is a lake about 120 miles long and from 12 to 15 miles wide in its widest portion. If the old people and the babies sat down around the shores, the rest of the population would have plenty of room to skate on the lake. The entire billion and a half would have a square yard of surface for each person.

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But think of a flock of birds that would cover that area, 120 miles long and probably an average width of 3 or 4 miles! And to-day there isn't a single specimen left.

Now, if the Weeks-McLain law had been in effect in the fifties, at the time the Legislature of Ohio refused to pass a resolution to protect the wild pigeon, because they said they existed in such countless numbers that it was useless and unnecessary to try to pass any laws to protect them—if that Weeks-McLain law had been in existence, we would have had plenty of wild pigeons to-day. The law would have stopped the slaughter. That will, I believe, insure our birds for all time. Our larger game animals must be provided for in some other way. In the West in particular the only practical way at the present time appears to be these game refuges. The Yellowstone National Park furnishes a splendid example. It has in its confines most of our big game, and that game exists in very considerable numbers.

Mr. E. W. Nelson, the Chief of the Biological Survey, will tell you about the elk problem in the Yellowstone National Park. Mr. Nelson is the man in whose hands, beyond any other man, the safety of our big game and the safety of our birds in this country under Federal protection depends. Through him Uncle Sam's long arm is stretched out to see that these wild creatures are preserved for future generations. Mr. Nelson.

E. W. Nelson, Chief of the Biological Survey.

THE YELLOWSTONE AND THE GAME SUPPLY.

Mr. Chairman, ladies and gentlemen, before I start with my talk, I will put a map up here for you to look at. (Mr. Nelson thereupon explained the map in question, after which he read the following address:)

It is difficult for those who have not personally known the West during the last 40 years to realize the rapidity of the changes that have taken place there in conditions affecting wild life. This may be instanced by the fact that in 1884, only 32 years ago, the Apache Indians raided close by my ranch in the White Mountains of Arizona, killing one of my friends and other people in Arizona and New Mexico. Women were sent from outlying ranches to the villages and no one left his cabin without his rifle in the regular old frontier style.

At this time elk and antelope still existed in large numbers at many points in the Rocky Mountains from near the Mexican to the Canadian border. We killed antelope, deer, or elk for ranch use throughout the year without a thought that the supply was not perpetual.

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The increasing occupation of the West continued and, as we all know, the elk have been exterminated over nearly all their range and antelope are closely following. Now, with transcontinental automobile highways in existence the frontier within our borders is a matter of history, primitive conditions are everywhere rapidly disappearing or are gone forever, leaving a sorry remnant of the wonderful abundance of wild life which once occupied all parts of our land.

Fortunately, before it was too late, a few far-sighted men foresaw the impending changes and recognized the desirability of saving some part of the wilderness and its habitants for future generations. One of the best and most far-reaching results of this prescience is evidenced by the Yellowstone National Park, which was established in 1872. At that time the Yellowstone region was a primitive wilderness, marvelous for its scenic beauties and natural wonders. Here the Government took over a tract about 54 by 63 miles to create the noblest of our parks.

The slopes of its splendid mountains were clothed in forests, broken by lovely open parks and valleys, where many buffalo, moose, elk, black-tailed deer, antelope, and mountain sheep roamed unmolested except by such natural enemies as the wolves, bears, and mountain lions. During the early years of its existence the park was poorly guarded and the game threatened with extermination. The buffalo numbering some hundreds were killed by poachers until in 1901 only 25 remained. Later a few buffalo were brought in and a more efficient guardianship since then has resulted in the growth of the herds until now there are approximately 350 of them in the park. These are in two herds, the original one and the introduced animals or their descendants.

As is well known, at the time of the colonization of this country buffalo existed by millions and ranged from Pennsylvania and Virginia west to beyond the Rocky Mountains. With the progress of settlement they were rapidly exterminated and to-day the only herd of buffalo which has continued to occupy its primitive home in the United States is in the Yellowstone. This herd is doing well and is considered to contain the most virile stock of this splendid animal remaining within our territory.

The prong-horned antelope is another notable American game animal which is making one of its last stands in the Yellowstone. These animals have either gone or are rapidly disappearing from their former range on the arid plans, both in Mexico and the United States, and it is hoped that the herd of several hundred animals in this park may perpetuate the stock well into the future. In the wilder recesses of the Yellowstone about the head of the lake and along the river are large numbers of a form of moose peculiar to this region.

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Several years ago George Shires, 3d, found these moose abundant at the head of the Yellowstone Lake, and estimated there were about 1,500 of them in the park. A few of these moose occur outside the park, mainly in Wyoming, but the preservation of this magnificent animal in this region depends mainly on the protection given it in the park. The moose is one of the largest and most picturesque game animals of America, and its presence in considerable numbers in the Yellowstone forms one of the many valuable assets of that wonderland.

The great herds of elk which make their home in the Yellowstone Park, however, are its most notable and valuable game asset. The elk of the Yellowstone are divided into two herds, the northern and the southern, which are mainly distinguished by their wintering ground, the southern herd wintering largely in the Jackson Hole region of Wyoming, the northern herd in and near the northern part of the park. These two herds have been variously estimated to contain from 40,000 to more than 60,000 animals. During summer the herds meet in the higher parts of the park near its southern border so there is an interchange of animals between the two groups, the separation occurring when the winter snows drive them down to lower altitudes.

In summer great areas on the mountains still afford good grazing for a much greater number of elk than now exist, but the lower country about the base of the mountains, which formerly served as the winter home of the elk, has been so occupied by farms and stock that both range and forage have steadily decreased. In consequence, during hard winters in the past few years many of these superb animals have died of starvation. Conditions are especially severe in the Jackson Hole district in Wyoming, where a Federal game refuge has been established under the direction of the Biological Survey, and hundreds of tons of hay are being put up annually to feed the elk when they are forced down from the mountains by heavy winter storms. Until recently the northern herd has had, in addition to the valleys of the park, a considerable area of available outside winter range where it has usually succeeded in passing the severest seasons with comparatively small losses. Owing to the many small herds into which the elk are ordinarily separated, it has been extremely difficult to learn their actual numbers, and many conflicting opinions have been expressed as to the total number of elk in the park and as to the availability of the park to support them. In has even been proposed that thousands of these elk be killed in order to stop the supposed overstocking of the range and attendant wholesale starvation of the animals during the first severe season. This idea was due to an erroneous belief as to the total number of elk in the park and as to their rate of increase.

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In addition to the destructive inroads made by the wolves and other predatory animals on the young, the northern herd of Yellowstone elk have, at times, been subjected to heavy slaughter when they drifted outside the park limits. On one of these occasions it is reported that about 1,500 were killed along the northern border within a few days. In addition, tusk hunters have killed great numbers, solely for the two canine teeth, which are made into watch charms, and the carcasses left on the ground to rot. Last winter about 500 animals were killed for htis purpose, 17 being shot down in a single mountain pasture where they had strayed. Fortunately, effective measures are now being taken to protect the elk from such conscienceless destruction.

Even the lower parts of the Yellowstone Park are so high above sea level that the winters are severe, and in exceptional seasons the snowfall is so deep that a large proportion of the animals are forced to seek grazing outside the park limits.

The park is surrounded by four national forests—the Absaroka, Shoshone, Teton, and Gallatin—in which grazing leases are issued by the Forest Service, either for sheep or cattle. Demands for such grazing privileges are rapidly increasing and would soon result in the use of all available feed up to the park boundaries. The disastrous effect of such a situation on the elk has attracted the attention of the Forest Service, which is deeply interested in the conservation of game as one of the valuable assets of the national forests.

Last year the Forester invited the Biological Survey to cooperate in a study of the conditions about the Yellowstone Park with a view to securing information to serve as a basis for determining what areas in the national forests bordering the Yellowstone are needed to supply adequate winter grazing for the present Yellowstone herds and a reasonable increase. A representative of the Forest Service and one from the Biological Survey made an extended visit to the park and the surrounding forest during the summer of 1915, to learn the summer conditions in relation to the game in and out of the park, and another trip was made last winter to observe the condition at that season.

Accurate information as to the approximate number of elk in and about the park for which winter grazing must be provided is a necessary basis for the determination of the area of winter grazing to be reserved for them. During the past winter both the representatives of the Forest Service and the Biological Survey and those of the National Park Service made a count of the elk in the northern herd, both in and out of the park. These counts were made at different periods and the results vary so widely that it appears necessary to have another count made. It is planned to have

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this done the present season by cooperation between the Departments of the Interior and Agriculture, aided by a representative sportsman from the Boone and Crockett Club. With the information thus secured and the available knowledge of the range conditions, the Forest Service can formulate its plans for the allotment of the necessary winter grazing areas for these splendid game animals.

It is evident that a critical situation has developed requiring wise action of the National Park Service of the Interior Department and cooperation by the Forest Service to avoid disastrous losses in the near future among the last great herds of elk in America.

The comparatively recent abundance of large game throughout a large part of the West renders it difficult for the present generation to fully appreciate the tremendous interest with which the Yellowstone Park and its varied big-game animals will be regarded in the near future. There our successors will find an epitome of wilderness conditions which once existed in many parts of the continent.

In addition to the educational and recreational value of the wild life in the Yellowstone Park it has a very definite relationship to the perpetuation of the game resources of the entire country. This is strikingly evidenced by the fact that since 1912 more than 1,700 head of elk have been distributed from the Yellowstone Park to game preserves and parks in various parts of 20 States. As is well known, the elk once ranged from New York State to California, but has practically disappeared throughout almost all of this enormous territory. By the distribution of animals from the Yellowstone they are being reestablished in many of their former haunts. In addition to being placed in many Western States small herds have been brought to New York, Pennsylvania, and Alabama, thus returning them to the eastern part of the former home of the species. As the other species of game in the park increase in numbers they can be utilized in the same way.

In conclusion I wish to express my satisfaction in the recent organization of the National Park Service, which means a tremendous increase in the development and use of these national playgrounds and in the conservation of their wild life. The people of the United States are to be congratulated in having at this critical period the public-spirited services of Mr. Mather and his assistants, whose efforts to secure the cooperation of the public and of all governmental agencies in developing the usefulness of the national parks will bring large results. The Biological Survey will consider it a privilege to cooperate in whatever way it can to advance this work.

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THE PRESIDING OFFICER, MR. BURNHAM.

You people here this afternoon are hearing the last word in the game conservation problem. Perhaps it would be better to call them the first words of a new era. In 1886, in central Wyoming, I saw a bunch of antelope, between three and four thousand. There are hardly more than that in the whole of the United States to-day. Dr. Nelson has just told of antelope in the Yellowstone Park—a few hundred.

Dr. E. Lester Jones, Chief of the United States Coast and Geodetic Survey, a good sportsman who has made some interesting trips and investigations in connection with big game, and last summer looked over and photographed probably the largest remaining herd of antelopes in the United States—certainly the largest one in an unprotected area. This new era on which we are entering—I think we have entered on it—derives its hopefulness from laws which are being effectively administered.

This movement here looks not only to the safeguarding of our present parks but the arousing of interest in future parks. It makes for everyone taking an intelligent interest in these properties which belong to all of us. Now, I have often thought that if the people of the State, or the people of the whole country, thoroughly understood that they had an equal undivided interest in every game animal and every game bird, there would not be much poaching or shooting out of season. It is a fact that people do not understand the game belongs to them as American citizens; that it is their personal property. If this game were divided up and each man, woman, and child given their pro rata share—so many partridges, so many wild ducks, so many deer, etc.—do you suppose they would go to work and exterminate those wild animals. They would try to increase that stock for the benefit of themselves and children. Now, that is what this movement that we have embarked on to-day is doing; it is looking out for the benefit of the whole people. It is waking them up to the fact that the big game animals, the national refuges, and national parks are the big opportunities.

E. LESTER JONES, SUPERINTENDENT OF THE COAST AND GEODETIC SURVEY.

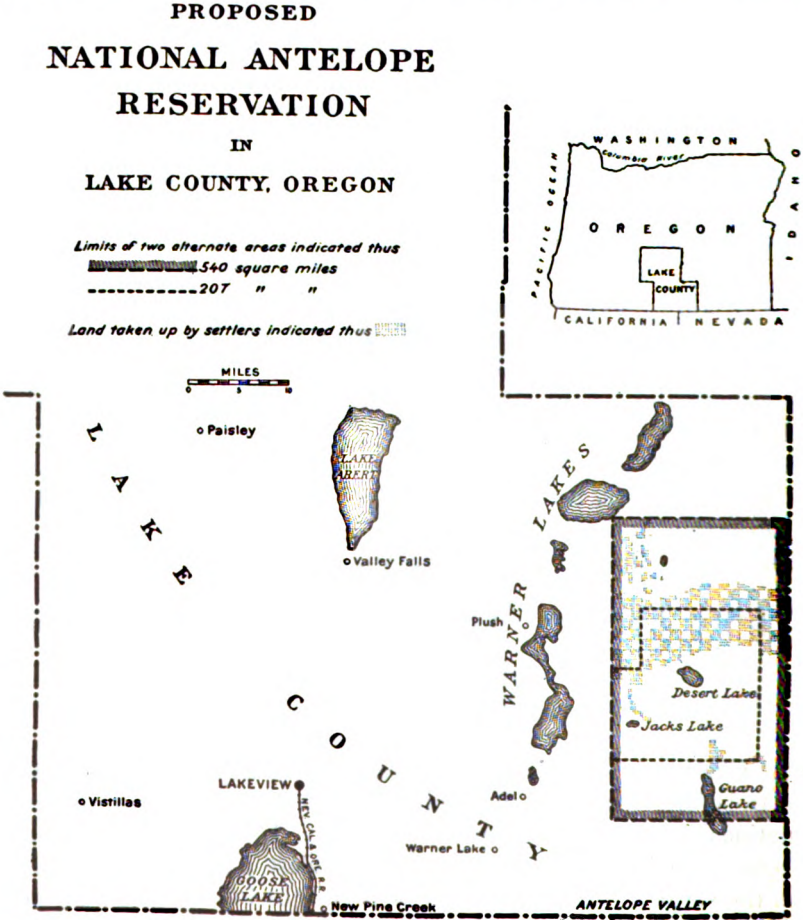
FUTURE OF THE ANTELOPE.

Mr. Chairman, ladies, and gentlemen, it is a pleasure for me to appear before you for a few minutes this evening as an advocate of national parks and big-game protection. I am especially pleased to come here in the interests of our wildest game animal, which is on the verge of extermination. It is sure to follow, in a very few

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years, a worse doom than that which befell the bison. Dr. Nelson has just said there are 350 bison doing well in Yellowstone Park, and while this noble animal adapts itself to a certain form of domestication, it is quite different with the antelope, and we won't be able to say in a few years that the antelope, like the bison, is well cared for in inclosures. Unfortunately, it is an animal that does not do well under fence. In the line of my official duties this past season I had the good fortune to fulfill a long-felt desire to visit the last large band of antelope in the United States. It impressed on me two things: The great need of Federal protection if we are to save the antelope; and that same protection for all the species of big game in the United States.

I am certainly opposed to State protection of our big game animals, as well as game birds, simply because in most States they get little protection, and in a few, *none*. And this was so forcibly brought back to me this year on several occasions when I saw the



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most flagrant violations by the very men who are sworn to protect the wild life by enforcing the laws that control the killing of these animals and birds.

The few slides that I have to show you this evening are more to bring out one point, and that is the absolute need of a Federal park to cover the area in which this herd of antelope now roams. Unless this is done at once, all the antelope outside of the Yellowstone Park are certainly doomed.

In Arizona, Wyoming, Nevada, and California I say truthfully there is left a mere handful of these noble animals. The antelope is not only beautiful but most graceful, and they can travel at fast speed. They are very timid, but they have one fatal weakness and that is curiosity. Let me first cite an evidence of their timidity, then show what their one weakness has done for them. I remember on one occasion going out on a ridge or rim and observing below me, scattered in a basin which was surrounded by this rim, some 200 perhaps or 300 of these magnificent animals. The nearest one was three or four hundred yards from me, the others being scattered over an area covering a mile square. Their eyesight is marvelous. It almost seemed to me sometimes that they could look out of the back of their heads. It wasn't many minutes before they were disturbed by my presence and moved rapidly away by their loping gait. Now, the other point. The next day, by the construction of a small blind from sagebrush and by lying flat so I could look through the little holes in the brush that inclosed me without being seen, perhaps 100 of these animals came within 10 feet of me to investigate the meaning of the blind. Now, you can readily appreciate how easy it will be to exterminate these animals if anyone wishes to do so.

I am now going to show you slides indicating the locality (Lake County, Oreg.) in which this last remaining herd roams, and what I advocate as the certain means for protecting this herd. If we can all get together and get the support of Congress and do something before it is too late, our efforts will mean the perpetuation of this beautiful animal.

(Whereupon Dr. Jones showed a number of interesting views of the antelope described above and plans for the national park or national reservation.)

The plan of the reservation or park will be found on the opposite page.

THE PRESIDING OFFICER, MR. BURNHAM.

There is no one in this country who knows more of his subject—game protection and game preservation—than our next speaker, who will tell you of national monuments as wild-animal sanctuaries. Dr. T. S. Palmer.

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T. S. PALMER, EXPERT IN GAME CONSERVATION, BIOLOGICAL SURVEY.

NATIONAL MONUMENTS AS WILD-LIFE SANCTUARIES.

Much has been written and many photographs have been published illustrating the wild life in the national parks. The bears, the buffalo, and the elk of the Yellowstone are as closely associated with this park as are the hot springs or geysers. The mountain sheep is almost as closely associated with the Rocky Mountain Park or the mountain goat with the Mount Rainier or the Glacier Park as are waterfalls with Yosemite or the big trees with the Sequoia Park. Of national parks there are now 16 and of national monuments 21 in charge of the National Park Service of the Department of the Interior. In addition, there are 11 national monuments on national forests in charge of the Forest Service of the Department of Agriculture, and 2 national monuments under the jurisdiction of the War Department. Of these 50 reservations, the 34 monuments have a combined area of about 1,900 square miles, or a little more than one-fourth the area of the national parks and a little less than that of the State of Delaware.

Comparatively little has been published on the wild life of the national monuments and even the existence of some of the most interesting reservations is scarcely known to the public. Much less has the tourist or casual visitor a clear idea of what constitutes a national monument, of the diverse character of monuments, or of the distinction between a national monument and a national park. This, perhaps, is not surprising when it is recalled that only a few years ago a former Cabinet officer to whom was submitted a recommendation for the establishment of one of the larger national monuments inquired, "What kind of a monument do you propose to build?" And upon being assured that it was not the intention to build any monument, but merely to preserve some objects of unusual scientific interest under the national monuments act, remarked, "Well, I don't know what you are going to do, but if Mr. ——— says it is all right I will approve the recommendation." And within a few days the monument became an accomplished fact.

From time immemorial man has been accustomed to erect monuments in honor of celebrated men or to commemorate important events in history by monuments, and these monuments, many of them unfortunately now in ruins, are carefully preserved as examples of his work or mementos of his accomplishments. Similarly nature has carved rocks, has hollowed out caverns, and has developed remarkable types of plant and animal life adapted for peculiar conditions. The fact that such objects are properly monuments was recognized nearly a hundred years ago by the celebrated traveler Alexander von Humboldt who, in describing some of the marvelous

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trees he had found in his travels in the Tropics referred to them as "natural monuments." Recently the term "natural monuments" has been adopted abroad to denote any natural object of scientific interest, whether geological, botanical, or zoological, and the importance of preserving such monuments is now recognized both in Europe and America.

MOVEMENT FOR PRESERVATION OF NATURAL MONUMENTS SIMULTANEOUS IN EUROPE AND AMERICA.

It is interesting to note that the policy of preserving under the care of the Government objects of historic or scientific interest for the benefit of the public was adopted almost simultaneously in Germany and in the United States. In Prussia the movement took the form in 1906 of a provision for the appointment of a special officer known as the State commissioner for the care of natural monuments, who, under the supervision of the minister of education, was charged with the duty of locating, protecting, and making known the various objects of scientific interest worthy of preservation. No funds were provided for the purchase of sites of such monuments, but it was the duty of the commissioner to locate and mark them, and to interest the owners, whether State, municipal, or private, in their preservation. These natural monuments are of various kinds and may include an historic tree, an unusually fine specimen of some shrub, a group of rare plants, a bog containing northern plants or animals, a breeding colony of birds, a curiously carved rock or a glacial bowlder—in short, almost any object of scientific interest.

In the United States the movement took a somewhat different form, but in the same year resulted in the passage of an act of Congress providing for preservation under national auspices not only of natural objects of scientific interest, but also of historic landmarks and historic structures. This act, approved June 8, 1906, entitled "An act for the preservation of American antiquities," and commonly known as the national monuments act, authorizes the President of the United States to declare by public proclamation as national monuments, historic landmarks, historic and prehistoric structures, and other "objects of historic or scientific interest situated on lands owned or controlled by the Government of the United States." No appropriation was made for carrying the law into effect or providing for the care of the monuments which might be created in this way. Not until 1910 was any general circular of information regarding the monuments available for general distribution, and not until 1916 was any specific appropriation made for their protection or any provision made for a comprehensive plan of administration.

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Looking back over the past 10 years, it is interesting to observe that both in Prussia and in the United States the attainment of essentially the same object has been sought in different ways, but primarily by a campaign of education. In Prussia attention has been concentrated on educating the public as to the importance of preserving these natural treasures, whether under the care of State authorities or private individuals. In the United States attention has been concentrated on setting apart the more important natural monuments and historic landmarks on public lands as national monuments and preserving them by proclamations and warning notices.

THREE KINDS OF MONUMENTS—HISTORIC LANDMARKS, HISTORIC MONUMENTS, AND NATURAL MONUMENTS.

The national monument act practically contemplates the establishment of monuments of three different kinds:

(1) Landmarks, or places of purely historic interest, include such reservations as the Cabrillo Monument in California, which marks the point where Juan Rodriguez Cabrillo first sighted the coast of California in 1542; and the Big Hole Battlefield in Montana where a superior force of Nez Perce Indians was defeated by United States States troops on August 9, 1877. These monuments mark spots closely connected with the history of the West, but contain no prehistoric structures or objects of scientific interest.

(2) Historic structures, or monuments proper, comprise such ruins as Montezuma Castle, the Gila Cliff Dwellings, the ruins in Chaco and Walnut Canyons, and the old Spanish Missions of Gran Quivira in New Mexico and Tumacacori in Arizona.

(3) Natural monuments include a variety of objects of scientific interest, ranging from the stupendous gorge of the Colorado River in Arizona and the glacier covered summits of the Olympic Mountains in Washington to the wind-swept rocks of the Wheeler Monument in Colorado, the natural bridges in Utah, the Lewis and Clark Cave in Montana, the fossils of the Dinosaur Monument in Utah, the petrified forests in Arizona, the redwood trees of the Muir Woods in California, and the giant cactuses in the Papago Saguaro Monument in Arizona. In this group are found the monuments which are most important as wild life sanctuaries.

It could scarcely be expected that the historic, the archæological or the paleontological reservations would contain much that is remarkable in flora or fauna, but it is interesting to note that 8 or nearly 25 per cent of the 34 monuments, including most of the larger ones, are of considerable interest in connection with the preservation of wild life. These eight monuments in the order of their creation are: (1) El Morro, in New Mexico; (2) the Muir

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Woods, in California; (3) the Grand Canyon, in Arizona; (4) the Pinnacles, in California; (5) the Colorado, near Grand Junction, Colo.; (6) Mount Olympus, in Washington; (7) Papago Saguaro, in Arizona; and (8) Sieur de Monts, in Maine. Two of them—Muir Woods and Papago Saguaro—are primarily botanical; three others—the Grand Canyon, Mount Olympus, and the Pinnacles—are essentially geological; while the Sieur de Monts combines historical, geological, botanical, and zoological attractions. Two are located in Arizona, two in California, and one each in Colorado, Maine, New Mexico, and Washington. With the exception of El Morro and the Muir Woods, each has an area of more than 1,000 acres—Mount Olympus, including some 300,000, and the Grand Canyon, more than 800,000 acres. Their combined area includes more than a million acres—a territory larger than the area of Glacier National Park, and more than half the size of the Yellowstone.

JURISDICTION.

At this point it is pertinent to consider the nature of the protection accorded the birds, game, or other objects of scientific interest in a monument under the care of the General Government. It has been said that the principal difference between a national monument and a national park is that a monument has merely been made safe from private encroachment, while a park has been similarly protected but in addition is in process of development so as to become a convenient resort for the people. From a legal standpoint, theoretically at least, a broader distinction exists in the matter of jurisdiction. In some of the national parks in which the necessary legislation has been enacted the jurisdiction of the Federal Government is complete and exclusive, and all cases involving violations of the law or regulations are tried in the United States courts. In the national monuments, on the contrary, State laws are still in force, as there has been no cession of State authority and jurisdiction is exercised as it were through cooperation between the Nation and the State. Whether a case is tried in the Federal or State courts depends on the nature of the offense or the question at issue. The Federal Government, as proprietor of a national monument, is in much the same position as a landowner, who has the right to protect his property against all forms of trespass, but who does not always exercise it, and who relies on the State for general protection. Stated more specifically by way of illustration the conditions are somewhat as follows: A person charged with killing game, cutting timber, or with having committed any ordinary misdemeanor in the Yellowstone National Park would be tried in the Federal court, whereas

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one charged with the commission of any of those offenses on a national monument would be tried in the Federal court for cutting timber or for carrying firearms in violation of departmental regulations, but he might be tried in the State courts for killing game or committing some other misdemeanor prohibited by State law.

Under existing conditions the question is rather more complex. In 7 of the 16 national parks the Federal Government now exercises jurisdiction in the Yellowstone and Platt Parks through provisions in the acts of Congress admitting the States of Wyoming and Oklahoma to the Union; in the Hot Springs Reservation and in the Glacier, Mount Rainier, and Crater Lake Parks through the acceptance by Congress of the jurisdiction ceded by the States of Arkansas, Montana, Washington, and Oregon; and in the Hawaii Park by virtue of the jurisdiction over a Territory exercised by the General Government.[1]

In the case of the national monuments protection is afforded by a number of Federal laws and regulations. Under the monuments act (34 Stat., 225) the land is withdrawn from all forms of entry, and the injury, destruction, or unauthorized appropriation of any prehistoric ruin or object of antiquity is prohibited under heavy penalties. Under the Criminal Code (35 Stat., 1088), cutting timber is punishable by a fine of $500 or imprisonment not more than one year, or both (sec. 50); setting on fire any timber, underbrush, or grass (sec. 52), building fires in or near any timber without totally extinguishing them before leaving (sec. 53), or breaking down fences inclosing lands reserved for public use, or permitting any stock to destroy grass or trees on such lands (sec. 56), are punishable by similar or even more severe penalties.

Under the Lacey Act, now incorporated in the Criminal Code (35 Stat., 1137), the incentive to kill game for market or for hides is removed by the provision prohibiting interstate shipment of birds or game killed in violation of State laws. Under the Federal migratory-bird law (37 Stat., 847) and the treaty with Great Britain for the protection of migratory birds in the United States and Canada, migratory birds are protected throughout the year, and the band-tailed pigeon, the largest of the native pigeons, and still common in some parts of the West, is protected at all seasons for several years. (U. S. Dept. Agri.; Farmers' Bull. 774, pp. 18–20, 1916.)

Under the Grand Canyon Game Preserve act (34 Stat., 607), special protection is given the game in that part of the Grand Canyon

[1] Recommendations have been made with a view of securing cession of State jurisdiction over the General Grant, Lassen, Sequoia, and Yosemite Parks, in California, and the Mesa Verde and Rocky Mountain Parks, in Colorado. Thus the Casa Grande Ruins, Wind Cave, and Sullys Hill Parks are the only ones in which no such action has been taken. Special protection of the Sullys Hill Park, in the matter of hunting and trapping, has recently been provided by the State of North Dakota.

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Monument overlapping the game preserve along the north rim of the canyon. Under the National Park Service act (39 Stat., 535), the Secretary of the Interior is authorized to dispose of dead or diseased timber, to provide for the destruction of injurious species of animals or plants, and to regulate grazing. Regulations for the government of the monuments promulgated by the Department of the Interior in 1910 prohibit building fires, using firearms, fishing, picking flowers, ferns, or shrubs, polluting the water, or leaving vehicles or horses, except at designated places. (Report on Sullys Hill Park, Muir Woods, etc., Department of the Interior, 1915, p. 8.)

It is possible for a State to supplement the protection provided by the Government either directly or indirectly and even to prohibit all hunting on a monument as has actually been done in the case of the Pinnacles Monument. Some of the States have manifested a deep interest in the reservations and a spirit of hearty cooperation in their maintenance by enacting laws which have added materially to the protection of the wild life. The State law of Washington protecting elk, which was recently extended, that passed in Colorado in 1913 suspending deer hunting, and that protecting mountain sheep in Arizona are effective adjuncts in the preservation of the big game on the Mount Olympus, the Colorado, and the Grand Canyon Monuments. California made the Pinnacles Monument a State game preserve by act of 1909 (ch. 428) and more recently has defined it as game and fish district No. 25 in which all hunting is prohibited (Laws 1915, ch. 379). Oregon has made it unlawful to hunt or trap wild animals or birds within the boundaries of any watershed reservation set aside for the Government, or on lands in any national bird or game reservation or in a national park (Laws 1913, ch. 232, sec. 20), and North Dakota has made it unlawful to hunt or trap on the national game refuge in Sullys Hill National Park or in any other national reserve or game refuge that has been or may hereafter be established within the State (Laws 1915, ch. 161, sec. 60).

SOME OF THE MORE IMPORTANT NATIONAL MONUMENTS.

Having considered the nature of a monument and the protection accorded the wild life which it contains it is in order to mention briefly the characteristics of the individual monuments and the species which may be preserved on them. First in importance may be considered the two largest monuments, the Grand Canyon and Mount Olympus, which will ultimately in all probability be made national parks.

GRAND CANYON NATIONAL MONUMENT.

The Grand Canyon National Monument, established January 11, 1908, comprises an area of about 800,000 acres and includes within

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its boundaries the great chasm formed by the river together with a narrow strip along the north and south rims of the plateau. The wonders of the canyon itself with its marvelous coloring and fantastic formations so engross the attention of the visitor that little thought is usually given to anything else than scenery on this reservation. Whether maintained as a monument or made a national park it has, and will continue to have, certain features which render it important as a refuge for some kinds of big game and also for birds and other forms of wild life. The inaccessibility of many parts of the canyon walls furnish a safe retreat for mountain sheep which exist here in greater numbers than is generally realized. In 1912 Mr. Charles Sheldon, who has devoted much time and study in the field to the distribution and range of mountain sheep in the Yukon region in Alaska, and in the southwest, visited the canyon for the purpose of investigating the condition of the sheep. In his report to the Boone and Crockett Club he says:

> For the purpose of investigating the sheep two members of the game committee made in November last a special trip to the Grand Canyon of the Colorado in Arizona. They were surprised to find that with the exception of an area of 20 miles on the north side of the river directly east of Kaibab Canyon sheep are fairly abundant in the canyon on both sides of the river, throughout the entire length of the Grand Canyon. The most conservative estimate that could be allowed places the number of sheep in the Grand Canyon at 1,000. There are probably many more. These sheep range in most places well within the inner canyon. Most of the territory where they feed is quite inaccessible to hunters.

Even if this estimate is rather high it indicates that there are more mountain sheep in the Grand Canyon than in any one of the national parks.

The scarcity of water along the south rim of the canyon makes this area unfavorable for the presence of deer in any considerable numbers, but on the north rim on the Kaibab Plateau, partly within the area of the monument but mainly in the adjoining Grand Canyon Game Preserve, mule deer are abundant. The number at present is probably several thousand, but even the most conservative estimate indicates that this is probably the largest number of mule deer within the limits of any Government reservation.

The smaller mammals and the birds also find here a safe refuge from all except their natural enemies, as the rugged canyon walls naturally discourage and prevent pursuit. Very little is known of the possibilities of the canyon as a bird sanctuary. In fact, no complete list of the birds of this reservation has yet been published, notwithstanding the fact that since the completion of the branch railroad from Williams to Grand Canyon Station in 1902 hundreds of thousands of persons have visited the spot and a number of ornithologists have stopped here at different times, but none of them

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has remained long enough to prepare a list which can be considered even approximately complete. The canyon offers unusual advantages for studying the effect of altitude on the distribution of animal and plant life and in this respect affords exceptional educational advantages. On the trip down the Bright Angel Trail from El Tovar to the river the visitor descends from an elevation of 7,000 to 1,000 feet, passing in rapid succession the various forms of life found between the pine-covered plateau of northern Arizona and the fauna of the hot deserts in the southern part of the State. Although animal life does not seem abundant, opportunity is afforded for glimpses of many interesting forms, including Aberts' squirrels, chipmunks, crested and Woodhouse's jays, mountain chickadees, and tiny humming birds, while the wonderful notes of the rock and canyon wrens and several characteristic western birds may be heard. In few of the parks are the effects of the influence of elevation on distribution of wild life more clearly forced upon the attention of even the casual observer. In referring to the wonderful opportunity for studying these problems, Dr. C. Hart Merriam says:

> The complex and interacting effects of radiation and refraction, of aridity and humidity, of marked difference in temperature at places of equal altitude on opposite sides of the canyon, of every possible angle of slope exposure, and of exposure to and protection from winds and storms, produce a diversity of climatic conditions, the effect of which on the animal and vegetable life of the canyon has been to bring into close proximity species characteristic of widely separated regions and to crowd the several life zones into narrow parallel bands along the sides of the canyon—bands which expand and contract in conforming to the ever-changing surface. * * * In short, the Grand Canyon of the Colorado is a world in itself, and a great fund of knowledge is in store for the philosophic biologist whose privilege it is to study exhaustively the problems there presented. (Biol. Survey, U. S. Dept. Agr., N. A. Fauna No. 3, p. 37, 1890.)

MOUNT OLYMPUS NATIONAL MONUMENT.

Second in size only to the Grand Canyon is the Mount Olympus Monument, which occupies the summits of the Olympic Mountains in northwestern Washington. It contains many objects of unusual scientific interest, including numerous glaciers and also the summer home and breeding grounds of the Olympic elk, a species peculiar to this region. As originally established, on March 2, 1909, it contained approximately 608,640 acres. In 1912 a tract of 160 acres was eliminated, and by the proclamation of May 11, 1915, the size of the reservation was reduced 50 per cent, so that the area at present is 299,370 acres. During the last 12 years elk hunting has been suspended in the State, and this protection in connection with the protection of their breeding grounds has resulted in a gratifying increase in the number of elk. In 1905, when the close season was

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first established, it was estimated that the elk in the Olympic region numbered 2,000 or less. Late in 1910, nearly two years after the creation of the monument, a careful estimate made by the forest ranger at Port Angeles, Wash., placed the total number at 3,000 or 3,500, of which about 2,000 were on the Olympic National Forest, within which the monument is located. The largest bands were found on the watersheds of the Bogachiel, Elwah, Hoh, Queetz, and Soleduck Rivers. The number of deer was estimated at 3,000 or 4,000. It is impossible to say even approximately how many elk are found within the present boundaries of the reservation. The total number in the Olympics may perhaps be conservatively estimated at about 4,000, notwithstanding some losses which have recently occurred in severe winters. This is at least double the number estimated in the herds at the beginning of the period of protection. So long as hunting is suspended the monument practically forms a national game preserve.

EL MORRO NATIONAL MONUMENT.

The El Morro National Monument, better known by its local name of "Inscription Rock," is a small reservation of 160 acres 35 miles due east of the Zuñi Pueblos, New Mexico. It was established by proclamation of December 8, 1906, for the purpose of preserving the sandstone cliffs some 200 feet in height, bearing inscriptions made by early Spanish explorers in the sixteenth and seventeenth centuries. The monument is too small to serve as a very important wild-life refuge, but it is associated with the discovery of one of the most characteristic birds of the Southwest, and as an actual record of the history of exploration of New Mexico it is probably unique. To the historian Inscription Rock is interesting chiefly on account of its association with the name of Juan de Onate, founder of Santa Fe, who, on his return from an expedition to the head of the Gulf of California, visited this point in 1606. To the ornithologist the rock recalls the visits of two eminent ornithologists, Dr. S. W. Woodhouse and Dr. Elliott Coues, and the discovery of the white-throated swift which occupies the rock as one of its breeding places. In 1851 the Government expedition from the Zuñi to the Colorado Rivers in command of Capt. Lorenzo Sitgreaves was encamped at this point and Dr. Woodhouse, naturalist and surgeon of the expedition, saw for the first time a new species of swift, which he named *Acanthylis saxatilis*. In his report he says:

> This beautiful swift I saw whilst encamped at Inscription Rock, N. Mex. Being on the top of this high rock at the time without my gun I was unable to procure specimens. I had a fair view of the birds at this time, as they flew close to me. I descended immediately and procured my gun; but the birds this

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time flew too high for me to be able to procure a shot at them. They were breeding in the rocks. (Sitgreaves, Report Expedition down Zuni and Colorado Rivers, p. 64, 1853.)

A few years after Woodhouse's visit Dr. Coues camped at Inscription Rock and records an experience with the swifts very much like that of Dr. Woodhouse. He says:

While encamped at Inscription Rock (the original locality of *saxatilis*) I saw great numbers of these swifts; but as I had been obliged to leave my gun behind, to accomplish the difficult and rather dangerous ascent of the cliffs, I failed to secure specimens, though the birds occasionally flew almost in my face, so that I could positively identify them. * * *. From Inscription Rock, which lies a day's march west of Whipples Pass, between this and Zuni, to the San Francisco Mountains, I saw the swifts almost daily—always when we passed the peculiar cliffs they frequent. * * *. They generally fly very high—far out of gunshot-range, and with extraordinary rapidity. I shall never forget my disappointment when, on this account, I failed to secure specimens under the most advantageous circumstances I could reasonably expect. (Birds of the Northwest, p. 266.)

In the absence of actual specimens, Dr. Woodhouse described the new swift as best he could as having the head and rump white; the back, tail, wings, and sides black; and as being white beneath. Three years later, in 1854, a specimen of the white-throated swift was collected near San Francisco Mountain, Ariz., and examined by Prof. Baird, who described it under the specific name *melanoleucus*. For many years the bird was known by the original name given by Woodhouse; but in recent years, chiefly because the white-throated swift has no white rump and no white-rumped swift has yet been found within the borders of the United States, this name has been replaced by that proposed by Baird, based on a more accurate description and an actual specimen. The white-throated swift is now known as *Aeronautes melanoleucus*, but Inscription Rock still marks the spot where the species was first seen by an ornithologist and recalls the peculiar circumstances under which the bird was introduced to the scientific world.

MUIR WOODS NATIONAL MONUMENT.

Seven miles north of San Francisco, nestled near the foot of Mount Tamalpais, is a tract of 295 acres known as the Muir Woods. This area, formerly in private hands, was deeded to the United States December 31, 1907, by William and Elizabeth Thatcher Kent for the purpose of preserving a grove of magnificent redwoods growing in the canyon within its boundaries. The reservation is interesting not only as a monument to the species for which it was established, but also to the public spirit of the donors and the memory of the eminent Californian, John Muir, whose name it now bears.

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Easily accessible from San Francisco, in an hour's trip by ferry, trolley, and steam railway, Muir Woods is visited by thousands of people every year. Many who are unable, through lack of time or means, to visit the giant sequoias on the slopes of the Sierras in the General Grant, Sequoia, and Yosemite National Parks may here become acquainted with its nearly related species, the redwood. Travelers from distant regions often find Muir Woods the most accessible point at which to observe the tree amid it natural surroundings. Great as may be the interest in the California redwood, this species is only one of a number of dominant types characteristic of an important natural-life zone in the humid coast area of California. Growing among the redwoods may be found a number of equally characteristic trees, shrubs, plants, and ferns, more or less strictly limited in their distribution to the so-called redwood belt. Here also may be found certain forms of birds, such as the crested coast jay (*Cyanocitta stelleri carbonacea*), the chestnut-backed chickadee (*Penthestes rufescens neglectus*), and numerous other forms of animal life peculiar to the coast region farther north. Here may be studied the complex relationships between the flora and fauna of the redwood belt and the more open regions in the central parts of the State. The value of Muir Woods as a wild life refuge lies not only in the preservation of the redwood trees, but in the preservation of all those species of plants, birds, and other animals which find their native habitat in the peculiar conditions under which the redwood thrives. In order to develop the reservation along these lines complete lists of the plants, animals, and birds should be published in a form accessible to the general public. Through cooperation of the California Academy of Sciences, the Cooper Club, and other organizations, local botanists, ornithologists, and zoologists should be encouraged to visit the reservation frequently and study it closely for the purpose of noting any changes in the native fauna or flora or the occurrence of rare species. When the more salient facts have been made as accessible as have been the characteristics of the geysers of the Yellowstone or the waterfalls of the Yosemite, visitors who annually go through the reservation will be stimulated to check up the observations and perchance add to the records of the occurrence of rare species.

PINNACLES NATIONAL MONUMENT.

The Pinnacles National Monument, so named on account of the spire-like formations which rise from 600 to 1,000 feet above the floor of the canyon, includes about 2,000 acres of land in San Benito and Monterey Counties, Cal. Aside from its geological and scenic interest, it is important as one of the last strongholds and breeding

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places of the California condor, the largest and one of the most characteristic birds of the State. This bird is protected at all times by a provision relating to nongame birds in the State game law. Not far from this monument is the type locality (or place from which the first specimen was obtained) of the peculiar form of blacktailed deer described as *Odocoileus columbianus scaphiotus* by Dr. C. Hart Merriam in 1898. The monument was created on January 16, 1908, and a year later it was made a game preserve by act of the State legislature (Laws 1909, ch. 428). Recently it has been made a separate game district by the game law of 1915 (ch. 379, sec. 26) which provides that "Game district 25 shall consist of and include those certain lands within the counties of San Benito and Monterey embraced within the Pinnacles National Monument," etc. Thus not only is this interesting area reserved from entry and occupation, but the bird and animal life of all kinds is now protected by special provisions in the State game law.

COLORADO NATIONAL MONUMENT.

In western Colorado near Grand Junction is a little known monument which has been in existence since May 24, 1911, containing a canyon which is described as "more beautiful and picturesque than the region of the Garden of the Gods at Colorado Springs." This is one of the larger monuments, comprising 13,883 acres, and is supplied with a number of fine springs. During the cold weather hundreds of mule deer come down into the park to spend the winter. The Colorado monument is capable of being developed into an important game refuge not only for the mule deer but also for antelope, elk, buffalo, and other species characteristic of western Colorado and the Great Basin. It is better adapted for the purpose than either the Rocky Mountain or the Mesa Verde National Park, and can probably be made one of the most attractive wild-life centers in the whole Rocky Mountain region. Under present State laws the hunting of buffalo, elk, antelope, and deer is prohibited at all seasons, and with proper provision for fencing and the introduction of small nucleus herds the area could readily be stocked with big game.

PAPAGO SAGUARO NATIONAL MONUMENT.

Nine miles east of Phoenix, Ariz., and not far from Tempe is located the Papago Saguaro National Monument, including about 2,050 acres of desert land in Maricopa County. This reservation was established by proclamation on January 31, 1914, and has been in existence only about three years. A ridge of low hills rising from the desert to a height of 150 or 200 feet extends through the center of the tract, and among the rocks are prehistoric pictographs which

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add to the ethnological interest of the monument. On account of its easy accessibility by automobile or team on the highway between Phoenix and Tempe, the monument is utilized largely as a picnic ground and is visited by several thousand people each year. It was created primarily for the preservation of the giant cactus (*Saguaro*) and other species of cactuses,[1] yuccas, candle bushes, and the peculiar desert flora characteristic of this region. The giant cactus is a favorite nesting place of the elf owl (*Micropallas whitneyi*) and the gilded flicker (*Colaptes chrysoides mearnsi*), while the clumps of other cactuses are the favorite breeding places of the cactus wren (*Heleodytes brunneicapillus couesi*). Other birds peculiar to this region are the curious curve-billed thrashers—Bendire's thrasher (*Toxostoma bendirei*) and the crissal thrasher (*T. crissale*), and the Arizona woodpecker (*Dryobates arizonæ*). Thus the preservation of the flora naturally attracts and preserves an aggregation of desert birds which find among the shrubs and plants suitable nesting places and an abundance of food.

Immediately west of Tucson the Carnegie Institution established, in 1903, the desert laboratory of its department of botanical research for the investigation of problems connected with the study of desert plant life. At Phoenix the Government has now established a reservation for the protection on a larger scale of some of the desert species which are the subject of study at Tucson. Three years after the establishment of the desert laboratory the grounds were inclosed by a wire fence, and within a few months after the completion of this fence a marked difference was reported between the vegetation within and without the inclosure, and also a marked increase in the number of the smaller animals. This fact is significant in showing the importance of preventing grazing animals from having free access to the monument. Apparently no complete list of the plants has yet been made, but lists both of the plants and birds should be prepared for the purpose of noting changes in the flora and fauna and for interesting the general public in the true purpose of the reservation. While the giant cactus and the yuccas may be the most conspicuous species, they are not necessarily the most interesting, and the full value of the reservation can only be developed by furnishing information to the general public in concise and popular form as to the effect which these dominant types have on other forms of life and in the whole group of species which characterizes the plant and animal life of the desert.

SIEUR DE MONTS NATIONAL MONUMENT.

Mount Desert Island, a unique and striking landmark on the Maine coast, was the first land along the coast to be described and named by

[1] Probably at least one-half of all the species native to Arizona grow within the limits of the reservation.

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the French explorer Champlain. Recently 5,000 acres adjacent to Bar Harbor, including the most rugged parts of the island, have, through the generosity and public spirit of the Hancock County trustees, been dedicated forever to free public use and the purposes of wild-life conservation. The historical associations of the locality are preserved in the name of Sieur de Monts, under whose orders Champlain sailed when he discovered the island in 1604. The geological objects of interest are preserved in the bold granite cliffs which form the only mountainous tract thrust prominently out into the sea along this part of the coast. The botanical importance of the region is shown by the fact that hills and mountains support on their slopes and in their valleys a diversity of plant life which is said to be greater than can be found in any area of equal size in New England or in the Eastern States. Mount Desert lies in the highway of bird migration along the Maine coast, and here converge the lines of migrants from the north and east on their way south. Birds from four distinct life zones visit the island at some time during the year. Denizens of the Arctic and of the Hudsonian zone in Ungava and southern Labrador visit it in winter; species of the Canadian life zone, which breed in southern Canada and northern New England, nest here in summer; and in addition some species from the more southern Transition or Alleghenian fauna straggle in from the west and south. Such are some of the historic and scientific objects of interest preserved in this new monument created by proclamation on July 8, 1916. Here are preserved under most favorable circumstances a unique collection of native animals, birds, and plants, which can be enjoyed and studied amid their natural surroundings.

The plans of the founders of the reservation contemplate not merely the protection of the wild life of the area, but also its development under natural conditions, so that some forms now rare may become more abundant and the reservation thus be made more attractive. Here it may be possible to develop a bird sanctuary and feeding stations for birds on the lines of those which have proved so successful in Europe. By cultivating native shrubs and plants which furnish food for birds and thus making the sanctuary more attractive to certain birds which are now rare or which linger only a short time during migration it may be possible to induce them to tarry longer and perchance breed within the boundaries of the monument. In accessibility, opportunity for experimental work, and as a field for botanical or zoological study Sieur de Monts is unexcelled by any of the other monuments.

From the foregoing it may be seen that the much misunderstood term "monument" has a distinctive place and is in reality descriptive of certain kinds of reservations. One has only to consider the Muir

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Woods and Sieur de Monts monuments as sanctuaries established on the Pacific and Atlantic coasts for the preservation of redwoods and the northern coniferous trees, respectively, to realize that in reality these two reservations are at least monuments of the public spirit of private citizens who have dedicated these wonderful tracts of wild land to the Government for the benefit of all the people.

It is apparent also that there are ample means of protecting the natural monuments which have been nationalized by proclamation and placed under the care of the Government, and that on some of the reservations are some highly interesting species which deserve the protection which can only be afforded by a wild-life sanctuary. Some kinds of big game occur in even larger numbers than in some of the national parks. Thus in the case of elk, the Mount Olympus National Monument during the breeding season harbors most of the Olympic elk in existence. Nowhere else, not even in the Mount Rainier Park in the same State, is any considerable herd of these elk to be found. The number at the present time, probably about 4,000, is larger than that of any herd of elk outside of the Yellowstone Park region.

In the case of mountain sheep, the records show about 220 sheep in the Yellowstone Park, about 400 in the Rocky Mountain Park, and a few hundred in the Glacier Park, while about 1,000 have been reported in the Grand Canyon of the Colorado. Thus the Grand Canyon Monument at present not only has more sheep than any one of the national parks, but possibly as many as there are in all of the national parks combined.

No species of big game except the antelope is in greater need of protection than the mule deer. Although several of the parks and reservations, including the Yellowstone, the Rocky Mountain, the Glacier, the Wind Cave, and Sullys Hill National Parks, and the National Bison Range, the Wichita game preserve, and the Niobrara Reservation are well adapted for this species, yet not one of these refuges has a large number of mule deer at the present time. The number in the Yellowstone Park in 1914 was estimated to be about 1,100; there are a few hundred in the Rocky Mountain Park, some in the Glacier Park, and practically none in the other reservations. In the Grand Canyon game preserve, which overlaps the Grand Canyon National Monument, there are said to be several thousand and many mule deer come down in the winter to the Colorado National Monument. While the exact number of these deer in the monuments is unknown, it is perhaps not too much to say that the Grand Canyon game preserve, the Grand Canyon Monument, and the Colorado Monument are better stocked than any other reservations with this interesting species of deer which is so characteristic of the West.

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In the administration of the national parks, much attention has been devoted to rendering the parks accessible and much emphasis is laid on the number of visitors. In comparison with the expenditure on some of the parks, the amount expended in improving the accessibility of the national monuments has thus far been insignificant, but, notwithstanding this fact, four of the monuments above mentioned—the Grand Canyon, Muir Woods, Papago Saguaro, and Sieur de Monts—are readily accessible and are visited annually by thousands of sight-seers.

The first three of these reservations are open throughout the year and Muir Woods, Papago Saguaro, and Sieur de Monts are within easy reach of near-by cities. It does not require a million acres, a million dollars, or a group of attractions like those in the Yosemite and the Yellowstone to attract a large number of visitors. Muir Woods, with its 300 acres and a grove of redwoods, has as many visitors, in some years, as any of the larger parks, not even excepting the Yellowstone, with its 3,000,000 acres, its famous canyon, its falls, and its many geysers and hot springs. The number of visitors at the Grand Canyon in 1915 was estimated at 100,000, or three times as many as have ever visited the Yosemite or Mount Rainier and twice as many as have ever visited the Yellowstone in a single season. Even the Papago Saguaro has more visitors than such parks as the Casa Grande Ruins, Sullys Hill, or the Mesa Verde. People will find objects of interest and means of enjoyment in any of the reservations which are within easy reach, and since some of the monuments may be made more accessible than some of the parks, and at less expense, it seems important to develop at once the resources of these reservations for the benefit of the public.

PUBLICITY.

More attention should be given to publicity both within and without the reservations—within, by making the points attractive, by marking the less prominent objects of interest, not merely with names and signs but with descriptive labels somewhat after the type of museum labels; without, by bringing the monument home to the individual who can not be brought to the monument. In addition to the usual methods of publicity employed in popularizing the national parks, such as illustrated publications, magazine articles, news notes, photographs, moving pictures, railroad advertising, etc., certain other methods are necessary to disseminate and popularize the information regarding some of the smaller and more remote reservations. In comparison with the geological work which has been done in some of the parks and the ethnological work which has been undertaken on some of the ruins in the Southwest, the amount of natural

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history work actually done in the parks and monuments is pitifully meager. Such work whether done by the various bureaus of the Government or by private enterprise should be encouraged in every possible way. We can hardly know too much about the natural resources of these various recreation grounds. There should be many more publications like those on the flora of Mount Rainier, the fishes of the Yellowstone, the forests of Crater Lake, of the Yosemite, and of the Sequoia Parks. Lists of the birds and mammals, such as are now published in the circulars of information of the Yellowstone and Yosemite, but with brief notes, should be prepared for each of the monuments which form important wild-life sanctuaries. Efforts should be made not merely to add to the volume of current and ephemeral literature, chiefly useful in attracting visitors, but to encourage the preparation of more permanent publications in the form of local lists, special papers, and monographs which may find a place in the proceedings of scientific societies and later utilized in the preparation of textbooks and standard works of reference.

Public museums, especially those which are now devoting attention to the installation of so-called habitat groups or the exhibition of animals, birds, and plants in groups amid natural surroundings, should be encouraged to obtain material and install groups representing the wild life of these reservations. Such groups illustrating the Muir Woods, the Sieur de Monts, the Grand Canyon of the Colorado, the Pinnacles, and the Papago Saguaro installed in the museums of San Francisco, Los Angeles, Denver, Chicago, and New York would be viewed by thousands of visitors and prove of high educational value. Local students interested in particular problems in distribution of wild life should be encouraged to make the monuments and the parks the field of their investigations. Notes on the wild life should be furnished regularly to such organizations as the American Game Protective and Propagation Association, the National Association of Audubon Societies, the Mazamas, the Sierra Club, and local associations which are interested primarily in problems of conservation and education so that their members may assist in the work of disseminating information and popularizing the reservations.

ADMINISTRATION.

The proper administration of some of the smaller national monuments differs greatly from that of the larger reservations or of the national parks. A national monument may be allowed to lie dormant for years, practically unknown and undeveloped; it may be left without a custodian only to be injured or destroyed by vandals so that eventually it accomplishes nothing more than if it had never been established; or it may be cared for and developed so as to pro-

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duce a rich return to the people for whose benefit it was created. Such a monument as the Devils Tower, which can not be carried away or seriously defaced except by painting signs and advertisements on the rocks at its base, may require little beside publicity and warning notices to make it properly known and provide for its protection. Monuments like the Montezuma Castle or the Navajo, which contain cliff dwellings, require not only publicity to make their wonders known, but also custodians to protect their ruins from injury. But a monument established for the preservation of wild life requires more than either of the types of reservations just mentioned. It needs publicity of a peculiar kind to set forth clearly and in simple language the facts (often obscure to the casual visitor) regarding the nature and life history of its treasures. It requires the services of a resident official, who should be something more than a mere custodian, who should be intelligent, and in sympathy with the objects of the reservation in order that he may act as guardian, guide, and instructor to the public and impart authentic information while answering the numerous questions regarding the objects under his charge. It also requires constant observation and careful study by specialists. A reservation like the Muir Woods is undergoing constant changes, many of which are apparently only upon close examination. Species now abundant may become scarce, others now rare may increase in abundance, and still others now absent may appear. The dates of arrival and departure of the birds, the times of their meeting, the dates of flowering and fruiting of the plants all vary from season to season. These and other similar facts should be observed, recorded, and made public. Much of this work can not be performed by a regular custodian and can be done, if at all, only through the cooperation of special students or observers. A national monument maintained as a sanctuary for wild life should become practically a natural outdoor laboratory or observatory. It is in reality a property of all the people which can only be administered successfully for the people, when utilized fully and studied carefully by the people themselves.

THE PRESIDING OFFICER, MR. BURNHAM.

As an added feature, and closing the afternoon's program, Mr. Belmore Browne, one of the leaders of the Parker-Browne expedition, will tell us of the conquest of McKinley. Mr. Browne.

MR. BELMORE BROWNE.

THE CONQUEST OF MOUNT MCKINLEY.

Mr. Chairman, ladies and gentlemen, I have a very few minutes in which to show you a little bit about the Mount McKinley country.

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I have taken out half of my slides, and so, as I can not take out the rest here at this time, I will ask the operator to go right straight ahead and push the pictures through as quickly as he can until we get to the Mount McKinley country. Before we get to the Mount McKinley country I will give you a little bit of an idea of the route we are going to cover to-night. It has been my good fortune to put in about three seasons exploring around the base of Mount McKinley with the idea of trying to climb the big mountain.

(Whereupon the pictures were shown on the screen.)

THURSDAY, JANUARY 4, EVENING SESSION.

The Thursday evening session consisted of an illustrated lecture on Mount McKinley, by Stephen R. Capps, Geologist, United States Geological Survey, Washington, D. C.

MR. STEPHEN R. CAPPS,

Geologist, United States Geological Survey, Washington, D. C.

THE MOUNT MCKINLEY NATIONAL PARK.

In the spring of 1916 a bill was presented to Congress to establish in Alaska the Mount McKinley National Park. This bill was passed by the Senate during the summer, and its final enactment into law now requires favorable action by the House and the President. Before this article is published the necessary legislation may have been completed and the dream of this new park have become a reality, but in any event every one of us who loves outdoor life should realize what a wonderful country—a country of impressive mountain scenery and big game—we have in that northern territory, and how seriously the wild life of that region is menaced.

My own interest in the general area in which the proposed park lies began in the summer of 1910, when as a member of a United States Geological Survey party, I spent several months on the north side of the Alaska Range, east of Nenana River. To extend that earlier survey westward two parties were sent out in 1916, one, in charge of C. E. Giffin, to make a topographic survey, and the other, in my charge, to study the geology and the mining industry.

We sailed from Seattle June 2, with pack horses, camp equipment, and provisions for three months, and after four delightful days of travel along the famous "Inside Passage" landing at Skagway. A daytime journey up the mountains, through White Pass, and down the opposite slope, brought us to Whitehorse, where we boarded a river steamer, which brought us to Nenana, at the mouth of Nenana River, on June 16, just two weeks out of Seattle. Under other cir-

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cumstances the fledgeling town of Nenana would have held our interest for awhile, for there the work of building the new Government railroad to interior Alaska was just starting, but the urgent demand of our season's work was pulling hard on us, and our hands were full in getting our outfits ready for the trail.

The 55-mile trip over a little-used trail up Nenana River was eventful enough. We had only a badly damaged and leaky boat to cross that swollen and turbulent stream, and for the better part of a day the horses refused to swim the icy torrent. Then, too, in the forested lowlands the mosquitoes surrounded us in clouds. We could protect ourselves with gloves and head nets, but the horses were constantly covered with the insects so that all of them—white, bay, and black—took on the dirty-gray color of the mosquitoes themselves.

We began our surveys at Nenana River, east of the park, and extended them westward over several thousand square miles. The area surveyed includes practically all that part of the park which lies east of Mount McKinley. The part lying west of Mount McKinley we saw only from a distance, but we knew the general character of the country from reports of earlier explorers. Fortunately for the needs of this article, Mr. Giffin was employing the photographic method of topographic mapping, and his equipment included a splendid panoramic camera, with which he took all the panoramas here shown. My own camera, though much smaller, was valuable on account of the speed with which it could be made ready for use in this country, where at any moment a fine chance for a picture showing game might present itself. Our duties as members of the Geological Survey occupied nearly all our energies, so that we had little time to get photographs of game, those which we took being merely snapped incidentally in the course of our work. Certainly we had no better opportunity for game photography than can be found by any other traveler in the same area.

We had spent only a short time in the field when we discovered that the park had been laid out in a most admirable way. It is true that there is fairly abundant big game and much country of great scenic beauty outside the boundaries, but we entered a game paradise and a land of unrivaled scenery when we crossed the park line. Singularly enough, too, when we were once within the high mountains of the park we left behind us most of the mosquitoes, and for a month were almost free from the exasperating attacks of these annoying pests.

When, in the spring, we had first learned of the proposal to establish this park and had plotted its outline on the map we wondered at its curious shape. Once we were on the ground the reason for this shape became evident. The long dimension follows the general course of the Alaska Range from Mount Russell to

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Muldrow Glacier, the park including all the main range from its northwest face to and beyond the summit. East of Muldrow Glacier the range widens toward the north and consists of a number of parallel mountain ridges separated by broad, open basins. There, at the headwaters of Toklat and Teklanika Rivers, sheep and caribou range in greatest abundance, and the northern part of the park includes the best of the game country. The reentrant angle in the park line north of Muldrow Glacier was so placed as to exclude the Kantishna mining district and the hunting ground from which the miners obtain their supply of meat. The total area of this great playground is about 2,200 square miles.

In scenic grandeur the stupendous mass of which Mount McKinley is the culminating peak has no rival. The snow line here lies at about 7,000 feet, and above that elevation only a few sharp crags and seemingly perpendicular cliffs are free from the glistening white mantle. From the valley of McKinley Fork, which is at the north base of the mountain and stands at an elevation of only 1,500 feet, the bare rocks of the lower mountains extend upward for about 5,500 feet, and above them Mount McKinley rises in majestic whiteness to a height of 20,000 feet—the loftiest peak on the continent. The upper 13,000 feet of the mountain is clad in glaciers and perpetual snows, thus offering to the mountaineer the highest climb above snow line in the world. The rise of 18,000 feet from the lower end of Peters Glacier, north of the mountain, to the highest peak is made in a distance of only 13 miles. In no other mountain mass did we find so great a vertical ascent in so short a distance. The peaks of the Colorado Rockies, though wonderful, rise from a high plateau, so that at most points from which they can be seen they stand only 7,000, or, at most, 8,000 feet above the observer. Mount St. Elias, an 18,000-foot mountain, may be seen from sea level, but the peak stands 35 miles from the coast, and so loses in height to the eye by the distance from which it must be viewed. Similarly, the high volcanic peaks of Mexico and South America and the world's loftiest mountains in the Himalayas rise from high plateaus which diminish by their own elevation the visible magnitude and towering height of their culminating peaks.

Southwest of Mount McKinley, 15 miles away from it, stands Mount Foraker, only 3,300 feet lower and almost equally imposing. If it stood alone, Mount Foraker would be famous in its own right as a mighty peak, having few equals, but in the presence of its giant neighbor it is reduced to secondary rank. These two dominating peaks, standing side by side and known to the interior natives as Denali and Denali's Wife, far outrank the flanking mountains to the northeast and southwest, among which, however, there are a score

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of other peaks that rise to heights between 7,000 and 14,000 feet, well above snow line, and that are the gathering ground for many glaciers.

If the park had been chosen especially for its glaciers, its southeastern boundary would have been placed far enough below the summit line to include the great glaciers that are tributary to the Chulitna and Yentna Rivers. As it is, the park includes only the heads of those magnificent ice streams. There is a striking discrepancy in size between the glaciers of the Mount McKinley district that lie on the Pacific slope and those that drain to Bering Sea. This discrepancy is due in part to the greater width of the range, from summit down to snow line, on its southeastern slope, so that the area from which the glaciers are nourished is much larger on that slope than on the other. This discrepancy is increased by the heavier precipitation on the southeastern slope. Records of the rainfall in the park are not available, but the southeastern slope receives abundant rain and snow, and the climate on the northern slope is comparatively dry.

Of the glaciers that the tourist will visit in the park, the largest and most accessible is Muldrow Glacier. Fed by a number of ice tongues, one of which comes directly from the summit of Mount McKinley, it sweeps northeastward for 27 miles down a deep, well-hidden valley. Twelve miles above its terminus it bends sharply to the north, at a point where it first appears to a traveler along the mountain front. The total length of this glacier is about 39 miles, and its range in elevation is from over 20,000 feet, at the top of McKinley, to about 2,500 feet at its terminus. It is along the upper reaches of Muldrow Glacier that the successful mountain-climbing expeditions have toiled to reach the summit of America's highest mountain.

Southwest of Muldrow Glacier there are at least five ice tongues that reach a length from 10 to 20 miles, and all of them are easily accessible and plainly visible from the Piedmont Plain. Each of the larger valley heads east of Muldrow Glacier harbors a small ice field, and all the rivers that drain the main range within the park are glacier fed and carry large amounts of glacial débris during the summer, when the long, warm days send down floods from the melting ice fields.

Not the least impressive feature of this part of the Alaska Range is the tremendous scale upon which the foundations of the earth are exposed to view. Especially in the valley heads, where vegetation is sparse or lacking, the high mountain ridges, cut by deep valleys, offer impressive sections for the study of the earth's structure. Here great lava flows and volcanic intrusions, in vivid shades of red, purple, brown, and green, will tax the color box of the artist. Masses of sedimentary rocks, first deposited as flat-lying beds, but now

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standing vertical or twisted into giant folds, give a hint of the Titan forces that built a mountain range. And near the eastern border of the park, at the Nenana coal field, the traveler can see how nature by her generous placing and preservation of coal within the rocks, makes possible the industrial prosperity of our Nation by furnishing the fuel needed for its manufactures.

The Mount McKinley region now offers a last chance for the people of the United States to preserve, untouched by civilization, a great primeval park in its natural beauty. Historically, this country is new. It was not until 1897 that W. A. Dickey, after having explored in the upper Susitna Basin the previous summer, published a description of Mount McKinley, made his remarkably accurate estimate of 20,000 feet as the height of the mountain, and gave it the name it now bears. In 1898 the first actual survey in the neighborhood of the park was made by George H. Eldridge and Robert Muldrow, of the United States Geological Survey. In 1899 an Army expedition in charge of Joseph S. Herron explored a part of the area near the southwestern boundary of the park. In 1902 the first surveying party that actually reached the vicinity of Mount McKinley was conducted by A. H. Brooks and D. L. Raeburn of the Geological Survey. This party entered the park at its southwest border and traversed it from end to end, bringing out the first authentic information in regard to an unexplored area of many thousand square miles and determining the position, height, and best route of approach to the base of Mount McKinley.

Inspired by the information furnished by the Brooks party, the first attempt to climb this great mountain was made in the summer of 1903 by James Wickersham, now Delegate to Congress from Alaska and sponsor for the pending bill to create this great national park. Judge Wickersham's party succeeded in reaching an elevation of 10,000 feet, but a lack of proper equipment and sufficient provisions prevented them from climbing to the summit. During that same year Dr. Frederick A. Cook, following the route already traversed by Brooks, made two attempts to scale the mountain from the northwest and in one of them succeeded in ascending to a height of about 11,000 feet, to be turned back by impassable cliffs. In 1906 Cook headed a second expedition in an attempt to reach the summit from the Susitna Basin side but apparently failed again to reach the top.

By 1910 the interest in the scaling of this mountain had become so strong that several expeditions were organized for that purpose. The one first on the ground consisted of four Alaskan pioneers and miners—Thomas Lloyd, William Taylor, Pete Anderson, and Charles McGonagall. These men were accustomed to the

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hardships of travel in low temperatures but had had little or no experience in alpine work. Ignoring the elaborate preparations and precedents of earlier expeditions, they sledded with dog teams to the base of the mountain in the early spring, and after backpacking provisions for several weeks to successively higher camps, two of them—Anderson and Taylor—gained the summit of the northeast peak and placed a flag there. They chose the northeast peak, although it is a few hundred feet lower than the southwest peak, because they thought a flag on that point would be more plainly visible from the lowland to the north. The ascent of the highest peak was not attempted, although the route to it was said to present no difficulties. So the ultimate goal was still unattained.

That same year two attempts were made to scale the mountain from its south slope, one by C. E. Rust, and the other by a party organized by Prof. Herschel Parker and Belmore Browne. Neither of these expeditions succeeded in finding a practicable route to the summit. A second Parker-Browne expedition was started in 1912 for the purpose of making the climb from the north slope. The party left Seward in January and for many weeks was sledding supplies across the mountain range to a base camp near Muldrow Glacier. They went to the Kantishna mining camp for supplies and did not actually begin their climb until early in June. When they were within a few hundred feet of the top of the mountain a blizzard caused them to retreat. They made a second attempt on July 1, but their progress was barred by cloud and fog and as their food was now gone they were forced to abandon their aim after having so nearly achieved it.

The highest peak remained unconquered until 1913, when on March 17, Archdeacon Hudson Stuck and three companions left the mouth of Nenana River, traveled by the dog sled to the Kantishan district to pick up supplies landed there by boat in the fall of 1912, and proceeded to the basin of Clearwater Fork, at the north base of Mount McKinley. After preparing their own pemmican from wild meat obtained near camp, they began the actual ascent about the middle of April and reached the peak on June 7, 1913. Thus the mountain summit was scaled 17 years after its first adequate description was published.

The history of our existing national parks shows that almost without exception their establishment for the benefit of the public as a whole has resulted in inconvenience to at least a few people who had settled within the park areas, and as a consequence the Federal Government has indemnified the occupants for the loss they sustained. The establishment of this proposed Alaskan park will involve no such expense or inconvenience. To my certain knowledge

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there is no permanent habitation in the part of the park that lies east of Mount McKinley. A few log cabins have been built by hunters or trappers, but all these were unoccupied during the summer of 1916. Some of them, however, contained traps and hunting equipment to show that the owners intended to return. If the park is set aside a few trappers may be forced to find new hunting grounds, but the market hunter, who kills game wholesale, in violation of the law, deserves no consideration. So far as could be learned, the whole of the proposed park is thus uninhabited. Even the Indians of the Tanana Valley seldom go to the high mountains to hunt, as they prefer to obtain their meat supply nearer the settlements. Curiously also, there is, so far as I know, not one mining claim within the prescribed area, and what prospecting has been done there seems to hold out rather faint hope to the miner. Just north of Mount McKinley lies the Kantishna mining district, in which active gold placer mining has been carried on continuously since 1905. This district also contains promising though little-developed lodes that carry gold, silver, lead, zinc, and antimony. When gold was discovered in this camp a large number of prospectors came to the region, and many of them carried their search for gold into the park area, yet they discovered no encouraging amounts of the precious metals. The park lines were wisely drawn to exclude the Kantishna mining district, and although the bill for establishing the park allows prospecting and mining within its boundaries, there is no immediate likelihood that active mining will be developed. So far as I could learn, this vast area has no permanent residents.

Between June 25 and July 30 the two Geological Survey parties traversed every important valley in the eastern half of the park, yet in that time we saw not a single human being, white or native, nor any signs that would indicate the recent presence of anyone there. The southwest end of the park is still more remote from any settlements, and it is unlikely that we would have met anyone if we had continued our journey to the southwest line.

As a game refuge the new park includes an area that is unique in this continent, and few regions in the world can vie with it. Many parts of Alaska are famous for big game, and hunters have come half around the world to that territory to obtain trophies of their skill. It has been my good fortune to visit several of the choicest game ranges in Alaska, notably that east of Nenana River, adjacent to the Mount McKinley district, and the much praised White River country. Both these regions are well stocked with game, but for abundant sheep, caribou, and moose over wide areas, neither of them compares with the area within the limits of the new game preserve. The mountains at the head of Toklat and Teklanika Rivers literally swarm with the magnificent white bighorn sheep, which are else-

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where extremely wary and difficult to approach, but which in summer are here so little disturbed that they move off only when one comes to close range. A day's travel along one of these valleys will usually afford the casual traveler a view of many bands of sheep. The sheep range on the lower slopes of the mountains, especially in the upper reaches of the streams, near the glaciers at the valley heads, or even in the valley bottoms. I have counted over 300 in a single day's journey of 10 miles along the river bars, and doubtless as many more were unobserved in the tributary valleys beyond my view. From a single point at my tent door one evening I counted nine bands of sheep, containing in all 171 animals. The bighorn sheep prefers the slopes of high, rough mountains for its range, and may be found only in the mountains, within easy reach of rugged crags to which it may retreat for safety from its enemies. Its range, therefore, lies between timber line and the level of perpetual snow. It is difficult to make an accurate estimate of the number of sheep within the new park, but in the part that we visited there are easily 5,000 sheep, and their range extends westward throughout the mountainous portion of the park.

Caribou may be found both in the rolling lowlands and in the higher and rougher ranges, with the sheep; there are, indeed, few places within the park that are not occasionally visited by caribou. We saw old bulls, singly or in twos or threes, as far east as Nenana River. As we traveled westward we found caribou more numerous, and in the headward basins of the forks of Teklanika River few days passed in which we failed to see them, but still only in small bands. On reaching the headwaters of the Toklat we came to the great summer caribou range, from which the animals we had already seen were stragglers.

I remember well my first big day for caribou. The pack train had gone ahead to pitch camp at a prearranged spot near the last spruce timber on the main Toklat, and I was examining the rocks a few miles east of the camping place. Herds of sheep were scattered along the ridges, some feeding on the tender grasses, some sleeping in the sun. I was far above timber line and my view was unobstructed for miles in all directions. With my glass I had already counted half a dozen solitary caribou, all young bulls, grazing among the stunted willows of the stream flats. Soon my attention was attracted by a sight unusual in this district—a frightened caribou bull, which was running from the direction in which my pack train had gone. Soon two yearlings came rushing from the same quarter; then a cow and a young calf in full flight, the cow with tongue out and sides heaving and the calf following closely but in no apparent distress. Then more came, singly or in twos and threes. Soon a lone calf, lost from its mother, passed close to me,

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uttering plaintive grunts. As I approached the main river valley from which the frightened animals came, I met the main herd, 25 or more, walking slowly up a narrow gulch a hundred yards from me, and apparently unworried by the presence of strangers on their range. During the next few days I saw more caribou than I dreamed existed in any one locality, including a herd of 200 which was viewed at close range on the Toklat bars.

In the pass between Toklat and Stony Rivers, the two pack trains and eight men stood in the midst of a vast herd, scattered for miles in all directions. We counted with the naked eye over a thousand within half a mile of us, and hundreds of others could be seen too far away for accurate count. In order not to exaggerate, even to ourselves, we estimated the number in sight at one time at 1,500, and I believe that this is an underestimate of the number actually there. Most of them were cows and calves, or yearlings, but there were a few old bulls, conspicuous for their towering horns. During the following week we constantly saw herds of caribou, some of them numbering hundreds. Most of these herds were on the bare gravel bars, where the strong winds afford some relief from the attacks by flies and mosquitoes. Other herds were high on rugged mountain ridges, and several large droves were observed far up on the glaciers, well toward snow line, seeking a little respite from insect pests.

In other parts of Alaska caribou at times appear in huge droves as they migrate from place to place, but they stay only a short time in any one locality. In the Toklat Basin and in the vicinity of Muldrow Glacier, however, the caribou are at home, and they remain there throughout the summer to rear their young. There is abundant indication that this is a permanent range. Deeply worn trails form a veritable labyrinth along the stream flats, and bedding grounds, old and new, occur everywhere. The miners from the Kantishna report that caribou may always be seen in great numbers on this range.

There is a striking difference between the actions of caribou and those of the bighorn sheep when surprised by man. A sheep, once aroused, knows exactly where he wants to go and usually starts, without a moment's hesitation, on the shortest route to some rugged mountain mass. He may stop to look around and appraise the danger, but he is sure to follow the route he first chose. By contrast, the caribou appears a foolish animal; he seems at a loss to decide whether it is necessary to run away at all. Then, when convinced that danger threatens, he has difficulty in making up his mind which way to run. He has sharp eyes for any moving object, but evidently refuses to trust his sight until his nose confirms his sense of danger. I have many times seen a caribou, after he has discovered me at a distance of no more than 100 yards, stand and look, snort, lower his

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head half a dozen times, then run wildly off for a short distance, turn back toward me, repeat the same maneuvers, and make several false, zigzag sprints, all within easy gunshot, before he finally ran to leeward, got the man scent, and started off for good in great panic. In this region, with proper caution and a favoring wind, one can almost always approach within 200 yards or less of a band of caribou, even in the open, before they take alarm and move away.

Moose are very plentiful in certain parts of the new park, but are not so commonly seen as sheep and caribou. As their food supply consists of willow and birch twigs and leaves and the succulent roots of water plants, they stay much of the time in timbered and brushy areas, where they are inconspicuous. By nature, too, the moose is a wary animal and permits much less familiarity than the caribou. The best moose country in this region lies in the lowlands north of the main Alaska Range, outside of the boundaries of the proposed park, but some moose were seen within the park lines, and doubtless more of them will take refuge in this game preserve when they are more vigorously hunted in the neighboring regions. It is said that there is an excellent moose range within the park in the area southwest of that which we visited.

There are some black, brown, and grizzly bears in this district, but the bear hunter has a much better chance of obtaining a hide in other parts of Alaska than he has here. All told, only eight bears were seen by the members of the two survey parties during the last summer, and bear sign was so little noted in this region that it can not be considered an especially good bear country.

The park contains good trapping grounds for the fur hunter, and a number of trappers spend part of each winter there. Foxes are plentiful, and an unusually large proportion of the pelts taken are of silver gray or black fox. One trapper told me that in Toklat Basin the winter's catch for a number of years has yielded one silver-gray fox skin for every eight foxes caught, and of the remaining seven several are likely to be good cross fox. We saw a good many foxes and found two dens around which young ones were playing. Lynx are also plentiful, and numerous mink, marten, and ermine have been taken. Beaver were seen in the park, but are exceptionally abundant in the marshy lowlands north of it. On our trip down Bearpaw River, in the fall, while we were on our way to Tanana, we saw everywhere along the banks signs of beaver. Freshly cut cottonwood and willow trees lie along the shores, and the trails used by the beaver to bring sections of trees down the banks were seen at short intervals. Night after night we would hear the sharp splash of the swimming animals as they whacked their tails upon the surface of the stream. Beaver are protected by law until 1920, and under this protection have greatly increased in numbers. In the low-

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lands they have so much obstructed all the smaller streams with their dams that foot travel overland is impossible until ice forms.

In order to give the reader an idea of the abundance and variety of game to be seen by the traveler in the Mount McKinley Park, I am showing here a photograph of a page taken from my diary, in which I each day made record of the big game animals I saw. In making my count I was perhaps overmoderate, for if in a trip up a valley I saw 90 sheep, and on my return by the same route I saw the same number I added nothing to my count, presuming that the sheep last seen were the same as those counted earlier in the day. Thus while traveling among herds of animals that were in constant movement from one feeding ground to another I may have failed to make record of many new herds that came into sight because I was not sure they were new herds. The same practice was followed in counting caribou. An examination of that diary or record, which was made from day to day in the field, shows how wisely the park lines were established so as to include the best game ranges. Until July 8 we were outside the park, and although we were in a good game country we saw comparatively few animals on any one day, and on some days none. Our crossing of the park line was coincident with a remarkable increase in the number of animals seen, and afterwards there was a steady succession of days in which game was sighted. The decrease in numbers on July 26, 27, and 28 was due not to a paucity of game in that part of the park but to a violent rainstorm that kept us in camp. Even then we had only one gameless day, for our record was kept almost unbroken by caribou that passed close to our tents on two of the three bad days.

The record also shows to some extent the distribution of moose in this general district. We saw a few in the lowlands outside the northeast corner of the park and some after we had left the reserve, but I myself saw not a single moose while I was within the park lines. I did see a good deal of fresh sign, however, and other members of the survey parties saw moose, but certainly they are less abundant within the park, at least east of Muldrow Glacier than they are in the lowlands between the Alaska Range and the Tanana River.

I have tried to make plain the fact that the area within the proposed national park is a game country without rival in America. That is certainly true to-day, but unless this game refuge is reserved a few years may see these great herds destroyed beyond hope of reestablishment. Even to-day the encroachments of the market hunter are serious. True there are game laws in Alaska, but they are poorly enforced, and many sled loads of wild meat are carried into the towns during the winter. The town of Fairbanks, the largest settlement in the interior, is the destination of most of the

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wild meat killed on the north side of the Alaska Range. The mountains just south of Fairbanks and east of Nenana River offered a convenient field for the market hunter, and for years large numbers of mountain sheep were killed there for the Fairbanks market.

Within the last few years, however, the sheep herds in the nearer mountains have become so depleted that the hunter has been forced to go constantly farther from his market, and now finds the most satisfactory hunting ground within the limits of the proposed reserve. I talked with several men who take sheep meat to Fairbanks for sale and one of them estimated that each winter for the last three years from 1,500 to 2,000 sheep have been taken from the basin of Toklat and Teklanika Rivers. Only a part of these reach Fairbanks, for the sled dogs must be fed during the hunt and on the trail, and some hunters leave behind all but the choicest hind quarters. It can be readily seen that slaughter on such a scale can last only a short time until the game here, too, has been nearly exterminated. The sheep, being of choicest flavor, are taken first, but the moose and caribou will not escape after the sheep become harder to get.

Such are the conditions to-day, even in a region so difficult of access. How much more rapidly will the game disappear when the railroad is completed to a point within 15 miles of this game paradise. The establishment of a town at Nenana, where the railroad crosses Tanana River, has even now brought a market for game some 50 miles narer the sheep hills of the Toklet. Already homesteads have been taken up along the railroad, and in a few years this untouched wilderness will hear the sound of the mower and the clatter of railroad trains. If the park is established now, the game can be saved and will remain for other generations to enjoy. If action is postponed a few years, the market hunter and sportsman will have done their work and the game will have gone forever.

Most of the larger streams of the park, heading as they do in glaciers, are heavily charged with glacial débris; they are so muddy that fish will not live in them. All of the smaller tributary creeks that carry clear water, however, are stocked with grayling, and furnish excellent fishing. The grayling, a relative of the trout, is a game fish, rises well to the fly, and affords excellent sport. In texture and flavor it compares well with the trout, and is a welcome addition to the menu of the camper.

As will be seen from the photographs, the new park lies almost entirely above timber line. Trees grow along the valleys of the main streams to an elevation of about 3,000 feet above sea level, but the timbered areas comprise only a small fraction of the whole. The only trees of importance are the spruce, birch, and cottonwood, and none of these are large. The best patches of trees afford logs big enough for making log cabins, but there is no merchantable timber

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in the park. Willow brush and some alders grow somewhat farther up the valleys than the trees, and enable the camper to find fuel for his fire in some areas where trees are lacking.

The new park is now difficult to reach. Under the most favorable conditions, after traveling from Seattle by way of Skagway, Whitehorse, and the Yukon and Tanana Rivers, one can start on the trail by pack train two weeks out from Seattle, and, with good luck, can cover the necessary 80 miles of trail to the edge of the park in five days more. By way of Cook Inlet the trip would take equally long and would require a greater number of days of travel by pack train. Either of these routes demands a long trip and elaborate preparation for the pack-train journey and involves an expenditure too great for any but the man of means. Even for a small party with modest equipment—a half dozen horses and the requisite number of camp hands—a trip from Seattle for a month in the park would now cost between $2,000 and $3,000. On the completion of the new Government railroad, now under construction, the park will immediately become accessible. The railroad line runs within 15 miles of the east park line. On leaving Seattle one can then plan to reach Seward or Anchorage within a week, spend a single day on the railroad to the park station, and in another day or two, by saddle horse, penetrate well into the park and into the midst of its game herds.

From the railroad a main artery of travel through the park will surely extend westward beyond the foot of Muldrow Glacier to a point from which the view of Mount McKinley and its associated peaks is unobstructed. A study of the drainage map and the fact that most of the park lies in rugged mountains might suggest that such a route, across all the larger streams and the intervening ridges, would offer great difficulties to the road builder. Our surveys this last summer show, however, that nature has obviated these difficulties in a truly remarkable way. Beginning near Nenana River, a series of low mountain passes, lying in a nearly straight line, extends through the mountains all the way to Mount McKinley. There are nine of these passes each leading from one north-south valley through a mountain ridge to the next basin. The ranges between the streams are high and rugged, but by following this natural route one may pass from valley to valley with intervening climbs of only 250 to 1,000 feet and by gentle gradients. No man-made trails are to be found in this uninhabited region, but the caribou and moose have for ages followed these obvious gateways from one feeding ground to another and have made deeply worn game trails which make travel through them easy. Furthermore, for much of the distance the route lies along the hard, gravelly stream flats and over the river terraces, with safe and agreeable footing for horses. A wagon or automobile road could

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thus be constructed from the railroad to the foot of McKinley at comparatively small cost. The solid gravel bars and benches afford a sound roadbed, and over considerable stretches the surface is now in such condition that little or no grading will be necessary. Timber is sparse or entirely lacking, so that little cutting will be required. The passes offer favorable grades and low climbs to the road builder, and at certain crossing places all the streams can be forded by horse or automobile except at periods of unusually high water. For our pack trains we found, ready made, a splendid route straight through the eastern half of the park. With a completed wagon road built from the railway it should be an easy half day's journey of 80 miles by automobile from the railroad to the center of the park, the whole route traversing mountains of wonderful scenic beauty and teeming with big game.

At the western terminus of the wagon road there will some day be a hotel for the accommodation of tourists and mountain climbers. There, below the terminus of Muldrow Glacier, in constant view of the mighty snow-clad monarchs to the south, one will be able to find complete rest in the grandest of natural surroundings, or will have close at hand tasks of mountain climbing that will tax the resources of the sturdiest. Few regions offer the inducements to the mountaineer that can be found here. The highest point of Mount McKinley, the lord of the range, has been scaled but once, and only one route on that vast ice dome has been explored. Scarcely less credit will be given to other intrepid climbers who complete the exploration of this mountain than to the party that first reached the peak. For those to whom only first ascents offer sufficient lure there still remain great numbers of unscaled and even unnamed peaks of the first magnitude. Mount Foraker, only less majestic than McKinley and 17,000 feet in elevation, is still unconquered, and associated with Foraker and McKinley there are many peaks that rise from 4,000 to 8,000 feet above the line of perpetual snow. All this great group of noble mountains, until now so remote as to be impossible of attack except by elaborately prepared expeditions, will be easily accessible to even the modestly equipped explorer. This region is peculiar in that its grandest peaks lie close to the northern flank of the range. The main highway of travel through the park will pass within 20 or 30 miles of the highest mountains. Thus that bugbear of the climber in so many regions—the task of getting within striking distance of his chosen peak—is here a matter of no great difficulty.

So much for the park itself, its marvelous advantages as a national reserve, its unequaled scenic beauty, and its abundance of big game. I have tried to tell something of what is there for the

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people of the United States, to be had merely for the taking. The question may be asked, "How necessary is it that this park should be reserved immediately, rather than at some indefinite date in the future? Is there any danger that the park will not keep, even if not reserved?" The answer is plain and admits of no argument. The scenery will keep indefinitely, but the game will not, and it must be protected soon or it will have been destroyed. The Government railroad from Seward, on the coast, to Fairbanks, in the interior, will be completed in three or four years. The abundance of game in the Mount McKinley region may be attributed to the naturally favorable conditions existing there and the remoteness of the region from large settlements. Let me repeat that already the market hunters have depleted the game on the nearer mountains and now journey to this country every winter to obtain meat for the people of Fairbanks. They have already made inroads on the abundant supply of game in parts of this area, and the effects of their slaughter will be cumulative even if they can find no other market. With the extension of railroad travel to a point only 15 miles from the park lines, however, the beginning of the end for the big game herds will be in sight.

The agricultural possibilities of the fertile valleys in this region will bring to it great numbers of settlers, all of whom will need meat. The development of mines in the great Nenana coal fields will establish an industrial center and a good market for game within a day's walk of the proposed park. Big game hunters in all parts of the world only await the day when the railroad shall have placed this great hunting ground within their easy reach. Unless the park is established it will not be five years after the first train passes along Nenana Valley before the district will have lost a great part of its value as a game refuge in which the people can study the great droves of sheep and caribou in their undisturbed, natural environment. The flocks of sheep will be greatly thinned, and the survivors, frightened and suspicious of man, will have retreated to rugged and inaccessible crags where few will care to follow them. And the caribou, now unafraid and frankly curious of man, will hurry out of sight at the first hint of the presence of his archenemy. If this area is to be made a park, why postpone action until it is too late? Never was there a more obvious necessity for an imperative "Do it now."

Considered as a purely business measure, without taking account of the æsthetic value of such a permanent national reserve in its influence on the development of the American people, the Mount McKinley National Park will be a tremendous financial asset to the Territory of Alaska and to the United States as a whole. Prodigal as nature has been in endowing us with unrivaled scenery, we have

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until recent years been blind to the money value of this resource. Other nations not so blessed with fertile soils, vast forests, and mines of almost fabulous value have widely advertised their natural beauties in a way to attract the tourist, so that for years American travelers have spent abroad millions of dollars that might have yielded them no less pleasure if they had spent it in seeing America first. The good roads, well-equipped hotels, and beautiful mountains of the Swiss and Italian Alps attract the traveler like a magnet. Even our nearer neighbor on the North, by judicious advertising and careful attention to the comfort of the traveler, attracts great numbers of our people to her western mountains. If the United States wishes to share in the profits of the tourist business it may readily do so, for any well-chosen expenditure made in building good roads and hotels in our national parks will return large dividends, not only in dollars and cents, but in the health, enjoyment, and education of our people. And the traveling public will soon learn that one of the grandest of our parks, one of those most worth visiting, is that which, let us hope, is soon to be established in the Mount McKinley region.

If I were asked to plan a trip for a friend who wished to learn at first hand in a vacation of a few weeks as much as possible about our Alaskan possessions I would not hesitate to suggest the following route, assuming that the new Government railroad had been completed and the new national park established and made available for tourists by the construction of the necessary roads and hotels. Starting at one of the cities on Puget Sound the traveler will go by ocean steamship northwestward along the smooth and matchless "Inside Passage" to Skagway, stopping on the way to see the thriving town of Ketchikan, the totem poles and native houses at Wrangell and Old Kasaan, the picturesque village of Sitka, and the wonderful mines at Juneau and on Douglas Island. From Skagway to Whitehorse an eight-hour trip by rail takes the traveler across the summit of the coastal mountains to the head of river navigation in the Yukon Basin. There comfortable river steamers start on the 1,360-mile trip to Nenana, down Lewes and Yukon Rivers, in the Canadian northwest, past Dawson, the scene of the famous Klondike gold rush, and through the frontier settlements of Circle, Eagle, Fort Yukon, and Rampart.

At the town of Tanana the route leaves the Yukon to ascend its largest tributary, the Tanana, to Nenana, where the new railroad will cross Nenana River on its way to Fairbanks. A side trip, either by rail or river, to Fairbanks, the center of a great gold-mining industry, will well repay the traveler. From Fairbanks or Nenana only a short railroad journey will be necessary to reach the Mount McKinley National Park, where the traveler may profitably spend

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as much time as he can spare. On leaving the park he takes the railroad through Broad Pass and down Chulitna and Susitna Rivers to Cook Inlet, a route always within sight of snow-clad mountain ranges and passing through an area of great agricultural promise. On arriving at Anchorage, on Cook Inlet, he has another choice of routes. He may go either by water down the inlet or by rail through the Kenai Mountains to Seward, there to take ship along the coast and through Prince William Sound, with stops at Valdez and Cordova, past the wonderful glaciers and peaks of the coastal range and within sight of Mount St. Elias and Mount Fairweather, to sail again into the smooth waters of the "Inside Passage" at Icy Straits and return over the outgoing route to Seattle or Tacoma. Can you think of any more delightful way in which to spend your summer vacation?

FRIDAY, JANUARY 5, MORNING SESSION.

THE QUESTION BOX.

The Friday morning session was convened at 9.30 o'clock, with Hon. Stephen P. Mather, Assistant to the Secretary of the Interior, presiding.

THE PRESIDING OFFICER, Mr. MATHER.

I see we have not a very large attendance this morning, possibly due to weather conditions, and of course this morning the talks are to be more or less of a desultory nature. A number of interesting questions have come in, answers to which I shall probably call for from a number who are particularly posted on the various points that have been raised.

I see a question here in regard to the Glacier National Park—"When will the west side of the Glacier National Park be opened up?" I presume that question is an outcome of the fact that most of the development has been on the east side. All the great development by the Great Northern Railroad has been upon the east side of the park. All the St. Mary Lake country, Lake McDermott, Two Medicine Lake, and the interesting points that can be reached from those lakes have been pretty fairly developed. Probably the best of the whole system has been worked out on the east side.

At the same time there is a wonderful possibility on the west side of Glacier Park. Lake McDonald lies just a few miles from Belton, which is the western gateway of the park, and our own administrative village is on the shores of Lake McDonald. Lake McDonald is a very beautiful body of water, some 10 miles long, and is at the present time very accessible. The Government has a good road

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for a short distance from Belton to the foot of the lake, and there motor boats take the passengers to the upper end of the lake, where the hotel is located, a very comfortable hostelry from which trips can be made over to the east side by way of the Sperry Glacier and Gunsight Pass or by way of McDonald Valley and Swiftcurrent Pass.

But that does not begin to touch the real west side of Glacier Park. Bowman Lake, Kintla Lake, and a number of other beautiful lakes are located in the northwest section of the park, and all of them are practically inaccessible at the present time. We have a number of plans in the department to make at least a beginning on the west. One of the first steps in that direction is to have a suitable bridge across the Flathead River, just opposite Belton, and then to move our administrative village down to the point just across the river from Belton. We have had some interesting plans prepared for this village—the administrative building, the supervisor's residence and the other necessary structures, as well as an attractive entrance gateway.

One trouble in connection with the immediate development at the entrance has been the fact that the land has been almost entirely in private holdings; but we have assurances of receiving some 320 acres of the land that lies directly on the park side of the river, besides a strip of the timber along the road that follows this strip of land, so that the Government will come into control practically of all the land between the Flathead River and the foot of Lake McDonald. With that as an opening step, if Congress thinks it advisable to give us the funds for this administrative village and the construction of the bridge, I think we will have the beginning of a very interesting development on that side of Glacier Park.

To show the interest that is being taken by the local communities, I would say that the county commissioners of that particular county have contributed $10,000 toward the construction of the bridge, and the citizens of Kalispell have contributed another $5,000; so that Congress, when it comes to consider the appropriations for Glacier Park, at least will see that the local people are willing to back up their sentimental interests with dollars and cents.

We have a plan to construct a road along the shore of Lake McDonald to the upper end of the lake that should be the beginning of a road ultimately up to the northern end of the park and to the international boundary line, which should put us in touch directly with the Canadian national park which is located just opposite the Glacier Park. It would thus be the means of opening up a very large portion of Glacier Park. I feel sure it will come later on. We are bound to have that interesting country on the west side opened up.

I find a question here as to whether we could not have a national park near Washington. Mr. Quick touched on that to a moderate

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extent the other day, and I noticed that it met with an immediate response. There is a gentleman here with us who has thought considerably upon the possibility of a national park near Washington; possibly not in the section that Mr. Quick referred to, between Baltimore and Washington, for I think his ideas are in connection with a park up the Potomac River. I am going to ask Mr. A. B. Casselman, of the city of Washington, to say something to us from his standpoint.

MR. AMOS B. CASSELMAN.

The Government of the United States for some years past has been planning to develop the water power of the Great Falls of the Potomac, and in connection therewith to provide increase in the water supply of the city; coupling together these two projects, of water supply and water power; and it is recognized that some plan for the purpose must be adopted before many years. Development of water power, for the use of the city, and Government, is not an urgent or immediate necessity, and might be long postponed, or dispensed with. But increase in the water supply of the city will become necessary in the near future. So, it is evident that the present is a proper time to consider the subject as one of deep interest to the people of this city, and especially in its relation to the subject of park extension, for the National Capital, for it has an obvious relation to that subject.

A few years ago I gave some study to questions that have some relation to this subject—questions arising from the act of retrocession of 1846, by which the United States gave back to Virginia the whole of Alexandria County; and the feasibility of regaining some part of that territory to the United States, or embracing it in a riverside park, and heretofore I have made the suggestion that in connection with this necessary work that is being planned by the Government there ought to be created a national riverside park, extending from this city to the Great Falls, and embracing both banks of the Potomac; and no doubt all will agree that such a park is much to be desired; especially in view of the Government's interests and property rights, in this region, as part owner of the Great Falls, owner of the Conduit Road, leading from this city to the Great Falls, and the recognized necessity of acquiring additional riverside territory in connection with the proposed water power development.

There are many reasons that might be urged in favor of such a park—reasons unnecessary to elaborate at length. President Taft at one time sought to secure legislation that would restore to the District of Columbia some part of Alexandria County. He gave that up; but in his annual message to Congress, in 1910, he recom-

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mended creating a palisades park on the Virginia side of the Potomac, extending from the railroad bridge to the county line at the Little Falls. Ambassador Bryce also, in a notable address on the subject of Washington City, made some suggestions, and among others that there ought to be a roadway along the crest of the Virginia hills that border and overlook the Potomac, with steps for the preservation of the forest growth that covers these neighboring hills. My suggestion goes further than the recommendation of President Taft. If there is to be a park on the riverside it ought not to stop at the Little Falls. It ought to be a national park, extending to the Great Falls and including territory on both sides of the river.

The river region from this city to the Great Falls is one of unusual scenic features which make it peculiarly suited to become a great natural park, located as it is in such proximity to the National Capital. It would be difficult to find a counterpart for this picturesque region. There is nothing like it in proximity to any other great American city. Ambassador Bryce, in his address, said: "No European city has so noble a cataract in its vicinity as the Great Falls of the Potomac," and that it "would be almost an ingratitude to Providence and to history and to the men who planted the city here if you did not use the advantages that you here enjoy." And since the Government in the near future will be compelled to enter upon some plan of developing the water power or water supply of the river, at great expense, an expense of $15,000,000, according to the estimates of the engineers, it ought to include in its plans the preservation of the scenic features of this picturesque region and create here at the Capital a national riverside park.

The latest plan of the engineers provides for a lake above the city, to be created by the construction of a high dam at the Little Falls, the lake thus created extending a distance of 9 or 10 miles to the foot of the Great Falls, and submerging an area of about 3,000 acres, to be acquired by the Government at an estimated cost of $1,500,000.

The Government is not committed to the plan for a lake or to any of the several plans that have been suggested. Opinions may differ as to the advisability of the plan for a great artificial lake and dam just above the city. But whatever plan may be adopted it should include provision for the preservation of the scenic features of that region and its inclusion in the parking system of the Capital.

In any plan for a park at the Great Falls, a necessary feature would be a bridge spanning the river at that point. There ought to be a bridge there in any event, to accommodate the many visitors and sight-seers who are attracted to the place by its scenic and historic character. There are electric railroads from this city to the

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Falls, on both sides of the river. But there is no means of crossing except in a rowboat, when the stage of the water will permit of that method of crossing. If there were a bridge at the falls connecting with the Conduit Road on this side, and the Leesburg Pike on the opposite side of the river, the route from this city soon would become a popular and famous driveway for automobiles; every automobile tourist, visiting the city from distant points, would include the Great Falls as one of the points of interest to be visited. The bridge and connecting boulevards would bring the falls into closer relations with this city, as well as with Mount Vernon with which it is united in historic association. The great man who lies buried at Mount Vernon is associated in history with the Great Falls, by his having engineered the cutting of the canals around the Great and Little Falls, the first canals ever dug in the United States. They give to the place an historic interest. Gen. Washington, I believe, manifested a deeper interest in this project to circumnavigate the falls by means of a canal, and thus make the upper Potomac an important waterway than in any other civic enterprise, except only the location and planning of the National Capital.

The plans of the engineers for developing water power have in view only a practical commercial object. It is no part of their plans to provide for a park in connection with the power development. That is beyond the scope of their instructions. Whether there is to be a great riverside national park, as a feature of this proposed development, will depend on the degree of public interest manifested. For if there is a lack of public interest or of public desire for such a park it can not be expected that Congress will originate measures and make the large appropriations necessary for the purpose.

Some of the great parks of this country owe their existence to private initiative and private philanthropy. Many instances could be cited. Shaw's Garden at St. Louis, one of the beautiful parks of that city, is, I believe, the gift of a gentleman whose name it bears. A great and beautiful park within the city of Cleveland is the gift of Mr. Rockefeller. In the New York Times of January 7 it is stated that John D. Rockefeller, jr., will soon present to New York City a tract of 57 acres within that city to form a part of the second largest park in the city, and for which he paid $5,000,000.

A recent and notable instance of a great park created in part by private philanthropy in cooperation with the State is that of the Interstate Palisades Park on the Hudson above New York City, embracing territory in the two States of New York and New Jersey. Many unsuccessful efforts had been made to secure cooperative action and legislation by the two States to create a riverside park that would preserve the palisades that were being defaced by the opera-

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tion of the quarries. But it required private initiative and private philanthropy to inaugurate a successful movement for the purpose. Pierpont Morgan was the first to make a donation of $125,000, afterwards increasing it to $500,000, for the purpose. It was proposed, finally, that the wealthy men and women interested should raise a fund of $2,500,000, on condition that the State of New York should appropriate a like sum and the State of New Jersey a proportionate sum for the purpose, and this was done. Mrs. Harriman contributed a million dollars and 10,000 acres of land, Mr. Rockefeller $500,000, and a number of others $50,000 each, including Mrs. Russell Sage, Mr. Munsey, Mr. George W. Perkins, and others. The creation of such a park was of course the work of several years. A joint park commission was created by the two States in 1900, and the park was formally opened to the public nine years later—in 1909.

In an editorial in the New York Sun, just before the late election, urging an affirmative vote on a proposed appropriation of $10,000,000 for park purposes in the State, allusion is made especially to the Palisades Park and its great benefits to the people of New York. In this editorial it is stated that during the summer of 1916, a million and half persons visited the park, and that at once place 5,000 boy scouts enjoyed the camping privileges of the park.

It will be seen readily why I allude especially to this Palisades Park, on the Hudson, and to the methods that were adopted as necessary to secure it, by enlisting the aid and support of wealthy philanthropists of New York and New Jersey.

It is because the conditions here, not very unlike those at New York, invite similar methods and similar appeals to philanthropy to secure a national riverside park here on the Potomac, embracing territory in the neighboring States of Virginia and Maryland, embracing the rare scenery of the Great Falls; a park that in the years to come, when fully developed, will add to the fame and beauty of the parking system of the capital.

In recent years there has developed a growing interest in Washington City as a beautiful capital and a desire and purpose to make it one of the most beautiful in the world; and this interest is not merely local. It is felt and manifested throughout the country and finds expression almost daily on the part of citizens and societies representing all sections of the country; and there is no reason to doubt that the methods that were adopted, and that enlisted the support of wealthy philanthropists in securing the Palisades Park at New York could be adopted here with equal success. What was accomplished there in a large way could be repeated here in a smaller way, for no great or large philanthropy would be necessary for the purpose here—nothing like the great amount secured at New York.

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One specific suggestion I have made is that funds might be contributed to put a bridge at the Great Falls. That would seem an appropriate and effective means of inaugurating a movement for the purpose. A bridge there, with connecting boulevards and driveways and bridle paths would reveal and familiarize and make accessible many of the hidden beauties of that picturesque region that are now virtually inaccessible. I make this suggestion only because as a comparatively small philanthropy it would seem the most appropriate means of centering and crystallizing popular and official sentiment in favor of a park.

The suggestion for philanthropic initiative to secure a national park here at the capital is made because it is evident that a successful movement for the purpose can not be inaugurated in any other way.

The purpose of the Government some day, in some way, to develop the water power of the river has been under discussion, intermittently, for many years. As long ago as 1898 a Senate committee recommended the immediate acquisition of the sole ownership of the Great Falls. Ten years later, in 1908, plans of development were suggested by the officials under instructions of the District Commissioners. In 1913 Congress directed surveys and a report which were made by Col. Langfitt, who recommended the plans already referred to, for a high dam and lake above the Little Falls. Within the past few months a board of Army engineers, designated by Secretary Baker, has given a qualified approval to the Langfitt plans, but recommended that the matter should be made the subject of further thorough study. So nothing has been decided, and the one thing that is clear is that the Government is not ready at this time to take any important action or adopt or commit itself to any definite plan of development.

And hence the conclusion that if there is to be any action in the near future toward securing a national park here, as suggested, it must be from individual effort on the part of the people who are interested in the welfare of the city, and not from any initiative that can be expected from the Government.

There are in this city, and elsewhere among those who are interested in its growth and development, social and financial leaders who, if they would consent to actively interest themselves in a movement for the purpose, could quickly secure the voluntary contribution of funds necessary; and with such initiative there is no doubt the Government would respond and cooperate and hasten its plans in the adoption of measures necessary for the purpose.

There is no better way, and perhaps no other way, to enlist the support of the Government and hasten its plans than through private philanthropy on the part of those who are capable of initiating a movement in that manner. There is a rare opportunity for a

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comparatively small philanthropy to inaugurate a great movement, one that will enlist both popular and governmental support and result in creating a great park for the Capital.

Summarizing briefly my suggestions, the main proposition, that there ought to be here a national riverside park embracing the beautiful and picturesque scenery of the Great Falls and the riverside, would seem to require no argument. To those who are familiar with this region it makes its own eloquent appeal.

So the question is not whether we should have such a park, but whether there is any feasible plan by which it can be secured. It can not be secured by waiting and relying on Congress to provide for it. The people of Washington have been waiting 25 years for the proposed memorial bridge, and must still wait no one knows how many years longer.

I do not say this in criticism of the Government or of Congress. Everyone knows how impossible it is for Congress to do all that its Members would like to do or feel ought to be done. Appropriations for urgent and necessary purposes and for improvements more or less necessary throughout the wide domain of the United States pile up and exceed the revenues, and it is said that at this time the Government is confronted or threatened with a deficit of $300,000,000, and I suppose Congress is studying to devise new methods of taxation to meet this deficit. Under these conditions it would be idle to ask or expect any large appropriation for a bridge or a park.

But there are some things that can be done by the people here without waiting on Congress. Put a bridge at the Great Falls, or inaugurate some other philanthropy designed to initiate a movement for a great national park and Congress will follow that lead, and by this means you can enlist the support of the Government. An association formed for the purpose, a Great Falls national park association, could do many things. It could cause surveys to be made with maps and illustrations showing the area and outlines of the territory available and suitable for the purpose. It could, I have no doubt, secure from Congress an appropriation of the small amount sufficient for such survey. It could, above all, insure united effort and enlist the support of all who are interested, which would mean all the people of Washington, and a great many elsewhere.

Aside from other considerations, the parking system of the capital ought to extend to the Virginia side of the river, opposite the city, and embrace territory in what was intended to be and was originally a part of the seat of Government. Incidentally, it is interesting to note that there is an area of at least five or six hundred acres of shallow river bed between this city and Alexandria, on the Virginia side, beyond the deep channel, that can be and probably at some future time will be reclaimed, filled in, and included in the parking system

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of the city. As part of the river bed, it belongs to the United States. A portion now between Analostan Island and the railroad bridge is being partitioned off by a wall that separates it from the deep channel and will be filled in and reclaimed from the river bed. A much larger area that can be thus reclaimed lies below the bridge, on the Virginia side.

The growth and transformation of this city since Alexandria County was given back to Virginia in 1846 have been marvelous and wholly beyond the conception of the men of that day. No doubt the developments of the next 70 years will be equally great—perhaps beyond what we of to-day could anticipate.

It will not be very many decades until the city will have a million population, when it will be too late to acquire territory for a river-side park or preserve the forest growth that now covers and beautifies these neighboring Virginia hills. The time to do that is now, when the Government is planning to acquire territory necessary for water-power purposes. Nor is there much time for delay, for that portion of Virginia immediately opposite the city is being built up and utilized rapidly for residential and other private uses. And if the people of this day have that regard which each generation should have for those who are to come after they will initiate measures that ultimately will secure for this capital a great park, national in character, embracing and preserving the rare natural scenery of the river-side and the Great Falls, a park for the recreation of the teeming millions of future generations, with boathouses and bridges and ferries, bridle paths and camping grounds, a park for the multitude worthy of a great capital.

Mr. Horace M. Albright, Assistant Attorney of the Department of the Interior, had assumed the chair.

THE PRESIDING OFFICER, MR. ALBRIGHT.

We will pass on to another question: "Can tourists reach the Waterwheel Falls in the Tuolumne Canyon?" I will ask Mr. W. B. Lewis, the supervisor of the Yosemite, to answer that question, if he is here. Mr. Lewis.

MR. W. B. LEWIS, SUPERVISOR OF THE YOSEMITE NATIONAL PARK.

Mr. Chairman, ladies, and gentlemen: I am glad this question has been asked, because one of the speakers—I have forgotten now just which one, but I believe he was Mr. Gleason—the other day made the remark that up to the present time it was impossible to reach the Waterwheel Falls of the Tuolumne River Canyon. That was true probably at the time Mr. Gleason was in the park and took those beautiful pictures, but during the past season we have built a trail

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some 4 miles in length from the White Cascades in the Tuolumne Canyon to the top of the Waterwheel Falls. Unfortunately, we ran out of funds and were unable to continue the trail down the canyon past the Waterwheel Falls to Return Creek, which marks the lower end of the long cascades of which the Waterwheel Falls form a part. This will undoubtedly be done in the near future.

As to the question in general of the Waterwheel Falls, I would like to add that among the possible developments in the Yosemite National Park is the construction of a trail through the entire Tuolumne Canyon. This will connect Soda Springs, Tenaya Lake, and the White Cascades through the entire Tuolumne Canyon with Hetch Hetchy. It will open up a part of the park which heretofore has been practically inaccessible.

The Tuolumne Canyon, I think, has been brought to the attention of the public more through the efforts of the Sierra Club than any other agency. In their many sojourns in the park they have noted the wonders of the canyon and have passed the news to the world. It is a canyon, as has already been said I believe by Mr. Gleason, from 4,000 to 5,000 feet in depth, with a width of 4 to 5 miles. In a sense it rivals the Grand Canyon of the Colorado. It, however, lacks the wonderful color of the canyon of the Colorado, but nevertheless presents a ruggedness that is almost incomparable in mountain scenery.

So the question is answered as to the accessibility of the Waterwheel Falls of the Tuolumne Canyon. They can be reached, and on horseback, and a very delightful trip it is. The falls are accessible either from Tenaya Lake or from the Soda Springs. In either case it is a distance of about 12 miles.

Just one or two words more regarding conditions in the Yosemite in general and its future prospects. I believe I can say with accuracy that the Yosemite this year is the only one of the large western national parks the travel to which has shown an increase over the previous year. In 1914 the travel to the Yosemite was between 15,000 and 16,000. In 1915 it reached 31,600. It was to the exposition at San Francisco that this great increase in travel was attributed. However, in 1916 the travel rose to a little over 33,000 people, an increase of nearly 2,000 over that of 1915.

Now, this is important because it shows that the popularity of the Yosemite is increasing and increasing in the minds of the local people. Nearly 15,000 of these people who came in during the season of 1916, in other words about 45 per cent of the total travel to the Yosemite, came in private automobiles—and those who have been in the Yosemite know something of what this means at the present time. Over 4,000 cars came in over roads that could not be called boulevards.

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The topography of the park necessarily divides it into two regions, the northern part and the southern part. The southern part includes the famous Yosemite Valley, which nearly everybody knows, and is accessible by the two main roads coming into the park, the Big Oak Flat Road and the Wanona Road, which reach altitudes of 7,200 feet and 6,300 feet respectively. These roads were at one time merely wagon trails, but they have been gradually improved to such an extent that automobiles can pass over them with comparative safety.

The northern part of the park is accessible from the Tioga Road, which was opened in the season of 1915. There also some money has been expended, and the road is passable. It is not particularly good, but the scenery, I think, fully warrants the trip. We hope in the coming year to have sufficient money to put on that road to make it more of an automobile road than it now is, and to make the trip even more enjoyable than it is at the present time. In about two years we expect to see a State highway into Yosemite, the extension of the road already under construction. From the San Joaquin Valley to Mariposa the road has been practically completed and will be extended within the next two years to connect with our road at El Portal. The highest point on this road outside of the park will be only 2,900 feet, thus giving to the park an all-year route, one on which snow will rarely fall.

I do not think I am overoptimistic in saying that we can expect, after the opening of that road, from fifteen to twenty thousand automobiles a year, which would mean from fifty to sixty thousand people a year from automobiles alone. It will put the Yosemite within about three or four hours of the San Joaquin Valley, and about eight hours by motor from San Francisco; so that the plans already in view—and we have every assurance that these propositions will be carried out—make the outlook for Yosemite very bright in the near future.

Another detail is the construction or rather reconstruction of the El Portal Road, which extends from the valley to El Portal, the terminus of the railroad, about a mile outside of the park. This road is now under construction, and some $30,000 is being spent on it this year. We are putting there a 20-foot highway with a maximum of 6 per cent grade. It is will be a very inviting road to automobiles. The Government is also building a power plant with a capacity of 2,000 kilowatts. This will furnish electricity for power, light, and heat to the various hotels and camps in the valley, as well as to the Government for its own work. As you all realize, accommodations are probably the primary thing in handling the visitors to any park. A hotel has already been constructed at Glacier Point of some 75 rooms, a beautiful hostelry which I am sure will attract the attention of everybody who comes to the Yosemite. On the floor of

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the valley the foundations are laid for a new hotel of about 125 rooms which will cost, furnished and complete, about $150,000.

So, as I say, the outlook for Yosemite seems bright. I thank you.

THE PRESIDING OFFICER, MR. ALBRIGHT.

Returning to the questions, the following has been submitted: "How can we best interest the East in the Far Western national parks?"

I do not know of anyone better qualified to discuss that question than Mr. Allen Chamberlain, of Boston. Mr. Chamberlain is one of the most devoted of our national parks friends. He has been for years interested in the parks, and has always been ready to lend a helping hand where he could. He has written about them; he has talked about them; and he is always thinking about them. I will introduce Mr. Allen Chamberlain to you. He has been here every day during the session. I do not know of anyone who has been more faithful in his attendance. And he is here this morning. Mr. Chamberlain, will you give us a few words, please?

MR. ALLEN CHAMBERLAIN.

Mr. Chairman, ladies and gentlemen, it will not take many words to answer that question so far as I am concerned. My answer, however, can not be expected to furnish a full solution of what is a very real problem. The easterner wants to see the national parks just as keenly as does the man from any other part of the country. But "money talks" in this as in so many other matters of general interest and importance. The cost factor is the kill-joy for the easterner who looks parkward. If I may indulge in a bit of free advertising, which, I believe, is supposed to be a feature of the science of "conventioneering," at least so far as that science is applicable to the conduct of delegates to conventions, I will suggest that those easterners who are really desirous of enjoying a trip to the national parks this summer, should get into contact with the Massachusetts Forestry Association, with which I am associated. That association is arranging a two months' public tour of the national parks, and of some of the national forests, that will be very comprehensive. A still more personal reference, and a closer application of that science of "conventioneering" would lead me to suggest that easterners read this week's Saturday issue of the Boston Evening Transcript, a whole page of which will be devoted to national parks, indicating a number of possible trips for independent touring. Thanks to the generosity of Mr. Mather and the National Park Service, that article will be illustrated by a number of extremely beautiful pictures for the entertainment and education of those who do not have time to

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read two or three columns of text. Here, then, are two ways in which one part of the East is doing its best to develop the touring traffic from that section to the national parks.

It should not be overlooked, however, that the East has some pretty good scenery of its own that can be reached without the extreme expenditure of cash which is necessary when we go across the continent. The New England States, for example, at the present time, are trying, through the agency of certain organizations, such as walking clubs and mountaineering and forestry societies, to organize and coordinate those bits of reserved scenery that the several States in that group possess to-day. Those public playgrounds amount to several thousand acres at the present time, including the nucleus of a growing national forest in the White Mountains, several State scenic reservations and State forests, scattered through Maine, New Hampshire, Vermont, Massachusetts, and Connecticut. The aim is to develop a trail system that will connect the major portions of those bits of reserved scenery and of economic forests, by a trail system that will lead, eventually, we trust, from the interstate park system of New Jersey and New York across the highlands of New England to Mount Katahdin in central Maine. It would begin in the Palisades of the Hudson, cross eastern New York by way of the Fishkill Mountains, lead through the highlands of northwestern Connecticut into the Taconic Range and the Berkshire Hills of Massachusetts, thence into Vermont, where it would join an existing trail, which runs for the better part of 300 miles (fully half of which has already been improved and marked), along the ridge of the Green Mountains to the Canadian border. In various parts of New Hampshire there are many miles of most attractive and well-marked trails, with camps attached, all constructed for the benefit of the tramping element of the touring public. New England is trying very hard to develop its own scenery, and in such a manner that it will be accessible to those who, for one reason or another, may not cross the continent to the national parks. To that extent one eastern section may be regarded as competing with the national parks for tourist travel. We admit that the national parks are bigger and finer, but we are not jealous of them. We are proud to think that the country has been wise enough to create them.

The factor of railroad rates is, of course, a controlling one with many, and if the national parks are to be seen in the future by a great number of people from the Eastern States, some arrangement must be made with the transportation companies for special rates. The prejudice of the public in favor of standard sleeping cars is sometimes difficult to understand. If people really want to see great things and are willing to go at some small sacrifice of luxury, though

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at no hardship, why will they not patronize the less expensive accommodations which are even now available? I believe that it is because they are not encouraged to use the economical facilities. When the transportation companies want to increase the summer travel to the national parks from the East they will stimulate an interest in tourist sleeping cars, with their somewhat reduced rates, and the possibility for provisioning one's self en route.

Other things which can be done to stimulate an interest in the East for the western national parks have been alluded to in earlier sessions of this conference, particularly by Mr. Yard in his plea for further funds to enable the Park Service to advertise the properties under its jurisdiction. Collections of the most seductive photographs have been organized by the Park Service and sent on a round of public libraries all over the country. I think, Mr. Chairman, that we ought to be persistent in that campaign of publicity, showing constantly from city to city, and not omitting smaller places, all these superb photographs which will help to advertise the parks. The publicity that the papers are bound to give to such exhibitions will help. The films which it is hoped the Government will be able to provide will also help tremendously. It might well be regarded as a duty that the Government owes to those who can not visit the parks to give them at least the enjoyment that comes through viewing these pictorial reproductions.

The East is much interested in the parks, although they are so very far away, and few of us can ever hope to get to them. But I am still earnestly in hopes that between the Government and the transportation companies we shall in the near future make it possible for a greater number to go there, through concessions in transportation charges. I have been surprised oftentimes, in the course of my own visits to the western parks, to note the really considerable number of easterners met upon the trails or on the railroads headed toward one or another of the parks. It seems to me that easterners have not been slow in showing their appreciation of the national parks. We hope that more of our people will visit the parks, that they may be inspired with enthusiasm, on going home, to help in developing the recreational possibilities of our competing scenery in the East.

THE PRESIDING OFFICER, MR. ALBRIGHT.

Mr. Chamberlain has answered the question very fully and completely, but I want to emphasize again that one who is helping us as much as anyone in the advertising of the parks through the newspapers is Mr. Chamberlain himself. We appreciate thoroughly all that he is doing.

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I have before me a question concerning the creation of a national park to include Pikes Peak, Colo. As that proposition, when it develops, will come to the Department of the Interior through Congress, I shall ask Hon. Charles B. Timberlake, Congressman from Colorado and member of the Public Lands Committee to speak on the subject.

Representative Charles B. Timberlake of Colorado.

THE PROPOSED PIKES PEAK NATIONAL PARK.

The proposal to create a Pikes Peak national park is merely a proposal to give governmental sanction to the popular verdict that the Pikes Peak region is "America's scenic playground." Pikes Peak is beyond doubt America's most famous mountain; its name is indelibly woven into romance, history, and development of the West, and for more than a century since its discovery in 1806 by Lieut. Zebulon Montgomery Pike it has stood as the "Sentinel of the Rockies"—nature's fitting monument to mark the meeting of mountain and plain.

Within a radius of a dozen miles of the summit of Pikes Peak is a greater variety of wonderful scenery, more easily accessible, than in any other equal area on the American continent. This statement, oft repeated, has never met with successful contradiction. Granite gorges, waterfalls, caves, curiously shaped rocks, mountain streams, sequestered glens, canyons, parks, and points of vantage that offer wonderful panoramic views are readily accessible to the sight-seer. Here nature has built on a massive scale. The majesty of the mountains, the glory of the canyons, the expanse of the vistas appeal even to the seasoned globe-trotter.

For nearly half a century the Pikes Peak region has been a point of pilgrimage for the tourist, the student, and the sight-seer. Now it is proposed that Pikes Peak and its environs be set aside as a national park. The tentative boundaries, as suggested by the Colorado Springs Chamber of Commerce, embrace an area of about 250 square miles, including most of the Rampart Range extending from a point about 10 miles south of the summit of Pikes Peak to a point some 20 miles north of the summit, with an average width of 8 to 10 miles. These boundaries are, however, subject to revision upon further study of the area involved.

Should the Pikes Peak national park be created, it would be the most easily reached and visited of all the national parks. Six trunk lines serve Colorado Springs, the metropolitan city of 35,000 population, which lies within 5 miles of the eastern boundary of the park as now outlined. The Pikes Peak Ocean-to-Ocean Highway traverses

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the proposed area, which is reached also by the Colorado-to-Gulf Highway, by an official branch of the National Old Trails, by the Midland Trail, and by good connections with the other main east-and-west and north-and-south routes. Within the last year there has been opened a splendid automobile road to the very summit of Pikes Peak—the world's highest highway. Between 150,000 and 200,000 tourists annually visit the Pikes Peak region; and the reports of the Forestry Service show that more than 400,000 passengers traveled by rail, motor, horseback, or afoot through or into the Pike National Forest this last year. It is a journey of 26 hours or less from Chicago or all intermediate territory to the foot of Pikes Peak; and only 50 hours from New York City, Galveston, New Orleans, or San Francisco. No existing national park can be reached as quickly or as easily; nor can the points of interest within any park be visited with as little inconvenience or expense as would be the case in the Pikes Peak national park.

This national park, if created, would be accessible the year round, excepting, of course, those portions at altitudes above timber line. The majority of present parks are open only during the summer months. The favorable geographic and climatic conditions make the Pikes Peak region especially desirable as a place for all-year residence; and throughout the mild winters the trails and roads into the proposed national park area are now in constant use.

In the park-to-park highway system, by which it is proposed to join together the national parks and more prominent national monuments, the Pikes Peak national park would become an important link. It would be the easternmost of all units, and as it is even now the hub of good roads and a center of tourist attractions, would in itself attract many to travel over the great circle route connecting the Nation's playgrounds.

The designation of the Pikes Peak national park would be particularly appropriate because the city of Colorado Springs is already doing, as a municipality, what the United States is doing nationally to preserve and protect for the benefit of the public the places of unusual scenic interest. Its park system is perhaps the most unique in the possession of any American municipality. It comprises 2,700 acres and includes the world-famous Garden of the Gods, North Cheyenne Canyon, Palmer Park, Monument Valley Park, with miles of roads and trails.

The Pikes Peak region is preeminently a locality of more than ordinary scenic value. It has been selected by the people of the United States as one of their favorite recreation places. It is, therefore, fitting that it should be included in the chain of national parks under the jurisdiction of the United States Government, for the use and enjoyment of the people of the United States.

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THE PRESIDING OFFICER, MR. ALBRIGHT.

Another proposition for a national park, one of great interest, is also the subject of a question and the man to enlighten us is Representative A. T. Smith, of Idaho, also a member of the House Committee on Public Lands.

ADDISON T. SMITH, REPRESENTATIVE FROM IDAHO.

PROPOSED SAWTOOTH NATIONAL PARK IN IDAHO.

Every argument which has been advanced in favor of the maintenance of existing national parks and the establishment of proposed parks applies with equal force to the proposed national park in central Idaho. There is no section in the entire Rocky Mountain or Pacific Coast States which possesses more magnificent mountain scenery and picturesque lakes. It is on almost a direct line of travel between the Yellowstone National Park and Portland to the northwest, and to San Francisco on the southwest, and although the roads leading into the locality of the proposed park are unimproved the fame of the scenic attractions have brought thousands of travelers by automobile and stage who are seeking the unusual in Nature's handiwork. With the improvement of the highways, the convenient location of hotels, camps, etc., the proposed park will become one of the most popular playgrounds in the entire West.

In all the vast section between the Yellowstone National Park and the Glacier National Park to the north, the Crater National Park to the west, and the Yosemite to the south there is no national park and there is no other section possessing the scenic attractions as the Sawtooth Mountains in Idaho.

A memorial unanimously adopted by the Idaho Legislature urging Congress to create this region into a national park well states numerous excellent arguments in support of the proposition which I will enumerate:

First. There are very few, if any, private holdings of property within the boundaries of the proposed park.

Second. The proposed park is continguous to a State game preserve embracing some 220,000 acres of land, which, combined, will constitute a game refuge of great value and importance to the State.

Third. The area proposed to be set aside and dedicated to park purposes, constitutes the most scenic section not only of the State of Idaho, but is without a rival in all of the intermountain West in the grandeur, magnificence, natural beauty, and extent of its mountain and lake scenery, having been discriminatingly described by scores of persons conversant with European scenery as the "Switzerland of America."

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Fourth. The picturesque lakes with their pine-clad borders, nestling at the bases of the jagged, snow-capped mountain peaks contain a rare species of fish known as "Red-fish," which give their name to the entire region, and are not to be found in any other part of the United States, and which can not well be afforded the adequate protection by the fish and game laws of the State which the rarity of the species justifies.

Fifth. The proposed park can be easily made accessible over excellent mountain roads and through a surpassingly beautiful mountain country, being within three hours' drive by automobile and less than a day's drive by stage from a railroad terminal.

Sixth. The permanent protection of the timber within the area which it is proposed to incorporate into a natural park is economically valuable to the State in that the proposed park area constitutes a portion of the watershed of those important rivers of the State, whose waters are required for the irrigation of large bodies of land, and the flow of which in undiminished volume is dependent largely upon the preservation of the forests in the vicinity of their sources.

Seventh. The creation of the park would assure the proper protection and preservation of the unusual flora and abundant fauna of the region and provide a national recreation ground not only for the present generation of Americans, but for future generations as well.

Eighth. The creation of the park will be of great value to the State of Idaho in serving to attract people from all parts of the country into her borders, and thus enable them to become conversant with the vast resources of the State.

The natural attractions of this section are well described by Miss Lena J. Shoup, of Salmon, Idaho, who has traveled extensively in this country and abroad, as follows:

How familiar we are with the advertisement, "See America first," and how few of us realize what there is to see in America. Often some of the most wonderful of all nature's landmarks are to be seen at our very door, and we travel to distant lands to see a bit that is much wider known but often proves far less enjoyable. I would modify that expression to "See Idaho first," for within her borders we have some of the finest and most beautiful scenery in the world. A delightful trip I want to mention is from Salmon City along the great Salmon River to the Wood River country. We left Salmon early in the morning of an October day after the frosts had tinted the cottonwood, the willows, and the quaking aspen to wonderful shades of red and gold. This coloring, with the deep green of the evergreen and the gray of the sage, gave an added charm to the beauties of the Salmon River.

The road follows the river for many miles, a splendid turbulent stream, so full of surprises, each turn of the road giving magnificent glimpses of mountain peaks, tumbling rapids or fantastic formations. The deep narrow canyons give one a feeling of great awe and we were all just a little bit more cheerful when we were over the narrow places, often only room for the road and river; the canyon walls, truly superb, rising hundreds of feet, gorgeous in their changing

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lights of shade and shadow, the drive continues across the fertile Pahsimarci Valley, through the pretty little town of Challis and Custer's prosperous ranches, the upper Salmon River, with its fine forests and rugged mountain roads full of beauty and interest.

The first glimpse of the magnificent Sawtooth Mountains is one never to be forgotten. A sharp turn in the road brings the first view—you see them as through a vista—this noble range so truly named and so stately with its sharp, snow-capped peaks. At the little village of Stanley one finds a warm welcome and after a refreshing rest we again start on our journey, a journey still of interest but so unlike our river trip. The arrival at Campers Park and Redfish Lakes again brings keen delight, for this is truly a glorious wonderland. The exquisite settling of the Redfish Lakes is quite beyond description, the great trees towering over these emerald ports and the lofty mountains forming a most fitting background of this art work of nature. A few hours more of driving brings us to the pass in the Sawtooth Range between Salmon River and Wood River, called Galena Summit. It seemed we saw worlds during our two days' drive; think what could be seen in a 10 days' outing there.

Bills have been introduced in three successive Congresses for the establishment of the proposed park which have been earnestly supported by commercial clubs and the women's clubs in the State, who recognize the advantages which will accrue to the State by reason of the establishment of a national park in this section. It is a singular fact that until in recent years the western States have not attempted to capitalize the scenic resources of the Rocky Mountain and Pacific coast country.

Canada, by reason of extensive advertising, has attracted thousands of tourists from the East to the West, and it is stated on good authority that 75 per cent of the people who visited the San Francisco and San Diego Exposition during the last two years were routed over the Canadian railroad systems either going or returning, this regardless of the fact that we have four transcontinental lines. It is easy to imagine the great amount of money spent by American tourists in traveling Canada which would have been spent in our own country had we spent a few dollars in publicity and acquainted the people with our wonderful scenic attractions, which, of course, are equal to those in Canada.

Prior to the European war it is estimated that Switzerland's annual revenue from tourists amounted to $150,000,000, France $600,000,000. and Italy $100,000,000, a large proportion of which was spent by Americans traveling abroad. The pine woods of Maine, it is estimated, bring to the people of that State over $40,000,000 annually, and the attractions in Florida and California enrich these States in an untold degree. Idaho, with her beautiful lakes and mountains, wonderful waterfalls, and delightful climate, will attract each succeeding year increasing numbers of tourists if we make the proper arrangements for their reception and comfort by the construction of good roads and hotels in the scenic portions of the State. While

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these people may come for pleasure, they will doubtless be impressed with the favorable opportunity for investments and home building and many of them conclude to become permanent residents and help to develop and build up the resources of the State.

THE PRESIDING OFFICER, MR. ALBRIGHT.

In Mr. Chamberlain's last sentences he mentioned competing scenery in the East. We have a man with us this morning who can tell us something about competing scenery in the North. He was to have spoken on the first day of the program, but owing to the exigencies of the war and the pressing duties that came upon him as well as all other officers of the Dominion Government, he was unable to get here; but he is here this morning, and I take great pleasure in introducing to you Mr. J. B. Harkin, commissioner of dominion parks of the department of interior of Canada.

J. B. HARKIN, IN CHARGE OF NATIONAL PARKS, DOMINION OF CANADA.

CANADIAN NATIONAL PARKS.

Mr. Chairman, ladies, and gentlemen, I really did not come here prepared to tell you of the competing scenery of the north. I think while nothing would give me more pleasure than telling you of what our scenery is, and why we think it is in its way, as yours is in a different way, in a class superior to all others, I would rather speak simply of the general question of national parks.

There is one thing I must say at the outset, and that is that I very much appreciate the action of your parks department in inviting me to attend this conference. I know, sir, from what I heard here yesterday and to-day and from what the program for to-morrow promises that I shall return to Ottawa with a fund of useful information and suggestions and ideas and, what is perhaps best of all, renewed inspiration with respect to the work we are all engaged in.

If there is one thing in regard to which I envy your parks organization more than another, it is in regard to the enthusiastic and very efficient help which you receive from various public-spirited organizations. I have in mind the American Civic association, the Women's Federation, and numerous others. I think you are also fortunate in regard to the class of men—Mr. Mather, for instance—who have thrown themselves into the work. Everything you do and everything the association behind you do, with respect to national parks in the United States, contributes and contributes materially to the momentum of the national parks' cause in Canada. It is with pleasure, sir, that I have an opportunity to bear testimony to this fact. Much has been done for your parks by your Secretary of the

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Interior. I believe, sir, that he was born in Canada, and therefore when I realize how much your parks' work does for us, I feel that Canada has not poorly repaid you when it gave you such a man for your Interior portfolio.

In Canada the parks organization at present deals with three varieties of parks; they are the scenic parks corresponding to your Yellowstone and Yosemite; animal parks, in which we preserve near extinct native animals, such as buffalo and antelope; and historic parks, located at points where events of critical importance in the life of the nation have transpired. Of course all our parks are maintained as wild-life sanctuaries, and possibly on this account we have been given to understand that the parks organization must take over the administration of the migratory-bird treaty and the administration of the wild life of the Northwest Territories.

The Northwest Territories extend from the northern boundary of the prairie Provinces as far toward the North Pole as Canadian authority extends. The eastern boundary is Hudson Bay and the western the Yukon Territory. That comprises an area of about a million and a half square miles of land—and some ice.

When I first received an invitation to this conference I was under the impression that it was to be of the same character as previous national-parks conferences; that is, that it was to be primarily a round-table conference for the discussion of ways and means; that the discussions would relate primarily to the practical work in the parks themselves. I received a program the day I left Ottawa. and then found that the conference had been planned on a very much larger scale. I came here expecting to discuss the practical business side of parks. I recognize that the detail of such a discussion would not be suitable for a conference of this kind. However, there is one detail of parks administration to which I want to refer in passing.

Probably one of the most serious problems we all have to deal with in connection with national parks is the protection of the parks from fire. In Canada we have taken certain steps in connection with this subject, which we, at all events, think have been a distinct advance. The first is the development of a portable gasoline engine. We went on the principle that the most effective means of dealing with fire is water. We figured that since cities no longer used water pails for extinguishing fires, we should take a pointer from that fact and develop a portable fire engine. We now have a portable fire engine, which can be taken to any part of the mountains on pack ponies—in fact, you can carry two engines on a pack pony—and which can be handled very readily by two men. In actual work it has demonstrated its success, and the engine is now being adopted—has been adopted already—by a number of associations of private

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timber owners throughout Canada. I mention this simply as a suggestion, because, so far as I know, it is the first occasion on which a mechanical fire-fighting outfit has been developed for forest-fire work.

There is one other feature of the fire work which I wish to mention and that is a campaign of education which has been carried out in connection with forest fire prevention. I mention it chiefly because I think the methods adopted can be readily and satisfactorily followed not only for fire education purposes but for many other public purposes as well. We recognized the necessity of a campaign of education with respect to forest fires because it is a fact that nearly all forest fires originate from human causes; and it is also a fact that the individual who starts them does so through ignorance or carelessness; he does not realize, for instance, that a match or a cigar butt carelessly thrown down in the forest, or a smoldering camp fire left behind, may result in a huge forest fire. To educate the public it was felt that the campaign must involve a huge and continuous circulation and that the media used must be such that they would keep the educational information constantly before the general public.

Being without an appropriation for a fire education campaign it was also recognized that the work must be carried on without any expenditure on the part of the Government. To meet these two conditions it was decided to endeavor to get manufacturers of articles in common and constant use to put fire warning notices on these articles or their receptacles.

The responses of the manufacturers were prompt and favorable and the result is that education in regard to forest fire protection is constantly going on in Canada and that it is not costing the country anything. We began our campaign with the match manufacturers. For several years practically every box of matches made in Canada has carried on it a fire warning notice. No one can take a match from a box without seeing this notice.

We later on also got the ammunition manufacturers to adopt a similar plan, the idea being that when people were hunting, using ammunition and shells, that that was the time they were most likely to cause fires. Now all the ammunition companies in all of their shell boxes insert special fire warning notices which are worded so as to appeal to the selfish interest of the hunter. It is made clear to him that if he starts a fire through carelessness or any other cause, there may not be any game for him to shoot. The campaign was extended in many other directions. The tent makers of Canada have put fire notices in all their tents. Even the telephone directories have them now. I mention this simply to illustrate what a tremendous circulation you can get at no cost, and how you can reach the

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very people who are most likely to require the information you have to give. It has proved very effective with us, and I think that in other matters of national importance a corresponding course might prove effective.

There is a point in connection with national parks which I would like to emphasize. At first sight your parks and our parks may appear to be competitors. In reality, I believe that all our parks are a benefit to yours and that yours are a benefit to ours. There may be an element of competition in so far as the railways are concerned. However, I think the railway men would be well advised if they took the view that I mention. I hold, sir, that every man who visits one national park, whether it is in Canada or the United States, will thereby get a taste for what national parks alone can give him and that he will never be satisfied till he has visited other parks. He may come to Banff this year. He will then want to visit Yellowstone next year.

I have read articles by some Americans who seemed to think it was a catastrophe that so many Americans annually visited Canadian parks. To me it seemed that they should in reality rejoice that so many Americans were getting a taste for national parks and, if you will pardon me for saying it, getting such a good start on the right line. They should rejoice that those Americans, by virtue of their trip, are sent home better men and women, physically, mentally, and morally; that our parks have contributed to the vitality and efficiency of your people. Personally, I rejoice to see the figures regarding visitors to your parks jump up, because I then feel perfectly certain that a considerable proportion of those people are going to visit our parks eventually.

I suppose, sir, from the discussions which I have heard here that one of the real purposes of this conference is to devise ways and means for increasing public interest in national parks and for increasing the number of visitors who annually go to national parks. You want increasing numbers to visit American parks. I want increasing numbers to visit Canadian parks. Why this desire? In the first place we all want to keep money at home; in the second we want to bring in foreign money. It is a perfectly legitimate ambition, but I think you all agree with me that this commercial side of parks is only of secondary importance. If it is not, then we should not have the parks run as governmental institutions, but should hand them over to the railroads, just as we do mining and lumbering and such.

But, sir, national parks are of much too great importance to hand over to any railroads. After all, they do concern the wealth and vitality of our people, and that in the end means the welfare of the nation. Therefore, it seems to me, that the nation alone should

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handle them. My reference to railway companies might suggest that our first missionary work should be with the railway people. At present I am afraid they concern themselves too much with the trippers, the people who travel out of curiosity, the people who travel largely in order that they may boast to their less fortunate friends that they have seen Banff, Mesa Verde, or the Yellowstone.

It is quite true we want to see these people visit the parks, but we are much more concerned in the rest of the people who do not get the sort of recreation parks afford. These people need the parks, but so far as millions of them are concerned parks to-day might as well have a Chinese wall around them. I think Mr. Chamberlain referred practically to the same point a few moments ago. It is all important that the national parks should be made available for all the people, and that is why our missionary work should be directed to convert the railroads. Personally, I am convinced that if the railroad people would look at this matter from a new standpoint they would not only be doing what I would call an act of higher patriotism, but in the end they would largely increase their own dividends.

Let me put it this way: Suppose that 500,000 people who do not now visit the parks went to your parks next summer. Is it not a fact that the renewed capacity, vitality, and energy that these people would derive by virtue of that visit would mean in the end a tremendous acquisition to the national power to produce. And, sir, if we increase the national power to produce we increase the business of the railway companies.

I have said we want increasing numbers of people to visit the parks. I sometimes think that we in parks work are really merchandisers. We have goods to offer that we want everyone to buy. But, unlike most purveyors of commodities, it doesn't matter how many customers we have, our stock is undiminished. We are like the two old people in the Greek fairy tale who entertained Jove and his son. No matter how much we give our guests, we still have just as much wine left in the pitcher. The dispensers of all our other natural resources are bound in the end, if they keep disposing of their commodities, to find themselves in the unfortunate position of that illustrious old lady, Mother Hubbard. But our cupboard never gets bare, and, like most merchants who have superior wares to sell, our customers are our best advertisers.

It is, I know, unnecessary to say anything to such a conference as this of the revenues which may be derived from tourist traffic, but I want to point out a peculiarity which distinguishes them from all other sources of revenue, and that is that there are no other taxes that people pay so gladly. And the interchange of travel between our two countries is bringing about a delightful international reciprocity, for the American tourists are helping to pay our taxes and the Canadians who go to your parks are helping to pay yours.

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Aside from all questions of revenue, are there any reasons why we should strive and strive constantly to attract more people to the national parks? I think that there are a great many, and to my mind the best possible reasons.

The first of these is the one you have embodied in the slogan, "See America first." In other words, know your own country before you seek to understand others. And in our national parks we have set aside the best our countries have to offer. They contain the masterpieces of nature in our respective countries. And I venture to say that the man who has seen the Grand Canyon of Colorado, the Valley of the Yosemite, or our Canadian Rockies, has a new realization of his country. His conceptions are broadened, his imagination enlarged, and he will sing "My country 'tis of thee" or "O, Canada" with a new and deeper patriotism.

However, the main reason why we want visitors in connection with parks is purely on account of recreation. After all, national parks are simply places of recreation in its broad sense. It needs no argument to convince anybody that the public recognize the need of recreation. We have only to look at the millions of dollars that the public are spending on recreation. They spend very much more on recreation than they do on the necessities of life. We have only to look at the theaters, the picture shows, the ball organizations, the seaside resorts, the golf clubs, and the thousand and one institutions that exist solely to provide recreation.

Now, in the national parks, we provide a form of recreation which we who are concerned in the work, at all events, believe is vastly superior to all other forms of recreation. Recreation, of course, is only a means to an end. It is, after all, nature's method of repairing the damage we all sustain in the struggle for existence. Life in the city is particularly hard on man. I once saw it put this way: "Life in the city squeezes the juice out of man like a lemon, and leaves nothing but the pulp." National parks exist to repair damages of this kind by providing means of recreation in the outdoors. Of course, all recreation in the outdoors is valuable in the matter of this repair work, but the best recreation of all is the recreation in the wilderness. I want to emphasize that word "wilderness," because to me it is the all essential point with respect to national parks. Other parks, city or suburban parks, all help the human unit in this matter of recreation but these parks are necessarily small, are largely artificial and are, in reality, as an American writer once described them, simply "first-aid" parks. You have to go to the wilderness park to get the real results.

Now the wilderness possesses something that is not to be found anywhere else and that can not be reproduced. Sir, you can not transplant the wilderness. We can transplant a strawberry plant.

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It will grow in our gardens but what of its fruit. It has lost that delightful tang which was its soul. Its spirit has fled back to the wilderness—its home.

In a certain sense we who live the life of cities are like the transplanted strawberry plant. As your own Lowell says: "Before man made us citizens, great nature made us men." There is something which has come down to us in our blood from our remote ancesters which is satisfied only by the wilderness—the home of our first mother—Mother Nature. There is no better example to explain what I mean than the grate fire. You know how we all love a grate fire. It is not for its warmth. We might easily get more warmth from a steam radiator. But we all take a peculiar delight in blazing logs or crackling coal. It seems to me that something in our blood associates that grate fire with the camp fires of our ancestors when they lived the life of health and vigor and freedom around their camp fires in the wilderness.

I am told that if you take one of your cultivated strawberries and transplant it back to the wilderness it will revert to type and regain that wonderful wild tang it had lost in the garden.

Well, sir, we can not go back to the wilderness to live. We are committed to civilization, but we can see that there shall always be a certain share of the wilderness reserved so that all our people can go back to it at times and regain there some of the vitality which the city has taken away from them. The soil of the city grows a wonderful crop of dollars, but it grows a poor and weedy crop of men. Well, we want to make it possible for everyone to rotate his crops. To grow some dollars in the city with all the rest the city has to offer, and then go back to the wilderness for a period and gather what might be called "coins of life." Because every mountain peak, every lake, the wild flowers, the air, and all the wondrous beauty of national parks are like the machinery of a mint turning out coins of life, representing health, vitality, clarity of mind, moral efficiency.

In this connection I want to read a paragraph written by an American writer, an American newspaper man, who had been in the habit of spending his holidays in the wilds of northern Canada. I read it simply to indicate what it means to a man to have gathered "coins of life" in the wilderness. The paragraph is:

> Canada—land of the sunshine and the snow, how big and beautiful you are. Surely the God of all the earth never made another country like you.
>
> When I die I hope it will be somewhere that they will have to carry me out from in the bottom of a canoe—and my last regret will be, not that I shall not see again those who are dear to me, because, please God, I shall see them again, but that nevermore, so far as I know, shall my eyes see the sweep of those dear northern hills and my senses be lulled to rest by the roar of the rapids and the incense of the balsam and the spruce.

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Mr. Chairman, I think you recognize that national parks are a much bigger question than a mere getting of tourist revenue or a mere matter of carrying passengers. In Canada we who are charged with parks matters believe they concern the very life of the nation. We claim it is our first duty to see that every person is given an opportunity to gather some of these "coins of life." At present one of the most important matters in connection with national parks, it seems to me, is the necessity of more and still more parks, not simply parks such as you have and we have located in the West, but parks everywhere, and particularly parks nearer the large cities.

Before I sit down I want to refer briefly to what the Canadian soldiers are doing in France. We in Canada take a very special pride in their accomplishments, and there seems reason to believe that to a considerable extent, at all events, the resourcefulness and courage and energy which they have shown on the battlefields of Europe have been due to the habits of the outdoor life which they lived in Canada. You all know that on the whole the people of Canada live the outdoor life.

In conclusion I would say this: We who are concerned in parks believe that the best and most important step in connection with preparedness—a matter which, I believe, has received more or less consideration in this country of late—is the building up of a strong and virile race. We are also equally convinced that national parks, and what national parks stand for properly developed, will contribute materially, and very materially, to this end. I thank you.

THE PRESIDING OFFICER, MR. ALBRIGHT.

Mr. Harkin's address has certainly been an inspiration to us. His office in Canada has always shown a disposition to cooperate with us, and I know that what he has said to-day is suggestive of an invitation to continue that cooperation. We are glad to have an opportunity to consult him, and he has at times taken occasion to consult us. We are going to work together, of course, for the development of American scenery throughout the continent.

I have a question which has just been handed to me by a lady in the audience. She asks, "Has any provision ever been made that would prevent the Government presenting a part of any national park to any city asking for the same for her individual uses, as Hetch Hetchy was given to San Francisco?"

Congress had the authority to give the Hetch Hetchy to San Francisco, and it still has the authority to grant similar privileges in other national parks. This authority is vested in Congress by virtue of its control over the public domain. The national parks, while withdrawn from the operation of practically all of the public

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land laws, are still, so far as Congress is concerned, a part of the public domain, and are subject to change in status at the will of Congress. As the powers over the public lands could only be eliminated by constitutional amendment, other grants of privileges in national parks similar to the Hetch Hetchy grant could only be made impossible by constitutional amendment.

I am going to return the presiding officership to Secretary Mather, who has come back from Congress.

(Whereupon Hon. Stephen T. Mather resumed the chair.)

THE PRESIDING OFFICER, MR. MATHER.

I find a question as to whether women would really make good guides in the national parks, as suggested by Mrs. Chalmers yesterday. I am going to ask Mr. Enos Mills to talk to that question, because he has made a study of the whole guide situation so thoroughly that I think a word from him on that subject would be very interesting.

MR. ENOS MILLS.

Mr. Chairman, ladies and gentlemen, I am very glad to say a few words concerning guiding in national parks, because it seems to me that the real success of the national parks depends on their having excellent guides. The national parks are, in addition to being magnificent recreation fields, magnificent outdoor schools. Hence, the part played by the guide will not be that of a football coach, but that of an instructor more than anything else. Well, now, if people want and need guides of an intelligent type in the parks, and I think that they do, what is the source of supply? Well, directly, there isn't any source of supply at the present. Wander as you will and where you will through the mountains of the West, through the national parks of the United States and Canada, and I think you would find very few guides who could qualify in the educational sense for the kind of guides now needed by a great many people who are going into national parks. Hence, for the present, or probably for a few years, the leading guides in national parks will, I think, have to come from the universities—college men who have taken field classes out. Now, that won't cover the full field of guiding, but I think it will be the main source. In my own experience I have had a well-known biologist come into the mountains and go out with people for a week or 10 days simply because there was not any guide who could give these people the information which they wanted about the objects of interest around them. Hence I had to import, as it were, a guide to do that sort of thing.

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There is no reason why ladies as well as gentlemen should not guide in the parks. As a matter of fact, they should. The profession of a guide in a national park largely is that of a philosopher and a friend and an instructor. Hence I do not see why a woman could not do this as well and in many cases even better than a man. The majority of school-teachers are ladies. As a guide is to become a teacher, I do not see why they could not teach in a park as well as in a schoolroom. So I think that in most cases the guides should have equality of opportunity among the women as well as among the men.

Take, for instance, in the field excursions of the Sierra Club, the Mountaineers' Club, or any other club. The women show themselves physically and mentally the equals of the men in almost every condition in which these people place themselves on these outing trips. So that, going further into that, let me repeat that the part of a guide is usually that of an educator, and hence I think we will for the present have to call on colleges and schools for many of the guides.

Well, now, if that is the standard we desire to set, then other guides in the parks will see what it is and will at once proceed to qualify themselves to do that sort of thing. The cost: If a teacher who is capable of guiding in a park can do summer school work, as it were, in a park he would be able to do that summer school work in addition to his other work and salary much cheaper than he would if he had to depend wholly upon guiding in the summer time. Well, now, price will cut a very prominent figure. If a poor family go into a park and want a guide and have to pay an exorbitant price for it, they simply will be compelled to do without.

This leads me up to another point in the same connection: I hope, Mr. Chairman, for the present that concessions for guiding in the national parks will be withheld in order to stimulate competition and interest among the guides, to set a higher standard among them. If you make a concession in a particular park and give it over to an individual or corporation, you would not, for instance, be able to get John Burroughs to give a part of his time guiding into a park because he would never for a moment think of passing into a concessioner to guide his friends or anyone else. And so on down the line. If the guide is any good at all, he will be an individual of marked individuality, and the necessity of having to work through a concession will tend to suppress this individuality and also his standard of guiding.

And then, if guiding be done through concessions, what will the guide do when he is not busy guiding? If he is attached to a concessioner, he will have to be employed at something when not employed as a guide. In other words, the concessioner will necessarily

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have to keep him busy. Will it be at something that will benefit him as a guide? Not necessarily; but if he is a guide, guiding individually under the supervisor of the parks, on days when not guiding, if his heart is in the work, he will spend his time getting better acquainted with the objects around him, or equipping himself mentally to do a higher degree of work. This, I think, he would not be likely to do if he were dependent on his position to the concessioner under whom he is working. So I think for two or three years until a standard in guiding is set and a number of excellent guides developed, it would be far better to keep the guiding in the national parks out of the concessions.

If this well-equipped individual were in a college or one of a college class he would like to spend his summer, say, in the Glacier National Park; and if he found he could spend part of his time guiding people, this might enable him to have a vacation in that park and spend the remainder of his time as a tourist. That would do something for himself and enable him to serve as a guide and at the same time keep down the price he would necessarily have to charge the people he guided. I hope I have stated myself clearly. Has anyone a question in this regard?

A DELEGATE.

Mr. Chairman, it seems to me this does suggest a question as to whether or not it would not be a wise administration to organize a university guiding camp, which would obtain a concession for guidance of parties through the parks and would be administered by a central bureau according to the needs of the park. No doubt many young men would enroll themselves under an organization such as Mr. Mills has suggested here, who would be entirely qualified to do the work and do it well; and, by a central bureau, it might be very effective and a real profession calling for the young undergraduates of all our universities. It seems to me it merely lacks organization.

MR. ENOS MILLS.

Well, Mr. Chairman, the point is well taken, but I think it should go further than that. A year or so ago it was suggested by a publication that a chair be established in a university for the development of guides. The point you make relates to a course for undergraduates. If guiding requires anything it requires a great deal of maturity. What we want is for young men and women to think of it as a life's work, not something temporary, not something to get them through school, because, if they are just freshmen or sophomores in college, there is every chance in the world they have not had experi-

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ence enough to be good guides in the national parks. They may be able to show people the way from some one place to another, or saddle a horse, but those things are incidental. People should have been trained in their work in the past for their life's work as a guide. Guiding is far more than waiting on hotels in the summer. We want to appeal to the best characters, the best brains of the country. So it should not be something for inexperienced people to be allowed to do.

Well now, as I said in that connection, I really believe there ought to be in some universities a chair for the development of guides, and that they should think of it as a life work. Before you realize it these national parks will be opened the year around, and if anyone wants to guide the year around there is no reason why he should not.

But guiding is something that is very intimate. If you go into the wilderness with a guide, you want an individual with whom you can be friendly and intimate. Hence, you will want to pick your own guide without going to a concessioner. So I think from every angle we ought to keep the guides on a plane of independence, so to speak, as nearly as we can. So let me repeat the statement that these parks before we realize it will be open the year around. There is no reason why we will not need guides the year around. So let the people in the guiding realm think of it as an occupation the year around, and prepare and develop themselves. I am sure there is already a need, a demand, for guides who are capable of going into the mountains and taking care of people while giving them information in natural history, and who want this all the year around. I believe I have covered the question. I thank you.

The PRESIDING OFFICER, Mr. MATHER.

There is no doubt that Mr. Mills has touched on a very interesting thought here concerning the guide question. Of course, we have to look at the practical end of it just as it meets us from year to year. A development of this kind would take time to develop, and necessarily be of slow growth. Of course, it is desirable that each group going out on horseback have a guide, and it would be a most interesting thing to have the type of man that Mr. Mills refers to for that guide; and I hope that that will be developed later on; but for the present it will be possible for the concessioner only to provide men who understand the trip thoroughly. Eventually these field trips and the study of nature are things that should be worked out independently. The clubs that go out now that Mr. Mills refers to—the Sierra Club, the Mountaineers, and others—have with them men who are interested in the country, who know it in a thorough way, who have made the trip before. But those men are entirely independent of the saddle-horse official.

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Take Rainier National Park for example. This summer a splendid cooperative camp was established by the people of Seattle, entirely distinct from the regular concession. It was worked out, of course, on a much more economical basis, because it was thoroughly cooperative; it meant that the little group that took charge of it gave freely of their time without cost in order to make it a success; and of course there were a number there who knew the mountains, who knew the parks, and could take up the guiding work as they did without any compensation.

Perhaps with such beginnings there would be an opportunity to develop the individual guide through first saturating him with love of the country itself.

I see a question here: "Were there any new discoveries in the Mesa Verde Park this year?" I think perhaps our supervisor for the Mesa Verde National Park, Mr. Rickner, may say a few words as to that, because I know we are all interested in the wonderful discoveries that have been going on from year to year in the Mesa Verde Park.

MR. THOMAS RICKNER, SUPERVISOR OF THE MESA VERDE NATIONAL PARK.

Mr. Chairman, ladies, and gentlemen, I might say we have recently made a number of discoveries in Mesa Verde National Park. We have entered some cliff houses never entered before by white men, and we got from them some rare specimens of pottery. We have them on exhibit now, and any visitors to the park can see them.

But we are handicapped in our park in different ways. In the first place we have just got an automobile road; in the second place few know anything about the park, but when I was in Denver a few days ago, on my way out here, I stopped and saw the traffic manager of the Rio Grande system, and he said before he quit advertising he was going to put a placard in every railroad office in the United States to inform the people how to reach the park.

Our park is different in scenery from anything I have seen elsewhere. Now the pictures shown here on the screen the other night show but few of our attractions. They were taken a number of years ago. There has been considerable development there in the way of scenery, in the way of cleaning out and excavating, in the way of discovery of more new ruins since those pictures were taken. The park is more attractive than the pictures show it to be a few years ago. If you take our park for the young people growing up, it is a park for study. There were people there who lived at a time when they had nothing to work with except two hands. Their tools

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were made of stone, and they built some fine buildings and fine structures, standing to-day, original work that is surprising to us of to-day. They were self-supporting too. Mesa Verde is a spot that every young person should visit.

I can not give a description of it to one who has not seen it, but I want to say that any person going there now will be well paid for the trip for two reasons: It is the most scenic route from the railroad station to the park, a distance of 32 miles, that I have traveled. It is nice, high, mountainous country. You can go in automobiles. From any point you can see a distance of 150 miles very distinctly. I can show you mountains in the distance. There are a number of features there that any person visiting the park will remember as long as he lives.

I would like to invite everybody who is here to come and visit Mesa Verde. I thank you for your attention.

THE PRESIDING OFFICER, MR. MATHER.

We will adjourn this morning's session now, but I want to call your attention to the splendid lectures that will be given this evening. They will be well worth attending. Mr. Hays is to speak on the Yellowstone, and Mr. Steel, the commissioner of the Crater Lake National Park, is to speak on Crater Lake. They will show most interesting pictures in connection with their lectures.

The series of lectures last night were attended by a crowded house, and I would recommend that you come here early in order to have a chance to hear and to see to good advantage.

Do not forget as you are going out to make a point of looking at the pictures that are shown on the second floor, the great canvases of national parks by leading artists; also the showing of photographs and etchings that are on either side of this corridor.

This afternoon motor travel to the parks will be the general subject of the discussion. It is to be taken up by a number of men who are experts in their lines. All those who are interested in the development of motor traffic to the parks should make a point of attending.

There is no question but that within a few years one of the great means of reaching the parks will be by auto from all parts of the country; the roads will be so perfected that reaching the parks will be comparatively easy.

(Whereupon the Friday morning session was adjourned at 12.10 o'clock.)

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FRIDAY, JANUARY 5, AFTERNOON SESSION.

SUBJECT, "MOTOR TRAVEL TO THE PARKS."

The Friday afternoon session was convened at 2.35 o'clock, with Robert Sterling Yard, of the Department of the Interior, introducing the presiding officer, Dr. H. M. Rowe, president of the American Automobile Association.

MR. YARD.

In many respects this is the most interesting day of the conference, because it is the day of the motor. These are swift times. The horse has passed. I do not say is passing—but has passed. We move fast; our national parks are all of them now, since Yellowstone was opened to the automobile, open to the motorist. Last summer's experience shows that the motor car will be an immense factor in the future development of our natioinal parks because it will be an increasing accelerator in their future patronage.

Last year's increase was large. Nevertheless, it is only the promise of what is to come, for with the movement for good roads all over this country, the great processions of automobiles to the West will be multiplied season by season and summer by summer. The time is coming when we shall have an enormous passage of automobiles back and forth from the eastern seaboard to the Pacific slope. And it is a prophecy which is not very far in the future when the passage into the park shall be through air as well as over the road.

One of the great attractions of the West is our national parks, and the motorist who travels from the East to the West will inevitably visit our national parks, and stay in our national parks. That is why I say the motor, the automobile, is one of the factors of the moment which makes it one of the most important elements in national parks considerations to-day.

Another thing. Motorists soon will go into our national parks to stay. Many of them to-day go sweeping through, seeing what they can along the line. But one of the most interesting features of the national parks' evolution as I saw it this last summer was the number, the large number, of motorists who went into our national parks to stay there, driving in, selecting camp grounds, camping out with the motors alongside under the trees. I saw many cars with trailers behind. I saw Fords in the Yellowstone that were so loaded up with tents and things around the seat that you could hardly see who was inside. That was a little glimpse of the future.

Now, to meet that future, we of the Department of the Interior are making every possible effort to increase the road facilities in the

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national parks. We are laying out new roads. We are improving the old roads. We are going just as fast as the men "on the hill" who make the appropriations for us will let us go, and we hope, as this demand becomes better known and Congress is more and more impressed with the need of it, that we shall get larger and larger appropriations for the development and improvement of the road systems inside the parks.

As for the roads to the national parks, those are out of our jurisdiction; but we have representatives of great national associations on this platform to-day whose special business it is to develop the roads from east to west. The day's session will be presided over by the president of the American Automobile Association, Dr. H. M. Rowe. I now present him.

THE PRESIDING OFFICER OF THE DAY, DR. H. M. ROWE.

Ladies and gentlemen, I suppose that I owe my invitation to preside at this meeting to the fact that for the moment I happen to be the president of the American Automobile Association, and I take it the invitation was intended as a courtesy to that association. As Mr. Yard has just said, this association is and has been for many years interested in the matter of good roads. That is one of its principal activities, not from a selfish standpoint or for the special benefit of only those who may be motorists, but for the larger purpose which is included in the convenient and economical use of the motor vehicle. The opportunity of entrance to the wonderful national parks and reservations which are controlled by the National Government has been one of our aspirations; and, naturally, we have been very much gratified in the activities of the Department of the Interior under Secretary Lane and his most able and competent assistant, Mr. Mather, in the provisions that have been made for the enjoyment of motorists and the public generally in using a vehicle that permits of access to these natural wonders in a way that is not provided by any other means.

But I am not going to talk myself this afternoon. A good presiding officer is a man who introduces the speakers, and who looks pleasant when the speakers are talking, and who, if they talk too long, has the ability to shut them off without anybody noticing it. That saves the other man and pleases the audience.

Now, on our program, as we find it to-day, we have a number of speakers, and I might say with regard to the first speaker, that the American Automobile Association has been particularly fortunate in securing for the chairman of its good roads board a gentleman of more than ordinary intelligence, and one that under ordinary conditions it would be very difficult to secure. I might say to you,

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those of you who are not familiar with the workings of the "Three A's," as we speak of it, that it is a voluntary organization that attracts to its interests and its service those who are willing to make sacrifices for the good of the association and for the advancement of its purposes. In our good roads board we have one who has been a county engineer of one of the largest counties of New York State for a period of some 16 years. We can't get rid of him; and I have been told that on a couple of occasions he might have been State highway commissioner of that big State, which was the first State, by the way, to obtain a really comprehensive system of roads. This gentleman whom I am about to introduce is the despair of stenographers, because he talks, as you will find out in a moment, between sentences. He is a rapid-fire orator. Last summer at the meeting in the Yellowstone National Park Mr. Diehl was prevailed upon to represent the association, and Mr. Mather has told me that he talked faster and said more things in a short space of time than any man with whom he had ever come in contact; and I understand that Mr. Mather has had years enough experience in meeting and hearing speakers, both rapid and slow, to be a good judge of their speaking proclivities. I have very great pleasure in introducing Mr. George C. Diehl, of Buffalo, chairman of the American Automobile Association good roads board, whose subject is "Touring, a by-product of roads building; or roads building, a by-product of touring."

Mr. George C. Diehl, of Buffalo, N. Y., Chairman of the American Automobile Association Good Roads Board.

Touring, a by-product of roads building; or roads building, a by-product of touring.

Mr. Chairman, ladies and gentlemen, as the chairman who is presiding is a much larger man than I am and as he is president of the association in which I occupy a very subordinate position there is no danger of his having the opportunity of asking me to sit down because I talk too long. The flattery that was included in his introduction is merely the rhetorical license which is granted to a presiding officer.

Touring is the motorist's chief delight. Good roads, next to a good disposition, is the main requisite.

Whether the motorist, through his good roads propaganda, brought about improved highways or the commercial necessities, through roads development, set the stage for automobiling is immaterial.

The motorist is for good roads and is usually sufficiently diplomatic and tactful in that he supports the officials who are giving

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their best efforts to furnish the most generally used of all transportation facilities—the public highways.

Our answer to the question asked in the title to these disconnected remarks has been given many time to many similar inquiries. It is "We do not care so long as we get the roads."

The satisfaction of their use impels us to place the credit for their building elsewhere, so we say "Touring is a by-product of road building"; but expand the road building program, build roads more rapidly, better, and above all build first those main highways which must form the backbone of a properly connected system of national highways.

Not one person in a thousand on the Atlantic seaboard knows much of the scenic grandeur of our national parks or the unsurpassed natural resources of our own land.

Every one should read the April, 1916, copy of the National Geographic Magazine. This volume should be in every American home. One hundred pages of prose and picture take us from New England, across the Alleganies, over the Great Lakes, past the imperial Mississippi Valley, through national parks, up the slopes of the snow-clad Rockies, to the shores of the Pacific.

America is the most powerful commercial nation on earth, but have we not sacrificed too much to the material?

> One impulse of the vernal wood
> May teach you more of man
> Of morals, evil and of good
> Than all the sages can.

The motorists whom I have the honor to represent appreciate in a small way, at least, the value of our national parks. Every influence that we can wield is being exerted to connect those wondrous places with good roads and, in turn, to link up this system with the Middle West, the East, and the sunny Southland.

Road building in this country did not receive a real impetus until the policy of State aid was adopted. New Jersey was the first to pass a State-aid statute, in 1893, quickly followed by Massachusetts, Connecticut, and New York.

The same principle underlies State aid and Federal aid to road building, namely, the distribution of expense between rural and urban communities, both of which benefit therefrom.

The business or commercial roads were the first built by these different States, and their construction had been in progress 10 years before the automobile appeared upon the scene. For the next five years practically all of the automobiling was done over what might be called the commercial roads. It was then ascertained that the touring roads had a commercial as well as an æsthetic value, and the shrewd New Englanders began to make accessible, through im-

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proved highways, the Green Mountains, White Mountains, and the wonderfully indented coast of Maine, with the result that these spots have become the playground of the Nation.

In the last five years in the State of New York especial attention has been given to the connecting up of the various highways, with the consequence that there are now three continuous improved roads across the State; and the mountainous region in the northeast, the Hudson River country, the famous finger lake section in the center, and the beautiful mountain scenes of the southern tier have been made available for motorists.

In 1915 it was estimated that 150,000 motorists from other States toured in New York and that $15,000,000 was left by them in the "Empire State." In 1916 these figures were increased to 250,000 visiting motorists and $25,000,000. As the total cost of the main highway system in New York State up to date is but $75,000,000, it will be seen that one-third of the entire cost was left in a single season by out-of-State motorists.

When we consider that in the United States there are now 3,000,000 motor vehicles, and that road building is being carried on at the rate of $1,000,000 a day, it can easily be understood that the construction of touring roads has only just begun, and that while the strictly commercial roads will be built to a great extent around the centers of population, yet it is the touring roads which will engage to a greater and greater degree the attention of State legislators, highway commissioners, and motorists.

Occasionally appears a man in the Government service who is willing at personal sacrifice to accept a post with great labors and meager salary, because of the great opportunity it offers to make our land brighter and our people better.

Such a man is Stephen T. Mather, Assistant to the Secretary of the Interior. In his modest but capable way he has accomplished wonders in our national parks. They are more accessible, better provided, and more attractively advertised.

The construction of a system of improved roads connecting the parks is one of the greatest works to-day facing the American public.

Thanks to Mr. Mather and the organizations cooperating with him, that fact is being impressed upon the minds of the people. The "Three A's" is cooperating in this huge but pleasing task. We congratulate the country on having an executive officer of the parks of the ability, the enthusiasm, and the love of nature possessed by Mr. Mather. The slogan of America to-day is "service" and particularly "personal service." We congratulate Mr. Mather in turn for the opportunity which is his to place his offering upon the altar of personal service.

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Imagine the joy, the inspiration, and the delight of the tourist as he motors over improved roads, past the spouting geysers and wonders of Yellowstone Park to the picturesquely modeled peaks and romantically lovely lakes of Glacier Park, along the fields of ice and snow and the impressively beautiful glacier system of Rainier Park! Share with him as he gazes in the waters of almost unbelievable blue which fill an extinct volcano in Crater Lake Park, or is rapt in wonder before the tremendous waterfalls of Yosemite Park! Well may he exclaim: "In nature's infinite book of secrecy a little can I read."

Trees now in maturity in Sequoia Park were lusty youngsters ere the pyramids were constructed in the Egyptian deserts; hundreds were growing before the heroic days of Greece, thousands were leaf-covered before Christ was born in Bethlehem.

The Grand Canyon of the Colorado is beyond description and as the motorist stands on the rim overlooking miles of painted pyramids, can he fail to realize that "A single touch of nature makes the whole world kin"?

THE PRESIDING OFFICER, DR. ROWE.

It has been our habit to feel that if we were but the owner of a motor car we were in a sphere pretty close to heaven. And it is true that those of us who live in the East do not know very much about the real wonders of our country until we do go West, to Denver, because that is the section of our country that is the biggest and the most tremendous in all of its manifestations of nature and nature's bigness. But there is a time coming, and it is not very far away, when there will be those who instead of traveling upon terra firma will find another way, and one perhaps that will reveal, in some respects at least, in more wonderful aspect the truly marvelous things of that country, not only those contained in our national parks, but those lying without them. Here is something that I will read; a little quotation taken from a paper of many years ago, under date of December 17, 1903, which informs us of a great event. (Reads short account of first flight of the Wright brothers at Kitty Hawk, N. C.) That is the announcement that we had at that day, and I remember very well the thrill I experienced when my imagination carried me to the experiences that they were having, and I asked Mr. Wright to-day if that thrill which he himself has felt—he and his brother—when the first attempt proved to be a success, was, after all, the biggest thrill that he had ever had through all the years. He very modestly said he did not know whether it was or not, because they were sure it was going to fly before they had it flying. So, you see

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the trials came out of that wonderful machine that has revolutionized motion on the face of the earth.

Now, men who do things, I suppose you have noticed, are always very modest, and I almost despaired of having the pleasure once of a favorable answer to the request that went to Mr. Wright that he be here to-day and tell us something that I am sure will be of the very greatest interest to all of us. He is a very modest man, as all men of his type are, and I have very great pleasure in introducing Mr. Wright, who will tell us of the "Air routes to the national parks," which we may all hope to take before very long. If there are any high mountains or difficult things in the way he is going to tell us how to get around them. Mr. Wright.

Mr. Orville Wright, of Dayton, Ohio.

AIR ROUTES TO THE NATIONAL PARKS.

Mr. Chairman, ladies, and gentlemen, before starting I think I should tell my automobile friends here that in spite of all that I have to say they need not give up for the present their endeavors to get better automobile roads.

Our national parks are located in wild places difficult of access. Travel to them is at present confined to the few rail and wagon roads leading to them. These roads are expensive in maintenance as well as in the first cost. To build them, paths through the forests were cleared, rivers and caverns bridged, and in many places extensive excavations made to reduce grades. But there is other access to these parks not as yet in use which will require neither roadways or rails, nor bridges or excavations. There is reason to hope that this route may soon be used.

The rapid strides taken in aerial navigation in the past few years have demonstrated its practicability as a means of travel. While it seems certain that it never can compete with the railway train or the steamboat in carrying large bodies of people in one company, yet it will be but a short time till parties equal in size to those now accommodated in automobiles will be safely and easily carried from place to place.

It is only 13 years since the first flight was made by man in a heavier-than-air machine. Within that time the length of flight has been increased from 1 minute to more than 24 hours, the altitude from a few feet to more than 26,000 feet (more than 5 miles), and the load from a few hundred to several thousand pounds.

Travel by air is in many ways the most pleasant mode of travel. It is free from dust, smoke, and vibration from which one suffers in travel by rail or automobile. It is true that in very boisterous winds

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one may be tossed about somewhat as in ocean travel, but even in this the sensation is not particularly disagreeable.

The aeroplane offers not only the cleanest, but also the fastest mode of transportation. All other vehicles must follow certain routes to avoid steep grades. They often follow the winding courses of streams of water. The aerial route passes over mountain or plain, over hill or dale and over river or lake, with almost equal facility. Not only can low places be reached by air, but the highest mountains as well. An altitude of over 26,000 feet has been attained by aeroplane—a feat never as yet accomplished by any of the older artificial means of transportation. The aerial route is not only the most direct and the cleanest; it is the safest, at very high speeds. When traveling at a speed of more than 40 or 50 miles an hour the aeroplane is now safer than an automobile.

But in order to visit the national parks by aerial routes, suitable landing places will have to be provided, either within the parks themselves, or in the closely adjacent country. Landing places should be on flat, level ground of smooth surface, and of dimensions of at least 1,000 feet on a side. Many machines require more space than this. Sixteen hundred to two thousand feet, in at least one direction, is not too much.

In the plains west of the Mississippi and east of the Rockies landing places can be found almost anywhere; but in the mountainous and hilly regions of the far East and far West they are not so plentiful. Here suitable landing places either will have to be prepared or those already existing must be found and marked so as to be easily recognized from distances of 5 to 10 miles. When flying at a height of 1 mile, one has a territory of nearly 200 square miles in which to find a landing place; but unless safe landing places are plainly marked the flyer can not know the nature of the ground until he has come within a few hundred feet of it. Then, if the motor is not operating, it is too late to seek a landing place elsewhere.

It is true that most of the national parks do not abound with such spots already prepared by nature. Neither the rugged mountains with snow-capped peaks and rocky slopes or wooded sides nor the deep river gorges of bowldered beds and precipitous walls lend themselves easily to the formation of ideal landing stations. Yet it is probable that within every national park nature has provided many, or at least a few, such spots, which with little aid from man will serve very well for landing stations. Probably no one as yet has ever looked over our parks with this object in view. No doubt aeroplanes will be improved within a few years, so that smaller spaces than those already mentioned can be utilized. In Crater Lake Park, in the Yellowstone, in Glacier Park, and probably in some of the

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others are bodies of water large enough for the landing of aeroplanes equipped with hydroplanes.

When viewed from above, the flat, monotonous landscapes of the eastern part of our country take on a new beauty, never seen from the ground; the plowed fields, the fields of grass and grain, and the wooded spots appear as a patchwork of beautiful colors; the hills and valleys are scarcely distinguishable; and the whole, seen in this way, appears as a flat plain, marked and colored with a beauty not to be otherwise imagined. But the grandeur of our national parks is in their high mountains and deep valleys. No matter by what route we arrive, these features must be viewed from the ground to be fully appreciated. The giant sequoia, when viewed from on high will be no more impressive than a modest shrub, and the Grand Canyon of the Colorado will flatten out almost to a plain. Though the shining river will be seen winding its tortuous way in a mass of variegated colors, the grandeur of the gorge in size and sculpture will be gone.

THE PRESIDING OFFICER, DR. ROWE.

Mixed up with the affairs of the American Automobile Association for a number of years is a gentleman who was one of the pioneers in transcontinental touring many years ago. I was one of the first two or three to take a motor car westward from the Allegheny Mountains, and it was some experience. In a good many places there were no roads. Some of the roads that were once quite famous as through routes between the East and the West had been allowed to deteriorate to the point where they were not used at all except to pass over on horseback. But here we have some one who went over the entire distance to the other side and back, and he is here to tell us something about his experiences, and the program says that he is to tell us about the equipment for transcontinental touring. I have very great pleasure in introducing Mr. Seaman, of the Long Island Automobile Club.

A. W. SEAMAN, LONG ISLAND AUTOMOBILE CLUB.

TRANSCONTINENTAL TOURING EQUIPMENT.

The subject of equipment for transcontinental touring by automobile is a large one. People's idea of what is really necessary for their comfort is about as varied as the definition of the term "necessaries" in a matrimonial dispute. There is a generally accepted idea that you must have at least paraphernalia weighing between two and three hundred pounds in order to be comfortable. The

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tourist, however, soon learns by experience that many of the articles which he at first considers necessary are not at all needed.

The first thing to be considered is the selection of your car. Almost any of the stock cars will make the trip without much difficulty; how much, however, depends largely upon the driver. If you consider comfort and economy, always bear in mind that every pound of unnecessary weight impairs its efficiency; that power is useless if, in consequence of excessive weight, the car sinks to such a degree as to take the weight from the driving wheels, with the necessary loss of traction.

To my mind an ideal car is one of medium weight, fair horsepower, and plenty of clearance.

The steering rod should be above and behind the lower edge of the front axle, if possible, for the reason that sometimes you have to push it through mud; sometimes you will drive on a newly constructed road where they have simply cut down the trees and dragged the earth over the stumps; you may be driving across the prairie and a rock be hidden in the center, or it may be a hard, high center. In either case, your axle protects the rod if it is behind it. If equipped with a petcock on the underside of the engine base, this should be removed and a beveled plug substituted. This is important, as grass, brush, a high center, or a stone may strike it. It may be broken or only opened; in either case the result is loss of oil, and before the driver knows what has happened he has burned out bearings and frozen piston rings. In this connection let me impress upon all a caution to watch out for high centers. If you are in doubt as to whether your car will clear, make a new track. It will be a little rougher, but may save you serious trouble. On our trip we saw a number of cars with bearings completely cut to pieces because they had hit an obstruction, opening the petcock, or fracturing the base, and we passed many engine pans, torn and bent, rusting by the wayside.

Another thing in making your choice: Be sure and select a car with the seats high enough to be comfortable, so that you can sit for hours without becoming cramped.

What constitutes necessary equipment depends largely upon the manner in which the tourists desire to travel. In a strict sense a good hatchet, short crowbar, shovel, a "pull me out," or instead 100 feet of strong cotton rope one-half inch in diameter, one single and one double 3-inch pulley block, and a piece of stout board 8 or 10 inches square to put under the jack in sand or mud are about all you need east and north of Colorado Springs. West and south, in addition, a roll of chicken wire 1 foot wide, 100 or 150 feet long, a ball of cotton cord three-sixteenths inch in diameter, an extra can of oil,

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and an extra 5 gallons of gasoline and, more important than all, an overabundant supply of water should be carried.

The wire is for use to get out of deep sand; it beats canvas all to pieces. We saw many strips of canvas that had been torn in bits. It should be cut in two pieces the first time you have occasion to use it. To use it, jack up the front wheel; stretch one strip under the front wheel to the rear wheel on each side; leave enough fullness for the rear wheel to catch and draw the wire under when you apply the power. The front wheel holds the wire from slipping, and the wire gives you traction. You will be surprised to see how easily your car will come out of sand of any depth.

It may not be necessary to use any of these appliances. On a trip of 9,000 miles we only used the wire once, and that was to get out of an arroyo where we could not go in either direction, as the driving wheels cut away the sand until the car rested on the differential the moment we put on the power, yet as soon as we put the wire under, the car came out as if on an ordinary dirt road.

Much time and anxiety will be saved if you first ascertain from the manufacturer of your car what kind of oils are best for you to use and then write the oil makers, giving your route, as they will give you the name and address of the dealers most convenient to that route.

We have learned that it is a poor barrel that will not supply any kind of oil one asks for; also that it is wisdom to ask what kind of oils are carried and not for the oil you want.

It is advisable to carry an extra supply of gasoline to guard against accident, although the supply stations are, as a rule, not over 75 or 80 miles apart; yet between Ely and Tonapah is a place where they are 130 miles apart. It is, moreover, comforting to know that you have an extra supply with you in case you spring a leak in your gasoline line.

Water should be carried either in canteens or water bags; water bags are preferable, as they will keep it cooler. These can be procured in any of the western cities. You will be told to soak well before using the bag. This is imperative if you want good service. In carrying them they should be suspended from the car, but lashed so as not to swing or chafe. If they are allowed to rest upon the running board or to chafe they soon leak. Make it an invariable rule to keep all the water bags full all the time. Always refill at every point where you can obtain a supply, regardless of how little you may have used. This may mean your life or it may, if you use a water-cooled car, mean the life of your engine. While we drove an air-cooled car, we made it a rule to carry from 12 to 15 gallons of water, and yet on one occasion where we had expected to lunch

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at a point 50 miles ahead, owing to the removal of the road sign, we got off the road and did not get on it again until the next day and were obliged to camp at night where we could not get drinkable water. The next morning we fell in with another party of tourists who stripped their differential soon after joining us, and while it was only 16 miles to the nearest ranch, as we had to take him out of the washes and over some of the mountains with a block and fall. it was late in the afternoon and our water supply was exhausted long before we reached a point where we could renew it. I would caution you not to drink the water in the streams on the desert, as it is often poisonous.

The sporting-goods stores have a tent of khaki, wall-tent construction at the back and A-tent construction in front, with one jointed tent pole and one guy line to hold it in place. The wall of the tent should be of the height of the wheels of your car, and in using be sure and tie the corner ropes to the wheels. If you tie to the body of the car the springs give when you step on the opposite side, and this is apt to tear your tent. The center ropes may be tied to the door handles. We prefer a tent made of balloon silk, as it is much lighter. You should have in the wall of the tent a window for ventilation; covered, however, with mosquito netting which should be sewed to the tent itself as part of the wall. Outside, over the opening, should be sewed a curtain, considerably larger than the opening, which can be rolled and tied up in fair weather or tied down in stormy or cold weather. Across the front, sewed to the outer edge of the opening, but inside the tent flaps, should be good strong mosquito netting with at least 1 yard of fullness or lap and at least a foot longer than your ground length, so it can be tucked under the floor.

You should have a sod cloth around the tent at least 1 foot wide. It should be roped for four tent pegs on each side and two in the back. It should have four ropes to tie to the car. No knots should be allowed in any of the strings or ropes, but all the ends of the tie strings or ropes should be whipped, as a knot will, in an incredibly short time, chafe a hole through the cloth by the vibration of the car.

The floor should be made of 12-ounce canvas. You can procure it in one piece up to 120 inches wide. It should be made with a 5 or 6 inch side wall. To make the side wall, fold the canvas back the height that you wish the wall, then run a seam or tuck along the edge of the fold. Do this on all four sides. On the extreme outer edge of all four sides and at the end of each seam sew a galvanized-iron or brass ring. When you tie these two together the side wall stands almost perpendicular. This floor cloth, with the mosquito netting, will make your tent absolutely insect proof.

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Waterproof the tent and tent floor. A good waterproof solution is made by shaving 1 pound of paraffin to 5 gallons of gasoline. Stir till the gasoline will dissolve no more of the paraffin, then immerse the material to be waterproofed and knead it till it is thoroughly saturated; hang up and dry. It is needless to say care should be taken that no one strikes a match or has any fire while the gasoline is evaporating.

In carrying your tent, fold it with the roof in, all strings out. Do not let any of these come in contact with the roof of the tent. Fold it between 2 and 2½ feet wide; then roll in a compact roll. A tent 9 feet wide, 8 feet deep, made of balloon silk, can be carried in a small bag. The bag should not be waterproofed, however, but should be of some material of open weave, as you will frequently be required to pack your tent when it is wet, and unless the air is allowed to get to it there is danger of its mildewing. If packed wet, you should take time enough when you stop for lunch in the middle of the day to air and dry it.

We have used a tent made of balloon silk for six years. The last year we used it we were caught near Tampa in a storm where it was reported that 15 inches of water fell in 12 hours, and we have every reason to believe that that report was not exaggerated, yet we kept dry.

A division curtain can be fastened to the tent pole in front and to canvas loops sewed to the rear wall. Be careful not to allow anything to touch the canvas of your tent while it rains, as it will cause the water to seep through.

Wooden tent pins we found most serviceable, all conditions of soil considered. These, together with the tent rope (which should be waterproofed), should be carried in an oilcloth bag, the glazed side in, for the reason that you frequently pack them when they are wet and dirty and you can more readily clean the dirt from the glazed side of your bag. You should carry a number of spare pins. Carry the pole in a canvas bag.

The tent floor can be folded in any size most convenient for stowing. Some tents have the floor cloth sewed to the tent, but in a tent of this size you will find it much more convenient and much better to have them separate. One advantage is that you keep your tent clean, even though your tent floor may get dirty from being on wet ground. I have slept on our tent floor, made of 12-ounce duck, when the water was several inches deep under and around us and still kept dry.

While some tourists arrange their car so that they may sleep in it, a tent is much more preferable to my mind; among other reasons you have a place to cook or eat when it storms. You can keep insects out. We have been very cozy in our tent while the storm was raging outside; besides, you have a place to entertain the people

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whom you meet on such a trip. The tent and outfit complete will weigh about 20 pounds.

For cooking we found a small stove which will burn kerosene oil under pressure, making a blue, smokeless flame, to be most serviceable. We have used both the Jewel and the Optimus with perfect satisfaction; both of these come apart and can quickly be packed in a small box. With either you can cook in your tent. You should, however, have a piece of pantisote about 2 feet square, to place over your tent floor and under your stove, to prevent any oil from getting on your tent floor, and also to prevent the possibility of burning the floor. With such a stove it is not necessary to build a fire.

In six years of traveling we found that all objection to camping was removed the moment we told them that we did not build fires but used a stove in the tent or in front of it. Full directions for using come with the stove. It should, however, be started with alcohol.

You can take off the engine hood and use it as a wind shield if you cook outside. A wind shield is necessary in windy weather.

A tramper's outfit of aluminum "Neverwear" is the lightest and most compact outfit I know of.

This consists of 3 pails, a coffee pot, 2 frying pans with adjustable handles, 4 plates, 4 cups, 4 bowls, 4 tea and 4 table spoons, all fitting into the 3-gallon pail; 4 steel knives and 4 aluminum forks come with the set, but it is preferable to carry them in a separate bag. Extra singles can be obtained if you want more than the set. The outfit weighs 11 pounds.

You should count your cooking utensils every time you pack them, as it is so easy to miss one. For a tablecloth use a light table oilcloth. A light color is preferable, as you can more readily see dirt and remove it.

It is important that you eat good, wholesome food and regular meals night and morning. You can have a light lunch in the middle of the day. It is preferable to have your main meal at night, for several reasons: You do not have to pack your cooking utensils but once a day; you have plenty of time to cook the meal; and you can have your food in much better condition, as you can buy your meat in the afternoon and carry it without difficulty if you keep it away from the heat of the engine or muffler. You can also prepare the drink for lunch in the morning and by the use of thermos bottles have it in good shape in the middle of the day. We found a case holding three 1-quart bottles very serviceable. It also saves time, which is of considerable importance. At night the food box should be put in the tent or car; meat and milk hung from a limb or the car. There is always danger of stray animals helping themselves.

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Provisions can be carried on the running board in an ordinary cake box lined with corrugated paper, provided you put a loose-fitting rubberine or pantasote cover over the box in such a manner as to permit the air to circulate around the box. The box should be first strapped fast. The rubberine cover should also be fastened down to prevent its blowing off. This can be done by using small snaps. It is important, however, that the air is permitted to circulate under the cover. We have carried one for years and have had no difficulty in keeping our butter hard and crisp, although the temperature has been over 80°. The only time that it failed to work was in the desert when the temperature was over 100° in the shade. It will, however, soften up at lunch if the weather is hot, but then only after you take it out of the box. Carry butter, sugar, coffee, and such things in lightning sealing jars; each jar should be in a loose bag; bread and such articles in small waterproofed bags, which can be made of balloon silk. By having each jar in a bag by itself you avoid the risk, to a great extent, of breaking, and also it is much more convenient to get at, as each has its place in packing, and you can pull out one without taking out all. It is well to carry enough canned goods for at least a 24-hour supply, and it is better to have a 48-hour supply, for use in case of emergency.

For bedding, a heavy eiderdown or cotton quilt, which should be covered with a light washable material; this should be so made, either by buttoning or tying on, that it can be removed and washed. This, with two good woolen blankets, all made in the shape of sleeping bags, will be about all the bedding you will need. Such a bed on the floor is very comfortable, and you can use as much or little of the covering as you wish, accordingly to the temperature. To make it, fold the blankets and quilt separately, so that the seam will come on top. Sew each about two-thirds its length; also sew across the bottom, but leave a small hole through each outer corner at the bottom. To each lower corner of the inner bag attach a strong cord, long enough to meet and tie, with plenty of length. In use, put the cord from the inner bag through the corners of the outer bag and of the quilt, and then tie together. This holds all three in place, and you can shake them out for folding. This bed, with a small pillow, a pair of slippers which should be carried in a small bag, and a pair of pajamas, complete the outfit. To pack them, roll in a compact roll and strap with a good leather strap at each end. When rolled, place them in a canvas bag which has been waterproofed and which is long enough to tie. This bag serves the double purpose of keeping your bed clean and dry. A bed thus made will weigh about 10 pounds. As you usually pack early in the morning, occasionally in the middle of the day when you have a good sun you should air the bed.

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Each traveler should have a small bag in which to carry his personal toilet articles, such as toothbrush, comb and brush, towel, wash cloth, etc. We found the color scheme, or marking the toilet articles and bedding with a ribbon of a particular color, very satisfactory, as it enabled each one to know his own belongings at a glance, and without the necessity of unrolling.

Our outfit, consisting of tent complete, stove, dishes, bedding, and provisions, weighs less than 100 pounds.

We found a lined leather cap with broad visor, protected our heads, no matter how hot the temperature.

Personal clothing should be limited to a light woolen or cotton shirt with soft collar (both for men and women; it is often cheaper to buy a new shirt than to wait and have it washed, unless you are willing to wash it in a stream and let your back do the pressing), a change of underwear and socks, one pair of thick drawers, as it is sometimes cold in high altitudes, a sweater, a duster, and a waterproof coat, with the usual toilet articles, are sufficient to enable one to travel comfortably.

Mrs. Seaman says either khaki or corduroy makes a good outing skirt; that with either, and a leather coat and cap, sweater, black woolen tights, duster, a one-piece crushable silk dress and knit underwear, she is ready to start on any trip.

The most convenient towels and wash cloths are made of hemmed cheesecloth. They take up water well and dry quickly. These also should be marked with the owner's color.

For general washing, carry a collapsible canvas wash basin and a cake of soap, which can be carried in it (but it must be in a soap box), and this should be carried where you can easily get at it.

You should have one dress-suit case into which you put your toilet articles and the articles which come in daily use. One suit case will be large enough for the party. The dress-suit cases containing the spare clothing should be first carefully wrapped in paper and then wrapped in oilcloth before being strapped upon the car.

If you carry passengers in the tonneau, you should tie your bed, tent, and tent floor in a compact bundle, then wrap it carefully in oilcloth before lashing it on the luggage carrier, and after lashing it to the luggage carrier you should also have a loose-fitting cover, similar to that covering your cake box on the running board, going over both the luggage and the lashings. This also should be tied down. You should also put oilcloth under the bundle before you put it on the luggage carrier, as water from the wheels will otherwise work up into the baggage. If you do not carry passengers, you can use the tonneau in lieu of the luggage carrier. In this case you should make a canvas cover with a cord running from the middle of the front seat to the middle of the tonneau behind the

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back seat. This cord should run through rings fastened to the underside of the canvas cover, which should be water-proofed, and made to extend over the front seat, back upon the slip cover of your top, come down and button over the side of the car to the side-curtain buttons. We found taking an ordinary suspender with the snap which is upon it and fastening it to the tonneau was a good thing to hold the cord. This will keep out the dust and dirt from your tonneau and will stand a pretty heavy rain, and will more than pay you for the trouble of making.

A convenient thing in which to carry sweaters, raincoats, dusters, and such articles, which may be needed at any time, is what we call a handy bag or a bag made of canvas, with a long flap to cover the opening, large enough to rest upon the floor of the car and have the upper corners tie to the robe rack. A convenient size will hold about a bushel and a half.

If you have any taste for photography, no outfit can be said to be complete without a good camera. This should be carried where it will not get the heat from the car or be over the muffler. In the desert in addition to its regular case we found a cardboard box covered with pantisote, with a top of canvas that could be tied with a puckering string, large enough to take two cameras and a box containing a dozen rolls of films, to be very serviceable.

We also found it advisable to send our exposed films to the photographer at once. Whether it was something in the atmosphere I can not say, but we had exceptionally satisfactory results in having our films developed at Denver. It is well to make arrangements with the photographer who deevlops your films to keep the films, sending you a print in order that you may see what kind of work your camera is doing.

In every car, whether it is for a long trip or a short one, there should be a small package containing scissors, bandages, a bit of gauze, a roll of adhesive plaster, a small box of absorbent cotton, a bottle of bichloride tablets, and a small flask of whisky or aromatic spirits of ammonia for use as a stimulant, for use in case of emergency; a couple of pantisote robes to sit on when eating outside the tent are very convenient.

It is a good thing to carry a bottle of insect repellant. You can usually get it at a drug store ready mixed. If not, a good recipe is: Oil of citronella, 2 ounces; camphor, 2 ounces; oil of cedar, 1 ounce. This will not injure the skin or fabric, and if sprinkled on the floor it will prevent mosquitoes and other insects from coming in, which are in many places quite annoying. Another mixture is: Pine tar, 3 ounces; castor oil, 2 ounces; oil of pennyroyal, 1 ounce. Heat the tar and oil, and mix thoroughly; when almost cool, stir in the pennyroyal; bottle and cork.

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In camping always select a place where the drainage from the house and outbuildings is away from the source of water supply which you expect to use. If the drainage is toward the well, don't stop there, but go on until you find a better place. Try to select high ground for your camp, and after having selected the place, pitch your tent where the ground slopes away from it, if possible. Don't trust to appearances and think it won't rain, or you may have an experience similar to that we had when we pitched our tent without regard to the slope of the ground one beautiful, clear, starlit, night and sat in the car from 2 o'clock until daylight, while the water ran under the tent.

And in breaking camp in the morning make it an invariable rule to always leave your camping site as clean as you would like to have your own lawn left had some one camped upon it. Papers, tin cans, and other litter, unless you can dispose of them by burying them without difficulty or burning them without danger, should be carried until you can find a place where you can so dispose of them. Don't permit it to be said of you in the future by anyone that you had left an unsightly place for some one else to clean up or had done anything to mar the beauty of the landscape or offend the sight of those who may follow you.

While the following suggestions are not, strictly speaking, touring equipment, they may not be out of place.

We have found that it was well to go to a standard tire maker, give him your itinerary, and obtain from him an order addressed to their agents, directing them to supply you with tires, and take your check as tendered, which means uncertified. Do not carry much money; travelers' checks are so easily obtained now and the cost is so slight that it removes the temptation of robbery.

Have one of your party act as pilot; he should have charge of a compass, road guides, maps, etc. The driver should never be required to look out for road signs; that should be the duty of the pilot.

Always strain your gasoline. You will be told that it is not necessary, but a piece of chamois as a preventive beats cleaning your carburetor. Go over your engine every day. Watch particularly spring clips and the bolts which hold the engine and the body to the frame, and when you think you have oiled everything, think again; and particularly watch oil in transmission and differential.

The joys of a transcontinental tour will make you forget all the difficulties you encounter.

And last, but not least, be careful how you choose your touring companions. Much depends upon it. Choose those who can smile, whatever happens; and one of you should have enough mechanical skill to enable you to make ordinary road repairs. It is well to ar-

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range with the manufacturer of your car to ship you any part that you may desire in case of accident.

THE PRESIDING OFFICER, DR. ROWE.

Of course, ladies and gentlemen, I think you will realize that what Mr. Seaman was speaking about is where you put up your tent and rough it over the country. That is very admirable for those adventurous spirits like Mr. Seaman and his wife, who are unusually enthusiastic motorists, but for the fellow who has knocked about as much as I have in motor vehicles, I will take the hotels in the simplest way; and I am told now it is possible to go the entire distance without departing very much from the usual accompaniments of sweet civilization.

We have to-day with us some one who prior to the last few years found it very convenient to roll his machine on a boat in New York and go over to the other side. This gentleman has been identified with the American Automobile Association for many years, is a live member of it, and a highly esteemed one, and one who has perhaps rolled up more mileage seeing the wonders of the other side than at least the average man. I am informed that a year or two ago he thought he would see what our country was, and so he went over to the other side of the country and traveled north and south and east and west over it until he knows it pretty well. Now, he is very well acquainted with how they have capitalized the sites of beautiful scenery on the other side, and when we consider that we have on this side something that will discount the best they have over there, I am told—I have never been there; I have never had hankerings for the other side, particularly during the last two years—I seem to have acquired a very great distaste of any idea of going to the other side at this particular time. But we have something on this side.

I am going to introduce Mr. Cortlandt Field Bishop, whose program assignment is to tell why the national parks should be made ready for the motorists.

MR. CORTLANDT FIELD BISHOP.

AMERICAN VERSUS EUROPEAN SCENIC ASSETS.

Mr. Chairman, ladies and gentlemen, when it was first suggested that I should talk and make a comparison between American and European scenic assets I hesitated very much because I think those who are in any way acquainted with the subject have no choice in the matter. We have a great many wonderful things over here and Europe has a great many wonderful things over there; but I think

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in the matter of scenic specialties we have one or two things here which can not be equaled or excelled anywhere, objects which are absolutely unique, objects which have been heard of for some time. But now we are thankful to see the national parks under the control of the National Government. There is no Yosemite anywhere but in California; there is no Crater Lake anywhere but in Oregon; there is no Grand Canyon anywhere but in Arizona. Those three national parks alone are sufficient, in my opinion, and I have been to most of the scenic places in Europe and to some of those in Asia and Africa, to show me we are ahead in the matter. That is why I thought it would be superfluous for me to talk here on any comparison.

Of course, the great beauties of Europe are the mountains. We have all heard of the mountains of Switzerland and the Pyrenees and the Austrian Alps, which are the finest of their kind in the world. They may be not up to the Himalayas, but they are more accessible. We have here in the Rockies just as fine scenery in every way, I am told, as anything in any part of Europe. I mention the Rockies, but unfortunately the central Rockies are not at present accessible for motor vehicles. The Glacier National Park is rather out of the way and while it is possible to get there most of the persons who do visit it tour it in automobiles. It is still difficult to get the automobile up as far as that. In Yellowstone Park the scenery is perhaps less of an Alpine character—not glaciers—but it is within the reach of the motorist and the number who have been there the last few years is greater and greater.

I can not claim to any distinction as a rough-and-ready traveler like the gentleman preceding me. I have never camped out in an automobile. I have always managed to get to and sleep in a bed. So I am not a hero in that line. I am afraid I love comforts too much and that is perhaps the reason I found Europe so satisfying. For the last 18 years I have motored in Europe, until the war, and always managed to find a comfortable bed and board. So when the European war came about I was hesitating what to do and I fortunately had some friends interested in good road building in California and they suggested my going out there, and in a year and a half I made three visits, but shipped my automobile wisely by railroad and enjoyed life motoring up and down the coast.

During my three trips on the Pacific coast, the last being quite extensive, extending from the Mexican line up to the northern part of British Columbia, I found everything delightful. I do not know that I ever enjoyed motoring anywhere as much as I did on that last trip, because I found so much to see and to admire in nature.

Of course, to-day I have to talk—I believe it is my business—to speak on the topic of making the national parks accessible and con-

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venient for motorists. I have, therefore, thought it wiser to restrict myself to the national parks I know something about.

I visited Yellowstone a great many years ago, before motors were dreamed of or invented, and my experience on the Pacific coast has been confined practically to the three parks.

We all know about the Yosemite in California, Crater Lake Park in Oregon, and Mount Rainier Park in Washington. I visited all three of those this last summer.

I suppose that it is a well-known fact that national parks, as we understand them over here, are unknown in Europe. There is absolutely nothing of the kind. The scenery very much takes care of itself, because all of the countries have taken pains to preserve the forests from desecration; but the national parks such as we have are not though of, and consequently those matters have been allowed to take care of themselves. As it is, matters have gone on very well, and there has been no particular desecration. There is one thing in Switzerland which I am glad to say the national park movement will keep out of this country, building scenic railways and elevators to all sorts of beautiful places, and thereby spoiling them, although rendering them accessible.

The first time I went up the Jungfrau, I fortunately arrived at Interlaaken a day or two after the elevator was opened. The trip impressed me very much; but I expressed the hope, and I hope it will be realized in the future, that none of the other beautiful mountains will be spoiled in that fashion.

We know that in the Yosemite, for instance, this proposition a year or two ago up to Glacier Point was howled down; and I am very glad to feel that the Federal Government will never allow such a thing to take place, whatever may be the popular demand for it.

As it is now, one can go to Glacier Point by automobile. It is a rough and risky journey. I had it myself last year, but we hope as a result of this movement the time will come when a safe road will be built to that point, as well as all others of the national parks, easily accessible.

The chain of parks I spoke of appealed to me particularly, because they followed in sequence from north to south and are really quite easily reached from the main centers of population in the West. One does not require the long trip across the continent. The Yosemite Park has been made in a day from San Francisco, frequently by motor, although I should think it would be a pretty long day.

I do want to make a comparison in one sense with the European mountain ranges, and their convenience of access by motor, because I want to show how little we have done in that line. As I said, the finest mountains in Europe are the Pyrenees, the Alps, and the

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Appenines—all of those can be reached and crossed in every direction by countless passes, all of which are covered by roads well built and kept up. There is only one exception, and that is the eastern part of Switzerland in the canyon known as the Grisons Canyon, which is perhaps the longest in Switzerland. They have very fine scenery, but their roads are not of a modern sort. They were built years ago in the old coach days—I might call them prehistoric days—and they have never been improved in any way. As a result, the people of that part of Switzerland have forbidden the use of motors altogether and have lost much travel and kept away the most desirable class of tourists.

I do not want to say anything detrimental of Switzerland; but I think they have made a great mistake in excluding motors from the eastern part of the country. I am glad to learn of late years thousands of the automobiles are allowed in all of our national parks, and their use is being encouraged and is to be encouraged instead of discouraged, the way that Switzerland has done in the past year.

Now, this European war is not going to last forever, notwithstanding appearances to the contrary, and there will be a vast number of Americans used to going abroad before the war who will not be particularly anxious to go abroad in the future on account of the many inconveniences which will result immediately after hostilities have ceased. Now, those Americans ought to be encouraged to visit our national parks in the West. Those persons have been used to motoring a great deal in Europe for many years and will feel the want of it.

I spend my summers in a little town in Massachusetts where the number of motors is increasing rapidly every year; even until late autumn a ceaseless stream of tourists come from all parts of the East and travel over that part of the country, and travel most of the day and all night long. Now, those people will look for other fields after awhile. We want to encourage them.

The national parks want to do all they can to attract those people, and many things must be done to get them and make them comfortable. I do not know whether one realizes, who has not studied it, what an immense country this is and the great distances. We talk of the parks as if they were all together. You will find, however, it is a matter of thousands of miles, and most of the distances extremely bad highways, and that is one reason that makes it extremely difficult. Cooperation will be necessary to connect the parks with one another, and that is one of the results of the Federal-aid road act of last year that should bring about an expenditure of money where the population is sparse in certain States and the States can not themselves furnish the money to build good roads to induce travel.

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Going back to the three parks familiar to me, I found a great difference in the methods of access to the parks in each State. For instance, in Washington there has been in that State more progress in road building than any State in the Union. Washington certainly has done wonders. There was last spring, and is still, I know, a fine highway from Seattle and Tacoma into the Mount Rainier National Park. To be sure, the park district of Mount Rainier has had but very few roads until now. But what it has got are of excellent quality, and it is perfectly possible for a citizen of Seattle to drive his motor up to the glaciers of Mount Rainier in a morning's run, something that can not be done anywhere in so short a space of time. None of the European cities is as closely situated to the glaciers as are Seattle and Tacoma. On the other hand, the difficulty of driving in a motor to Crater Lake is about as great as anything I can imagine. I made the trip myself last year, and until I got to the reservation I saw no decent road. I suppose Crater Lake has been described a great deal this week, but I can assure you it is well worthy a visit. At the time I was there I was perfectly astonished to find a good road, with proper grades and proper curves, being laid out by the Federal Government. But against that there were perhaps 100 miles of rough mountainous road which Oregon has done nothing to improve. And that is really quite enough to discourage anyone from going to Crater Lake.

In the Yosemite Valley—I speak more particularly of the Yosemite because I have made four trips there, two in the last year by motor—I must say that the Yosemite Valley has a great deal of room for improvement in regard to its highways. My first visit was just as I was going to college, some 30 years ago, and I then made the trip by stage, the only method possible, and I remember I thought the roads so bad those days it was cruel to allow horses to pull me, and I walked most all the way. I came back after 30 years in my automobile, and I find the roads more cruel than ever. I left the Yosemite as a result, and came back to the San Joaquin Valley. I had not a single spring that was not broken, and I had to lay up three or four days before I could go farther. Those roads seemed to me not to have improved in those 30 years. Of course, we must not put the blame all on the Federal Government. Some of those roads, some 40 to 60 miles in the distance, lead through territory not under the Federal Government, and most are toll roads that were laid out by toll companies some years ago, and have not been kept up. It certainly is bad enough to have to pay toll, but doubly so on a road almost impassable. And that is one reason why the State has a matter of great difficulty that will take a great deal of time and trouble to rectify. But I do think that our money can just as well be spent on

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making our national parks accessible as on post offices and customhouses in remote villages, as seems to be the fashion nowadays.

There is another trouble about the roads in the neighborhood of the Yosemite Park. They were laid out as old coach roads many years ago, and without regard to proper grading or safety. The roads are extremely dangerous leading into the park. Perhaps you are aware that although the floor of the valley is 4,000 feet above sea level, it is impossible to go by highway without crossing a pass 7,000 feet high to get over the divide. The railroad comes to the Yosemite up a deep valley, and never rises above 4,000 feet altitude. There are three highways, but none comes over a pass of less than 7,000 feet. Consequently the difficulties to be overcome are very great, and all the highways were laid out years and years ago, perhaps at the time of the gold seeking, or maybe later, and no attempt was made to provide a proper grading. The result is most of the steeper parts fatigue any automobile, and the descent was so great there is practically no brake that will not burn off if applied vigorously. All these things require a great deal of attention, and I think there is only one way to bring the matter to bear, and that is for Congress to investigate the matter and provide for going ahead in a thoroughly scientific way, not attempting to touch up the present roads, but construct them anew. I am sure that applies to all the national parks as well as the Yosemite.

I understand in some of the other parks, such as Sequoia and Grant, the roads are not laid out yet; the matter is untouched; and they will be easier to start fresh and do it rightly. I have found many complaints of people going to the parks on account of the regulations imposed on visiting automobiles very much like the regulations imposed on motorists in Switzerland on some of the passes. You have heard of the typical villages in some parts of Switzerland where the limits of speed are small, and you are fined. I have been fined, and everyone has had the same experience. The fines are collected by telephone, and the fine is sent to the village head, and you are forced to deliver before you go on. That is not true, of course, in the parks, but the regulations are strict, and I think rightly so.

I have not been in the Rockies during the crowded season, but at the end, when there are not enough motorists to make the regulations necessary, as at the height of the season the roads are crowded. In the Yosemite the road is so steep that traffic is allowed one way like New York and Boston. People have to wait until their turn comes and start in one direction, and when the hour is up, the traffic goes the other way, and anybody in the interval has to go over the bank until the others go up. That should not exist in the Yosemite. The Yosemite is within a day's run of a great city, and

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many people spend their vacations there, and those things should be remedied. They can be remedied. It is only a question of money. I have ridden over roads in Europe far steeper and far more dangerous territory than anything in this country, and I have been over new highways there built so that no accidents are possible. To avoid going over the precipices, solid masonry bridges are constructed, and no accidents can occur; and we must come to that in this country and are coming to it very rapidly.

I mention road-building activities in Washington and California. Those States have to my knowledge within the last two or three years undertaken many problems just as great as anything presented by the Yosemite. There is a road built in connecting a county in Oregon and one in California. I have never found anything more wonderful than that road. The grades are easy, the grading never over 5 per cent, and not a blind corner. You can always see the traffic coming the other way. The State of Washington has done just as wonderful things in the Olympic Mountains. That country was impassable; no road of any sort two or three years ago; and now you can cross the mountains without slipping a cog and without jar.

I presume attention has been called this week during these meetings to the question of hotel accommodation in the national parks. My experience with the Yellowstone is so far back I know nothing really about it, but in the Yosemite I felt things have been very far behind the times. I noted in my last visit I made that plans were on foot for extensive hotel building, and I think that is of great importance to the motorists and every one else. It has been less in most of the national parks I know of. People do not feel comfortable. The equipment was not luxurious enough for the women to spend any time. It is the custom in Europe for people to spend two or three months with their families, but in the national parks under my observation the hotel conveniences have been such that people only stay two or three days and then pass on. That is a fault that can not be remedied without more modern hotels. I believe in the Yosemite, as I mentioned, it is going to be done; and in Crater Lake and in some of the other parks; the sooner, the better in all of the parks. In the far West the hotels have been started originally by the railroads, and while they have done so much, the Federal Government can afford to follow, and I hope such will be the case.

I found in some of the national parks there was another matter needing attention, and that was the Government regulation of the sale of gasoline and other supplies for motorists. It occurred to me, what little I saw of it, that the prices were not kept down as much as they should be to encourage the motorist. I have not an intimate knowledge of the subject, but I believe if the Federal Government attempts to fix a price on gasoline and oil and other

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materials sold in the national parks it should be called to the attention of those in authority that the charges should not be prohibitive. I remember when I bought gasoline in the Yosemite and elsewhere the prices seemed very high.

There is a great deal yet to be done in developing our parks in every sort of way. We hardly realize as yet what a tremendous asset they are, and, as I say, I hope this European war keeping Americans here will enable them to appreciate it more and more.

I can not too strongly insist on what, it seems to me, is a very important work of the American Automobile Association. There is, as you may know, in France, a Touring Club de France, which has an American name in part, but entirely French in character. That organization has done wonders in the 20 or 30 years of its existence in developing touring activities all over Europe, more particularly, of course, in France. It has kept the hotels in order, improved them, reduced the charges, looked after the charges, improved the highways, etc., and it seems to me that work belongs to the American Automobile Association in this country, and they can develop it, and I believe they are developing it.

The passage of the Federal good roads bill was a step in the right direction; and it seems to me the association has only begun in slight measure what it ought to be able to carry out with its influence and membership. There can be no greater work than the work of the kind I have mentioned to enable people to understand and appreciate and develop their own country.

THE PRESIDING OFFICER, MR. A. G. BATCHELDER
(Who Substituted for Dr. Rowe, Who Had to Take a Train.)

Mr. Bishop's connection with automobiling goes back to the very early days when perhaps we motorists were somewhat in the position of the man who had bought a horse from the Quaker. The following day he noticed that the horse was not quite up to the standard claimed, and so he started back to see the Quaker, who noted his coming and started to escape. Whereupon the man shouted: "I am not bringing the horse back, but I want to borrow your face and your clothes while I sell it to another man." Now, we were compelled in those early days of automobiling frequently to get behind the other fellow in our advocacy of many of these things that were being brought about. One of the early charges against us in Congress was that all that we wanted were peacock lanes across the country for our highbrowed members to race over and endanger the farmer's children on the way to school and to run down his hens and other fowls. Of course, we did not have any such idea in mind, and we have persisted in the work that we have set out for ourselves, and,

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as Mr. Bishop says, and I agree with him in the hope he expresses that we shall be able to do some of those big things like what the Touring Club of France has done. We even look forward to the time we can emulate the National Geographic Society and do something similar to its recent action in taking from its treasury something like $20,000 and thus aid in purchasing and preserving a large section of the big trees in California.

Referring to these "peacock lanes," probably one of the greatest roads across the country to-day, a road which is assuming a tangibility, is that known as the National Old Trails. That road includes in it the old Cumberland Road, the highway on which this Government expended money away back in the early days of the Republic.

Of course, in the case of every road there is a necessity to signpost it to make it easy for the man to follow it, and while Mr. Davis, the secretary-treasurer of the National Old Trails Road Association, was not able to be with us to-day, he has sent in his stead Mr. W. P. Simpson, who is going to give us a bit of a talk on "Signposting on highways and byways."

MR. W. P. SIMPSON, KANSAS CITY, MO.

SIGN POSTING ON HIGHWAYS AND BYWAYS.

Mr. Chairman, ladies and gentlemen, I stand much higher in Missouri as a rock crusher than I do as a speaker. So, I will erect a set of old trails here instead of trying to make a talk [exhibits placards and signs before audience].

These signs are on 2-inch galvanized-iron posts in this form, and set 30 to 36 inches in the ground, secured by a block of wood treated with creosote. This top sign [indicating] is alike all through the system. This sign [indicating] is made—each sign for the particular location along the route as we go over and give the mileage. This work is completed from Los Angeles, Cal., to St. Louis, Mo., and we have contracts from St. Louis, Mo., to Richmond, Ind., contracts by counties for the work which is to be begun next spring as soon as we can cross the Illinois mud roads with a truck, and will be completed into Washington some time next summer. The entire system will then be complete.

This sign [indicating] is made where there is a turn in the road. and there will be two signs and only one figure on the signs.

This sign [indicating] is made in the town of Booneville, Mo., with no mileage. A great many of the towns, or smaller towns, do not even have a marker up that the tourist may know what town he is in. I believe Overbrook, Kans., has one, and that slogan is "Do not overlook Overbrook."

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Where there is no turn in the crossroad, the sign is put up parallel with the road and figures at the top and at the bottom, and only one sign. Where there is a turn there must be two signs, so they will show up from a quarter to half a mile before you get to them.

This is the larger sign [indicating] for railroad crossings, one on either side of the road, or short turns; at corners where the view is obstructed, where you can not see the people coming from the other way.

This sign posting has been contracted across the continent to Richmond, Ind., at $10 a mile. It costs a little more than that to do the work, but the Old Trails has asked the larger cities to make up the deficit in this work, so it is taken care of in separate funds from the Old Trails' promotion fund.

I thank you very much.

THE PRESIDING OFFICER, MR. BATCHELDER.

There is a story told of a couple of Scotchmen who were out in a boat which was buffeted and billowed, and it did look as though they would not get ashore. Finally Jamie said, "Sandy, you had better offer a bit of a prayer." Sandy replied: "I don't know how." Whereupon Jamie retorted: "If you don't, I'll throw you overboard." So, Sandy hesitatingly started: "Oh, Lord, I have not bothered you for many a day, and if you'll only get us safely out of this I'll not trouble you again for a long time." Just about then the boat grounded in the sand and Jamie at once cried: "Stop your praying, Sandy; don't be beholden to anybody."

Now, one of our difficulties has been that lack of desire to come in on the great big plan; in other words, we have had 48 separate State units, and it has been a pretty hard matter to get the richer and the stronger of these 48 to help the weaker and the less developed ones. But gradually we seem to be accomplishing that plan, and as President Wilson very forcibly put it, "We are, in this good roads work, knitting together the energies of the country."

Now in everything there must be the man who has the vision, for there is a proverb that the people perish where there is no vision, and so in this work we have had those men who have dreamed the big things which later have become true. Out in Wyoming there are men who dream and we have here a man who conceived the idea that all the national parks should be connected, that there should be roads constructed and maintained in such a way that it would be an easy matter for an American really to see his own country and see it comfortably. Mr. Gus Holm's, of Cody, Wyo., is the man who has conceived the idea of this park-to-park highway and he is going to give us his views on the subject right now. Mr. Holm's.

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Mr. Gus Holm's, Cody, Wyo.

PARK-TO-PARK HIGHWAY OF THE WEST.

Mr. Chairman, ladies and gentlemen, the chairman introduced me wrongly. I am not the dreamer of the national park-to-park highway; I am the assistant to the man who really thought of it and made the first suggestion, Mr. Stephen T. Mather. I am representing some local roads organizations which took the work up. I am glad to say that we are making some success and hope in the very near future to be in a position to say to Mr. Mather that his suggestion has been carried out.

His suggestion appealed to us as being very good. For a number of days I have been here listening to remarks of interest about the national parks throughout the United States. I am a westerner. Naturally, I may seem to you a little bit inclined to be selfish with regard to the western country. I have traveled over considerable portions of the western country—very little over the East—and even long before the days of the automobile I traveled over the roads that were spoken of here. I know of them and I know that in some cases they have not been improved but very little. But to us natives those roads are just as easy to get over as the roads that you have in this country. Do not get the impression from remarks that have been mentioned by the former speakers that it is hard to get over our country. I just want to say to you through the State of Wyoming, on what is known as the Yellowstone Highway, there are eight large towns. Every one of those towns has from three to five garages; every garage is fully equipped with machinery, and from 50 to 125 feet long to larger buildings, modern as you will find in this country or any place.

The hotel accommodations along the highway are very good, while possibly not enough to accommodate the increasing travel that is going to come. That is one object with my work. Connected with the promotion of roads in my section of the country I encourage the building of hotels and garage accommodations, so that those of you from east of Chicago that come out to visit our country and the national parks will find it just as convenient as you would traveling in your own section of the country.

The transcontinental highways that have for years been working and striving for the same object have succeeded very well. The opening of the national parks has given us a look in, and particularly in the Yellowstone National Park we have splendid hotel accommodations.

Mr. Mather, as I understand, has removed all the difficulties that have previously caused inconvenience to the automobile travelers

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to-day; that is, this coming summer you will travel through the parks just as easily and just as comfortably as you have done over any other section of the United States, without any regulation that will hinder you any further than is necessary for safety.

Now, I have with me a map. I am not going to take up very much of your time, because it is getting late. I have drawn on this map the possible park-to-park highway, not definitely settled on, as it has not been permanently settled on by the different States. I am sure about my own State. The park-to-park highway may be a dream, and I presume it is, but with the assistance of the American Automobile Association, the officers of which have assured me of their cooperation and help, the parts of this big road will be connected up and within a few years will be a reality because of the reason that it is already partly opened. There is no section around that entire circuit that can not be traveled with safety at the present time. The park-to-park highway just simply connects by cooperative energies and consolidated advertising a desire to travel over the park-to-park highway, which is just simply portions of already organized roads.

These are the proposed national parks [indicating on map], of which there are 12. There are 9 at the present time. Very shortly there will be 12. In course of time there will be more, for there is a gentleman here from Denver now working on Congress to establish two more national parks in Colorado.

We have a proposed national park in Wyoming. There are 21 national monuments around this entire section. Those national monuments are right on the circuit or within a very short side trip from the circuit.

Now, the ribbons that are leading east there [indicating] are not accurate. They are not absolutely sure. But they go to show the transcontinental roads that have already been promoted across the continent, contributing to the park-to-park highway. With all due respect to anyone here from inside of the circuit and from my acquaintance with the West, I know of but few attractions within its circuit, except one proposed national park—the Saw Tooth Park—that is having difficulties getting a road that is suitable. That is one of the places that you get the dust that a former speaker spoke of. It will take some years to make that road around this circuit, passing through and over nine different States, eight States entirely, and across one portion of Idaho, making nine traveled through, with the exception of Arizona, New Mexico, and from Los Angeles to the Needles, over a well-established road that is not a sandy proposition. It is a prairie country in most cases and through mountains that are excelled in no place in the world without exception. We can offer in the United States, and particularly on the park-to-park highway,

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mountain scenery that can not be beat in any place in the world, not excluding Switzerland, for we have the Glacier National Park, and most of those places I am personally acquainted with, having at some time or other visited them by automobile and before the days of the automobile. The Grand Canyon of the south is now a monument, but will soon be made a national park.

We invite you, we invite the travelers from the East, to take the coast-to-coast highway, no matter which direction you are going to go, whether south or north, it does not matter, and in course of time we will have a road that will be in good shape for you, and we will really have better roads and will be better able to keep them up on account of the less rain than you have here in the East; and, eventually, we will have established a concrete highway around that entire circuit that will then make it possible to travel at the same speed from park to park and visit all the attractions of the western portion of the United States, inviting you not only to pass through our towns, our parks, but to stay awhile, live awhile.

As Mr. Bishop said, in Europe people are staying for a number of months. Why is it? Because you are getting a little farther away, and it is not so easy to get back after you have gone over there, and you do not like to come back until you have seen it all. Do the same with the western section of the United States, and you will be just as well satisfied as with anything you have seen in a foreign country, except they are now in ruins from the effects of war. The map, I think, will possibly speak for itself more than I can say for it. It is only a suggestion; and by aid, as I said before, by the aid of the American Automobile Association and other gentlemen connected with road progress and the promotion of automobile travel the park-to-park highway will be, in my judgment, a reality before many years. Even now, if it is possible for you to get from here to the park-to-park highway, it is more possible for you to travel around it, because it has taken that much of an effect; and, as I said, hotels and garages are building up, with the view of accommodating the travel, and you will not always have to carry a camping outfit.

Speaking of the automobile travel, most of you that are here, possibly a good many of you as tourists only, but if you could only see some of the outfits entering the Yellowstone National Park—my home is right east of the Yellowstone National Park. Last season we had the best year after the first season, because the park has only been open for a while, and many machines came to us from Kansas, Oklahoma, and near-by States, possibly 2 out of 10 from east of Chicago.

Now we are going to make it possible for you east of Chicago where there are more people longing and capable and able to travel

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than west of Chicago to reach us, and machines have come across the continent carrying one or two extra inner tubes. They have traveled from New York over the desert country without carrying an extra tire—a good many machines—because at any town along the way you can buy the necessities just as well as in your own city. The places are supplied, and if it does not happen to fit your machine right at the time, it is phoned to the neighboring town. The accommodations are just as good as you will find touring in the East. So do not be afraid, do not be afraid of the West, for every man in the West is willing to help extend to you a friendly hand, and you won't have to bring a lot of equipment.

Our friend Wright suggests that we may have to have a landing place. I do not know, with the growing aeroplane business—I do not know how we are going to find a large enough place for a landing place. That is all that troubles me. In the Yellowstone National Park we might find a place to land one machine, but not too many, for it is too rough; but it is beautiful.

There are one or two other gentlemen to follow me, and I am indeed pleased to have had an opportunity to present to you the park-to-park highway. It has been a pleasure for me to come to Washington, my first visit to our National Capital. I have learned a good deal from discussions that have for a number of days taken place here regarding the affairs of national parks, and I hope to go home with a better understanding of what is being done, with the hope of assisting Mr. Mather and the other gentlemen who are doing the work that eventually will help us. I invite you, one and all, to come out into our section of the country, and from Cody into the eastern entrance of the park travel over 70 miles of the most scenic highway in the United States and over just as good a road as you will find in any other portion of the United States.

I thank you.

THE PRESIDING OFFICER, MR. BATCHELDER.

I must commend your industrious patience of this week. I know the large quantity of information you have had given to you, and that you have absorbed, and I realize along about this hour of the day that only such survivors as Enos Mills and Judge Steel and Mrs. Sherman and a few of that character can stick it out. There is only one other speaker, and he is going to be quite brief, and he takes the place of the chairman of our touring board, Mr. Joyce, who could not be here. Mr. Ferguson is a man who has dared cross the United States with a motor truck. It was some job. He is the manager of the touring bureau here at our National Capital headquarters, and has probably covered more miles of road throughout

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the United States of one kind and another than any other man of whom I know. Mr. Ferguson is just going to give you a few words in behalf of Mr. Joyce, who was unavoidably detained in Chicago. Mr. Ferguson.

MR. ERNEST L. FERGUSON.

Mr. Chairman, ladies, and gentlemen, I see that Mr. Joyce is down for something about the "Multiplication of American road travel" in the United States, or rather in this country, which means sometimes the United States and a bit of Canada included. Inasmuch as to-day it is possible, with the exception of about 100 miles, to go from east of Portland, Me., and from Quebec, in Canada, to a point south of Miami, Fla., on a highway; that is, I say it is possible, because just this week we have a stretch south of Washington that nothing will get through. As evidence of the touring spirit, let me say to you that last year the bureau carried about three to one for the preceding year, and this year it has more than squared itself. In fact, there are to-day in Washington six automobiles on their way south to Florida. That one trip and that one route is the nearest completed boundary to boundary, in the sense of north or south or coast to coast, of any of the roads, and therefore it is perhaps carrying the greater number, despite some enthusiastic figures that might be given from other routes.

The other main north-to-south road in the United States is the Meridian Road, which probably does follow the central meridian of this country, and the third road mostly known is the Pacific highway over which Mr. Bishop practically traveled in going from that little three-bit town in Mexico, known as Tia Juana, to Puget Sound; and in addition to these there are, of course, many others like the Dixie, proposed to lead from Chicago to Florida, and many, many others, out in the Middle and extreme West in the sense of being this side of the Cascades and Sierra Nevadas.

Then, we have the east and west routes, where—well, I should say six or seven or eight years ago it was a really difficult job to get any sort of a car across the continent by any combination of routings you might pick out, whereas there are now seven main transcontinental routes, any of which can be covered with reasonable comfort during the season, barring a bit of rain here and there in the Mississippi Valley and in the other valleys between the Rockies and Sierras. Of course, the Lincoln Highway is the best-advertised route.

If it rains occasionally you have to lay over. But, as Mr. Bishop said, he did not find it necessary to camp out. I have never found it necessary to camp out on the seven trips I have made. I have camped out, as a matter of fun, but I did not from necessity, except

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when we took the truck across that Mr. Batchelder spoke of, and that was because it weighed 10 tons and broke down every bridge, and we had to camp out by every bridge and rebuild it. A man who was a bridge builder approached us on one of these occasions and gave me his card and said, "I will give you a little assistance." I asked him a few questions and found that he was experienced in the building of bridges, and I told him to go ahead. In a twinkling the bridge went up. Then he told me, with a twinkle in his eye, "You people are making business for us," and then he explained that we motorists broke through that bridge about three times a day on an average. But that was abnormal, of course. The truck weighed 10 tons.

A day or two ago a man from New England started across the continent by the southern route, and he has an outfit put up according to his own ideas, whereby he and his wife live in perfect comfort. He has a small engine up front. How it will be made to pull a thousand-pound outfit is a puzzle; it is up to him, anyway; we need not worry. But in the multiplication of road travel you will find generally that while we have been accused as a Nation of softening down a bit and not having the pioneer spirit of our forefathers, that does apply in a measure, for we largely do like to go over roads that are already there. On the other hand, the American Automobile Association has a great many members who do not mind going out and exploring over some very difficult country, and that is a thing that is keeping alive as much as anything, and before the local people especially, with the marvelous increase of autos, that there is now the real need for real roads.

Sometimes I have got into trouble with the suffragists because I claim that, if they would devote as much time and energy to road work as now they devote to their uplift work, they would really accomplish something—because they would give the women an opportunity to vote, when now they can not go to the polls half the time.

They talk about prisons. People have brought the new prison rule into existence. Now, you can take it from me, in my experience in 45 States of this Union, that no prisoner under guard of a man walking on the wall with a gun on his shoulder is more absolutely confined than the women out in the country. We have a mudhole between them and the polling place. And the women out in the country are not altogether stupid on the situation. Do not think that. I remember down here in Fredericksburg, Va.—to show you the countrywoman is really up to date, after all—at the last fair they had down there they took the women and showed them the various historic places in Fredericksburg, and among others is a monument erected to the mother of George Washington. On the monument is

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the inscription: "Erected by our faithful countrymen." There was an old lady from away back in the woods present, and she looked at it and said: "Thank goodness, I have seen something for once the city women did not do!"

Now, the countrywomen to-day are really more of a factor, or can be, in multiplying our road travel than any group of city women I ever met, because the city women are too used to travel around on a thing already made for them. But the countrywoman knows what she is up against, and if there are any good suffragists here to-day, if they will do a little on the road question they will be doing something on the suffrage question.

The transcontinental travel has been second in its growth to that along the coast. The last year, of course, was abnormal. Perhaps as a result of the California exposition, those people have gone back East and told their experiences, and through that there has been an immense flow of travel this year across the continent. But the great travel has been, and I say this with Mr. Holms back there, hoping that Mr. Holms will hear me, the great trouble has been in boosting the transcontinental travel, that the rival fellows do not stop at boosting their own road, but they have so much to say about the difficulties of the other fellow's road. Now, you take it from me, they all have their difficulties. When it rains out there, none of them but have their difficulties under those conditions, but in normal good weather most all of them can be made with perfect comfort, and you can have a hotel every night, and a restaurant in which to eat every noon, if you plan a reasonable mileage for the day.

I had prepared quite an elaborate outfit on a possible chance to prove this multiplication table I was up against on the program. The time is late, so I have chopped it all out and got it down to a few scattering wild ideas and remarks that I have been making. But keep in mind this one thing, that you who own automobiles and want to travel, do not be like those whom I once met in a town in Louisiana. It seems they had a delightful little park area there in the middle of the town, eight blocks long, and the question of their touring was going up one side and down the other. I happened to be there with my family on a trip, and suggested that they go along with us on the next day's run. They said it could not be done. I said that is not encouraging, but we are going to try it. The result was that by noon we had eight cars with us at luncheon, and at night four of those cars, and they had gotten one hundred and twenty odd miles, much to their surprise.

Now, all of those conditions exist all over the country, and so do not stand still or circle around in a small area if you want to tour. Because you do not know this yourself, write to us and we will tell you something about it. We either tell you that you can or can

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not get where you are headed for, even though you may be like a letter we got the other day. Somebody in Montana wrote in and said five women wanted to make a trip to Texas. They had a cat with them. One of the women was careful to mention the cat; but the next day a letter received from a man stated, "I want to make a trip to Florida, and I want to carry a bulldog with me; can I do it?" Of course they multiplied the amount of travel by one cat and one bulldog.

I expect the extent of travel into the national parks has already been told you. There has been the biggest increase apparently of the number of cars going into the Yellowstone Park. Last year was the first year. The matter is therefore not susceptible to comparison, but this year the number jumped so that I might be excused if I exaggerate. Such exaggeration would perhaps be owing to a Mather-like imagination, rather than a common, ordinary mathematician statement, as our friend has been the one big thing that has brought this result about.

You want to go out into the country of Mr. Holm's, and you will find all that he said to be true.

It being late and having exhausted my own ideas of what I wanted to say, I am going to excuse myself at this point.

THE PRESIDING OFFICER, MR. BATCHELDER.

In conclusion, I am going to inflict just this short story upon the survivors, because it does not apply to you. Down South there was a baptism taking place in the creek, and everything had proceeded with a great deal of success until a quite elderly man was taken in hand by the minister for baptism. Some one from the shore cried out, "Excuse me, parson; I don't mean to interfere with your business; but that old sinner wot you have got hold of needs special 'tension. Yo' jest stake him in dat water for the night." I don't think it is necessary to take any of you people and stake you to convince you that we ought to have real national parks. They ought to be made ready for Americans to see them; and, furthermore, by working together and using all our influence from every possible source, and with the cooperation of a Department of the Interior which realizes the situation, I am sure that within a comparatively short space of time we are going to have that thing we seek. I thank you very much for your patience and attention.

(Whereupon the Friday afternoon session was concluded.)

FRIDAY, JANUARY 5, EVENING SESSION.

The Friday evening session was convened at 8.15 o'clock. Illustrated lectures were delivered by Judge Will G. Steel, Commissioner of the Crater Lake National Park, Medford, Oreg., and H. H. Hays.

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JUDGE WILL G. STEEL.

Mr. Chairman and friends, I know you are my friends, for your very presence here indicates that you are interested in mountains and all they signify; and if that is the case you can not be otherwise.

My life has been given to the freedom and joy of the mountains in the Pacific Northwest. For more than 40 years I have wandered through them, sometimes alone, sometimes in the midst of great, jovial crowds of men and women—two or three hundred of them, sometimes. I have sat before the solitary camp fire listening to the strange notes of the coyote and the solemn call of the owl, while memory lingered in pleasant valleys far away. My soul has gone out to my neighbors, the trees and the lakes and streams, and I have laid awake and watched the stars until I was lulled asleep by the gentle music of the gurgling stream.

On the rim of this same Crater Lake they have spoken of, I have listened to the words of that kind old prince of the forest, John Muir, and well do I remember his words:

> Climb the mountains and get their good tidings. Nature's peace will flow into you as the sunshine flows into trees. The winds will blow their freshness into you and the storms their energy, while cares will drop off like autumn leaves.

I have climbed the mountains and my soul is cheered by the recollection. I have stood on the top of old Rainier and looked to the north over that wonderful wilderness of the Cascades; to the west over the waters of Puget Sound and on to the great Pacific; to the Columbia Basin in the south and far beyond the rugged range to the Big Bend country away off in the east. And my soul has swelled with gratitude to my Creator for this marvelous sermon on the mount, that all who see can read and understand but of which none can tell.

> It seems by the pain of ascending the height
> We had conquered a claim to that wonderful sight.

God has reserved for mountain climbers alone this stupendous grandeur and has sealed their mouths and paralyzed their pens that they may not tell their neighbors.

I was not satisfied to enjoy this life alone, so induced my friends to go with me. The parties grew in number, and I wanted to spread the gospel. With that end in view I organized the Oregon Alpine Club, intending it for mountain climbers alone; but the idea proved popular and the public was invited to join. They did so with a vengeance. When the constitution was ready for signatures, instead of having half a dozen members there were 75 of them, and we poor mountain climbers were lost in the shuffle. It was an organization based on theory and controlled by bright and shining lights of society.

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Before we realized it there were 650 members. The seed had been sown in poor soil and sprang up quickly, but when the sun rose the withering process began. I watched it die with a great deal of interest and really enjoyed the transit. During the withering process I had conceived the idea of organizing a club on the summit of Mount Hood and limiting the charter membership to those who had climbed to the summit, a perpetual snow cap up the sides of which it was impossible to ride, horseback or otherwise.

I called in my friends. We formed a preliminary organization and on the 17th of July, 1849, 350 persons met at my ranch at Government Camp, on the south slope of Mount Hood, and there we held the first camp fire. I promised that next day I would show them the Pacific Ocean, but they did not believe me. Next morning we moved camp to the timber line and spent the day rambling over the snow and rocks. Late in the afternoon I led them to the sky line in time to see the sun approach the horizon. When it reached the angle of reflection, a long, golden band appeared, and all realized that they were looking at the Pacific Ocean, over 100 miles to the west. From behind the mountain the waters of the great Columbia emerged and flowed onward to the sea, like a shining ribbon of gold, to Cape Disappointment, 120 miles distant.

Next day, July 19, 1849, we toiled over the snow from early morn to long past midday, when we stood on the highest point 197 strong, the largest number of human beings that had ever gathered on the summit of such a mountain in one day.

We needed a name for this organization of enthusiasts and found one that was coined by a Spanish naturalist in Mexico two or three hundred years ago, Mazama, the significance of which is disputed; scientists sometimes claim it means the antelope, while others favor the mountain goat. However, we took this matter in hand and settled it by deciding that it means the mountain goat, the best mountain climber in the country. So there!

Forty-six years ago I was a farmer's boy in southern Kansas and attended school 5 miles distant. My lunch was carried in a newspaper, the advantage of which was that I had no basket or bucket to carry home. One warm day in May or June, I sat in the schoolroom eating the contents of that paper. When through I scanned the columns, reading the short articles, among which was one descriptive of a sunken lake that had been discovered in Oregon. It was said to be 5,000 feet below the surface of the surrounding country, with vertical walls, so that no human body could reach the water. In the center of it was an island 1,500 feet high, with an extinct crater in the top. In all my life I never read an article that took the intense hold on me that that one did and I then and there determined to go to Oregon and to visit that lake and to go down to the water.

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I had two brothers in Portland at the time. Two years thereafter I went to Oregon with my parents and we were met at the steamer landing by my brothers. Before getting over the dock I asked them where that sunken lake was, and found that they had never heard of it. It was seven years before I was able to find anyone who had ever heard of it; then I was told that there was something of that sort in southern Oregon, but my informer was not sure. In nine years I found a man who had actually seen it, and gave me a good description of it that greatly increased my desire to see it. However, I was not able to get there until the summer of 1885, when, together with three friends, we made the trip, arriving there in July.

At Fort Klamath I met Allen David, chief of the Klamath Tribe of Indians, from whom I got the tradition of its discovery. He informed me that, many ages ago, the Klamaths came suddenly upon the lake and at once realized that the Great Spirit dwelt there. Reverently they lingered near for a time, then slowly withdrew. One brave returned and looked upon it with awe, then joined his tribe. Again and again he came; finally he descended to the water, where he heard strange voices and saw many monsters or Llaos in the water. At last his curiosity overcame his reverence and he killed one of the monsters, when myriads of them surrounded and caught him. They carried him to the top of a great rock, where they cut his throat with a stone knife, then cut him into small pieces, which were thrown over the rock to the Llaos below, who promptly devoured him—and such shall be the fate of all Indians who violate the sacredness of the place by intruding upon it.

Crater Lake was discovered by a party of 22 prospectors led by John W. Hillman, then of Jacksonville, Oreg., June 12, 1853, and named Deep Blue Lake. Mr. Hillman was the last survivor of this party and died in Hope Villa, La., March 19, 1915, in the eighty-third year of his age.

While standing on the rim of the lake in 1885, with Prof. Joseph Le Conte, the thought occurred to me that at no point around this wonderful caldron had the hand of man yet desecrated it with peanut stands or other marks of desolation and something should be done to forever save it for the people of this great country. How to accomplish this was the question, so I turned to the professor for counsel. We discussed it at length and finally decided the only way was to have a national park created. Ways and means were discussed, and the work of preparation commenced then and there. A petition to the President was prepared, asking for the withdrawal from the market of 10 townships, which petition was granted the following January, when President Cleveland issued an Executive order to that effect. The actual work of interesting Congress commenced immediately and continued for 17 years when a bill was passed and

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signed by the President May 22, 1902, the anniversary of the marriage of my parents. I had the temerity to write to our Congressman for the appointment as superintendent but was informed that no superintendent would be appointed for some time; but one was appointed at once who greatly excelled me in politics.

There were no fish in the lake, and this worried me until the thought occurred of putting some there. In 1888 I obtained a bucket full of rainbow trout minnows down on the Rogue River, 50 miles distant, and in two days walked the distance and was successful in getting 37 live ones in the water. They had no enemies to contend with and increased rapidly, so that in a few years the lake was full of them. Since then I got from the United States Fish Commission 50,000 rainbow trout fry and at another time 17,000 black-spotted trout fry, all of which were placed in the lake, besides 6,000 crawfish, for food. In all these years we had not found a minnow in a fish's stomach, so we conclude that they are certainly not bad cannibals.

Soon after taking up this work I realized the necessity of roads and was not long in developing a comprehensive system the central idea of which was a road completely encircling the lake. The cost seemed appalling, but I set about to put it into effect. In 1908 I appealed to Congress for funds for the park and was successful in getting $10,000. This work was carried on through the seasons of 1910 and 1911, and the cost was estimated at approximately $700,000.

I immediately applied to Congress for the money and spent the entire winter in Washington importuning Congressmen for assistance. It was by far the hardest fight of my life, but a bill was finally passed granting us $50,000 on account. Over $300,000 of this money has now been spent and the work is in full swing. The remainder will be spent as soon as it can be economically, and when the entire system is finished we will have the most thrillingly beautiful automobile driveway on earth.

Several months ago I was taken by friends over that wonderful drive, the Columbia River Highway, and when we returned to Portland I was asked to express my opinion of it. "Gentlemen," I said, "I have never been in Europe, but I have been all over the United States many times and can say advisedly that there is nothing in this country in the same class with it and I do not believe there is in the world. But, remember, I am neither joking nor boasting when I say that, when our road system in the Crater Lake National Park is finished, we will make your Columbia River Highway look like 30 cents; and I will be willing to rest my judgment with you, if you drive over it."

I am here on another mission for Crater Lake, in that I want a paved road built from Medford to the western entrance of the park,

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at a cost of nearly $2,000,000; and I expect to win. I am not asking it all just now, but hope to secure a fund of $100,000 for use during the season of 1917. When I have succeeded in this mission, I want you to come out and see us tear up old roads and put in new ones.

So much for Crater Lake. But, this is not all. We have mountains and glaciers and lakes and streams of beauty and grandeur beyond the ken of man and so great that if all Switzerland was thrown into them a passer-by would look askance and say, "What little summer resort is that over yonder in the valley?"

Now let us stand upon the summit of Mount Hood and look about us.

> Lo northward—lo, southward, in martial array,
> Stands monarchs 'yond monarchs whose crowns fret the sky,
> Look westward—the sea at their feet lies asleep;
> Look east and behold the far desert's broad sweep,
> Now hushed are our boastings; Ah, man! thy life's drama
> Seems puny and vain in the realms of Mazama.

Mr. H. H. Hays addressed the conference on the "Greater Yellowstone," displaying as he spoke, a remarkable collection of slides of Yellowstone scenes.

SATURDAY, JANUARY 6, MORNING SESSION.

SUBJECT, "THE GRAND CANYON."

The Saturday morning session was convened at 10 o'clock, with Hon. Stephen T. Mather, Assistant to the Secretary of the Interior, presiding.

The subject of the morning session was "The Grand Canyon."

THE PRESIDING OFFICER, MR. MATHER.

We believe that the canyon itself will probably be the best introduction to the addresses to which we are going to listen this morning. Probably there is no one scenic wonder in this country in which more people are interested than in the Grand Canyon. That is particularly true the last few years, and probably the teremendous attendance, the large number of visitors that saw it in 1915 in connection with the travel to the exposition, will add strength to the strong movement to have it created a national park. The plan is not moving very rapidly just at present up at the Capitol, but the interest is there just the same. It is only a matter of concentrating attention. In good time it will join the group of parks already created and come into its own, so that it can be properly handled, and that preparations may be made for its development as a park. At present

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the canyon is being developed by the individual efforts of the Santa Fe Railway Company. It brings the bulk of the travel.

We are very fortunate this morning in having with us Representative Simeon D. Fess, of Ohio. Mr. Fess is very much interested in the Grand Canyon. He knows it thoroughly. I am going to call on Congressman Fess for a few words from his own standpoint, both as to its appeal to him and also the possibilities and prospects of the necessary legislation in Congress, as he sees them.

Hon. Simeon D. Fess, Representative from Ohio.

COLOSSUS OF CANYONS.

Mr. Chairman, ladies and gentlemen, it is an honor conferred upon me to be invited to join this group of scholars and research men and women, but I am simply overwhelmed with the topic that has been suggested upon the program, but somewhat relieved by what the chairman has just now suggested when he asked me to say something about the possibility of the Government becoming sufficiently interested in this greatest of the world's wonders, in making it more accessible to the people. When I was thinking in my very busy hour, because of certain legislation that is soon to come in which I am greatly interested, and that is to come to-day, about what I could say to any people interested in this great question, I was, as I suggested, simply overwhelmed with the thought of an attempt to describe the canyon. Everybody refers to and approaches it with a different interest. If I should attempt to describe its impression upon anyone when he first beholds it, or even after he attempts to descend it, I would have to have the power of language of a Charles Dudley Warner; I should not attempt to do that; I could not do it; it would take some one who has a greater facility of expression than the average man that you would find in the House of Representatives.

On the other hand, if I would undertake to detail the history of it, I would have to find it written in the rocks, and the chasms, and the wonderful temples; I would have to call upon the geologists; I would have to appeal to the famous Powell or Dickens or our distinguished George Otis Smith, who is here. I am interested in it from the standpoint of geological study, it is true, but I, a layman, could not discuss it from that standpoint. I could not begin to suggest what it would mean to one who has never seen it. I would have to have the skilled hand of the painter, as you saw a moment ago on the canvas, even then to fall short of its reality. To ask me to describe it, even though I saw it before my eyes! That's an impossibility. If I were interested, talking to a group of people who were trying to get the early history of the life in the canyon, there is plenty of

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resource, but I am not capable of even doing that. This must be left for the real traveler and explorer. All I can say to you, ladies and gentlemen, is that I have taken the time to come down here to make it very emphatic that it's impossible to do what most people have expected me to do. You are asking me to do the impossible when you ask me to talk about this colossus wonder of nature. I can say this, however, before I leave you, that our people must be educated to support more generously the tablets of our history, whether it be the history of our people or the history of our continent.

I have been greatly outraged to realize how slow we are in maintaining permanently those tablets that are of greatest importance to us in the genesis of our own people, to say nothing about the wonders of our continent. I remember not long ago that there was an attempt to tear down in a great city a famous place of interest that had been the meeting place of the famous men of other days, and the birthplace of some of the great movements that make for most in our present-day history; and the people of that city were so outraged to think that the commercialism of the times was apt to be sufficiently influential as to overcome the meaning of the place that they organized a volunteer association and purchased the place in order to make it permanent as a tablet in our history, and not to be destroyed. That undertaking was not national; the meaning is national, but the effort to preserve the tablet was purely local.

I read in yesterday's paper an extract about an attempt to widen the streets over here in Philadelphia. I think it's Arch Street and Seventh, which it is proposed to widen in order to make it a more convenient thoroughfare; but to do so is going to obliterate the famous site upon which stood the little house in the second story of which was written the Declaration of Independence, penned by Thomas Jefferson while he occupied the house. Our modern time is so commercial that we are apt to easily obliterate these tablets of history, totally oblivious to their importance in our history, and I protest against it; and as I want to maintain these places that are the original markings of the movements of our civilization, I would like by national authority to preserve and make accessible for the value of the entire public in all time to come these famous wonders that are ours by nature, such as the Grand Canyon.

I hesitate in a matter of legislation just now before us in utilizing the waters of Niagara, a matter that is purely commercial, and probably from that standpoint wholly justified. I hesitate to be a supporter of any measure that may seem to be for the moment necessary that would have the effect of ultimately destroying the scenic beauty of that great natural wonder. And yet I have been told, and told by one of the Congressmen, for whom I have the greatest respect, that the good Lord has put that power there to be used for man, and that

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we ought to utilize it, and he continued, "Mr. Fess, you will come to the place yet where you will see that the people's value in it is not to look at it, but to use it for the purposes of mankind." This commercial item is always present and quite frequently all powerful. It rules to-day.

Now, that is in the minds of many people. My fellow citizens, I do not know whether we are eliminating altogether the element of ideality, and are superseding it by the element of utility, but I fear we are. There is strength in the ideal, and there is power in the beautiful, and I doubt very much the wisdom of saying that we are justified in destroying the beauty because it is not useful as long as it remains beauty. The ideal and beautiful are eternal, beyond mere utility, and for that reason, I shall vote and urge with my voice the authority as well as duty of the Government to make the Grand Canyon more accessible to the public, to lend the influence of the Government to the needs of these famous wonders, not only to preserve their beauty, which of course will be preserved, since it can not be destroyed, but to make that beauty within the reach and enjoyment and pleasure of the great population of the country. The Congress invariably hesitates to take any step along such a line because it is to be perpetual; Members always inquire when a project is proposed: "Well, what is to be the end of this thing?" If we undertake to develop it by the National Government, it means appropriations, and the little money this year, will mean more next year. It will be cumulative, and Congress is always hesitant on undertaking anything that is to be perpetual. If it is temporary, they are apt to do it quickly, but if it is to be perpetual, they say, "What is to be the end of it?"

Now, my friends, while that is true, the Grand Canyon is one of the famous wonders of the world that the Government can afford to expend money upon, to make its reality common property to the people who might seek its wonders if the Government would but take it in hand and make it more accessible. Our Secretary, under whose power it is, will tell you that the economic idea of it ought not to be in the way, for in all probability it can be made self-supporting. But let me ask the question, even though it can not be made self-supporting, or conceding that it can not, is it a useless expenditure of money or a waste of money for the Government to make accessible to the population of the country as well as of all countries the greatest wonder of the world. I do not think it is a waste of money, and all that I can do for you as a Member of Congress is to voice my approval and simply say in these few minutes that I am thoroughly convinced that this ought to be made a national park. I am convinced that the Government ought to go beyond making it a national park, but should proceed to build roads, to make camps, and

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to secure water at convenient places, so that it can be utilized as a living possibility as well as simply remain a thing of beauty. I shall do what I can to reach that conclusion, so far as Congress is concerned. Good-by.

THE PRESIDING OFFICER, MR. MATHER.

We certainly appreciate the hearty support which the words of Representative Fess have pledged. Already we have a strong group in Congress deeply interested in the establishment of the Grand Canyon as a national park, and with that influence spreading through just such men as Mr. Fess, undoubtedly we shall have the result which we have so long hoped to obtain.

I have been called to the Capitol to a committee meeting which I feel it necessary to attend, and I am going to turn over the meeting—the chairmanship—to the next speaker; but before doing that I want to say just a word of tribute to Dr. George Otis Smith, the Director of the United States Geological Survey, for the very great interest which he has always taken in our national-park problems.

We have drawn freely on the survey at all times, with Dr. Smith's very hearty support, the initiative coming largely from him, with suggestions from him as to where and how he could benefit us, with all who are under him in authority giving freely of their time and energy, we owe to the Geological Survey a very large part of any success that has been attained in the development of the national parks.

I have pleasure in introducing to you Dr. George Otis Smith.

GEORGE OTIS SMITH, DIRECTOR OF THE UNITED STATES GEOLOGICAL SURVEY.

THE SURVEY'S CONTRIBUTION TO THE NATIONAL-PARK MOVEMENT.

Mr. Chairman, ladies, and gentlemen, this is a contribution which the Geological Survey had not expected to make at this time, and I will further assure the chairman and you, ladies and gentlemen, that as chairman from now on I will see that the next speaker before you is not allowed to encroach upon the time of the speakers who follow. If I overrun my allotted time, I will call myself to time.

It is an opportunity which I welcome to address here to-day this National Parks Conference and speak on the contribution of the United States Geological Survey to the national-park movement.

I welcome the opportunity to address this National Parks Conference simply to assure you that the contribution of the United States Geological Survey to the movement for national playgrounds is not only a fact of the past but also a promise of the future. As

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the field service with which I am connected was a pioneer in this good work so we purpose to continue our cooperation.

A swing around the circle may serve to illustrate what already has been contributed by the Geological Survey.

In the Yellowstone the scientific investigation of its resources began before the creation of the present survey, but the resulting report by Hayden, Holmes, Peale, and Gannett was published under the supervision of the United States Geological Survey, of which organization these pioneers had become members. Exploration and study of this wonderland was continued by Arnold Hague and his associates, the topographic surveys being made in 1883-1885. It is interesting to note that Dr. Hague, 33 years ago, speaks of the Yellowstone National Park as a national zoological reservation and a game refuge. Nor were the practical matters of park administration neglected, for 20 years ago Director Walcott made specific recommendations on the improvement of roads, hotels, and transportation facilities, the protection of the park from forest fires, etc.

In that wild region, of which was later made the Glacier National Park, topographic surveys began in 1900, and in 1908 Topographer Robert H. Chapman furnished the Senate committee with a report on the area of the proposed park, submitting a sketch map which was used as a basis for fixing the boundaries in 1910. Here, again, the work of the geologist helped to make known the natural wonders and beauties of the region, Mr. Bailey Willis visiting the region in 1901, and Mr. M. R. Campbell, publishing a full geologic description of the part in 1914.

When I mention the Mount Rainier Park I wish to claim much for the Geological Survey and its geologists. Samuel F. Emmons, then of the King Survey but later the leader in the Geological Survey's work in the study of ore deposits, made in 1870 what he thought would be the first ascent of this incomparable peak, only to find near the summit evidences of Gen. Stevens's successful climb of only a few weeks earlier. In the early eighties Bailey Willis built the trail from the north through the dense forest to the upper slopes of the mountain and escorted to the snow fields a party of prominent tourists who were the guests of the Northern Pacific. In 1895 and 1896 Mr. Willis and I made geologic studies of the north side of the mountain and the latter year, under the skillful leadership of Prof. I. C. Russell made the first ascent of the peak from the northeast. Prof. Russell in his report on the glaciers of Mount Rainier, published in 1897, made a special appeal for the passage of the legislation then pending in Congress for the creation of this national park. It is interesting to read in Russell's report the enthusiastic praise of the grandeur of Rainier's scenery by James Bryce, who had been a member of the Northern Pacific party of 1883. The excellent topo-

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graphic map of the Rainier Park by Matthes, Davis, Birdseye, and Tufts is, we trust, but the forerunner of an adequate popular statement of the life history of this monarch among our western mountains.

But before leaving Rainier let me relate a special service rendered by the Geological Survey in the administration of this park. A few years ago an enterprising iceman, presumably desirous of lowering the cost of living in the Sound cities, petitioned the Secretary of the Interior for the right to cut ice from the end of one of Rainier's wonderful glaciers. By way of forestalling any technical objections based upon theories of conservation or public interest in glacial scenery, his ingenious attorney set forth the purpose, intent, and desire of the petitioner to cut only so much ice each winter from the end of the glacier as would otherwise melt the following summer. His well-meaning plan was simply to do what nature would do—but do it sooner. His logic reminded me of the reasoning of the man who proposed to minimize the damage from rear-end collisions by leaving off the rear car. The Geological Survey failed to see the point, and Secretary Ballinger refused to grant the application.

Crater Lake, like Lassen Peak, must be credited largely to the geologic studies and scientific papers of J. S. Diller, the survey geologist whose quiet propaganda since his earliest visit in 1883 finally appealed to the thinking people of the country. The Nation does well to retain title to these two volcanoes, the one of which long ago lost its head and the other which is now active in a conservative and seemingly well-intentioned way.

The lecture by Mr. Capps before this conference on the region of the proposed Mount McKinley Park may be taken as evidence of the survey's desire to render similar service to that which helped to create these other parks.

Yosemite, like the Yellowstone, has been the scene of work by Federal geologists both of the earlier organizations and of the present survey. The names of King and Whitney are associated with those of Muir and Le Conte, and these pioneers have been followed by Russell, Turner, Calkins, and Matthes, while the accurate topographic surveys are to be credited to Marshall and Matthes. Director Walcott also visited the park 20 years ago, making specific recommendations for its improvement. In 1904 Mr. Marshall was one of the commissioners selected to survey and change the boundaries of the park.

Now, turning eastward, without mention of the General Grant and Sequoia Parks except to say that by reason of love for the high Sierra we of the survey intend to continue to help in the movement for the Greater Sequoia, we come to the Rocky Mountain National Park. Here, again, the chief geographer of the survey rendered large

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service in promoting the creation of this park by his report of 1912, made under instructions of Secretary Fisher. Last season the geologic study of the area was made by a survey geologist, Willis T. Lee, and his popular description will soon be issued by the National Park Service.

Passing by the Mesa Verde, where both topographic surveys and geologic studies have been made by members of the United States Geological Survey, I wish to conclude our circuit with mention of the Grand Canyon—the greatest of America's wonders. On the brink of the canyon stands the monument to Maj. Powell, the explorer and geologist who was the second Director of the United States Geological Survey. To Powell, the hero of the successful passage of the Colorado, we owe the first appreciation of the Grand Canyon, of its scenic grandeur and no less inspiring geologic significance, and the work of exploration and interpretation so well begun by Powell was continued by Dutton and Walcott, by Bodfish Matthes and Goode, and by Darton and Noble, geologists and topographers in our survey.

The story of the past written on the painted walls of the canyon has not yet been fully read nor have all the vivid charms of rock terrace and turret been caught by poet or painter. How important is it then to add this greatest and grandest of wonderlands to the Nation's crown of parks? Where better than in these wide spaces telling of the infinite past can tired and troubled humanity find relief from the petty things of the city street, and win that true recreation of spirit to fit us for the duties of life?

Speaking now, nearly 50 years after Powell fearlessly explored the canyon's depths, I must express a belief that the creation of the Grand Canyon National Park is a step already too long delayed.

It is appropriate that in continuing our consideration of the Grand Canyon, both in its present condition and with regard to its possibilities as a national park, that we have the privilege of hearing from one whose name is intimately associated with the comfortable enjoyment of this wonderland of the West. So we have the opportunity of hearing from Mr. Ford Harvey, who will speak to us on the subject of "The public and the Grand Canyon."

Mr. Ford Harvey.

THE PUBLIC AND THE GRAND CANYON.

Mr. Chairman, ladies and gentlemen, I feel that I have come a very long way to say very little, but the director of this department seemed to think that I might say something of interest where he is doing so much, and I have such a high admiration for him and his work that I felt that when he called I should do whatever I could in my small way to assist.

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What these gentlemen who have preceded me have said about the fitness of the Grand Canyon to be a national park I have heard personally on different occasions from two Presidents of the United States, three Secretaries of the Interior, every United States Senator and Congressman I ever met who has been to the canyon, and innumerable distinguished men of letters and science and arts; and still the Grand Canyon is not a national park, and, as far as I know, there is no definite step, not even a bill before Congress to-day, to make the Grand Canyon a national park. As evidencing the public's interest in the Grand Canyon, I will say that I have known the canyon intimately ever since the railway has been built. I am sorry to say I did not know it before. But the railway was completed to the canyon, or practically completed, in 1900. In that year there visited the Grand Canyon 813 people, less than a thousand. In 1915, 15 years afterwards, the visitors to the Grand Canyon numbered 116,027.

That is, of course, not a fair average; in other words, that was the World's Fair year at San Francisco and is very much above the average attendance. But still, comparing it with other parks or with the most celebrated parks—the Yellowstone, Glacier, and Yosemite—the Grand Canyon in 1915 had an attendance of 6,415 more than those three national parks combined. So I should say that the public's interest in the Grand Canyon was very thoroughly demonstrated.

I had the pleasure of hearing yesterday afternoon addresses from two gentlemen who described motor trips, and they were very interesting indeed. One of the speakers described the equipment desirable to have on a transcontinental trip, and that man could go anywhere in a motor car and enjoy it—that is, all his difficulty would be met and overcome; but I should rather think the experience of meeting difficulties would be part of the pleasure. The other gentleman frankly stated that he did not motor. In other words, he wanted the comforts of hotels and roads and things of that sort.

Both of those classes visit the Grand Canyon, as, in fact, they visit all parks, and they want different sorts of things. For the first class the conventional sort of things would be rather objectionable than otherwise—I mean that his enjoyment would be that of the explorer; the sense of the unusual would appeal to him; and I must say that I think it is the higher sense. But the bulk of our visitors belong to the other class. They want comfort.

I took the trip a year ago in emulation of the first type of motorist. I did not plan, however, to go wholly without comforts, and, in fact, I wanted to go de luxe. Feeling that our people had no experience with those roads, I employed some men that had good cars and who claimed to be experienced in the roads of the desert.

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I had my son with me, and we took a Packard Forty-eight six-cylinder car for ourselves, with a driver, and a Cadillac Four with our bedding and camping equipment; then we took a little Chevrolet car for our retainers, who were to do our cooking and were not to suffer any inconvenience or want if we could help it. Just about as we got ready to start every once in awhile there came a heavy rain, and the Colorado River went up. It did not seem very high, and we tried to ford it with our car. Before we got through our Packard got sand in the gear shift. We got upon the other bank all right, but the car would not go. Our Cadillac stripped its gears, and it was disabled, and our little Chevrolet was the only thing that was left with our retainers.

They turned that over to us, and we started to the Mesa Verde, about 90 miles away, without food, without bedding, and without anything except a little chap to drive us. We landed there at 3 o'clock with beautiful moonlight; but I want to say that moon got very cold about 3 o'clock in the morning—and we had no food and no bed. We got breakfast, by the way, from another chap who had come there very much as the fellows out that way do. He understood his country very well, and he had a cheap little car of some sort and no car to carry his food. He was equipped much as this gentleman described yesterday, and he got through all right, and there he was cooking his breakfast with his wife. They gave us breakfast—coffee and bacon—and it tasted awfully good. I told him I wanted to pay. "Oh," he said, "that's all right, Mr. Harvey; very glad to do it for you." I asked him if he had plenty of gasoline. "Well, yes," he replied, "I have plenty. Don't you bother at all." "Well, let me do something for you, anyhow," I insisted. "There is a supply store, an automobile supply store, here, and if there is anything you want, get it and charge it to me." I thought that was too small a compensation for so welcome a breakfast, but when I got the bill for the gasoline I changed my mind. He had purchased 10 gallons at a dollar and a half per gallon, which made my breakfast bill $15.

Well, I only mention these things because I want to say that it is expensive to provide for the class of travel and the class of visitors that I would represent, for example: Out of the 116,000 I think perhaps there are at least 100,000 that have to be taken care of when they go to the Grand Canyon. There must be some sort of a program for those people; there must be something conventional for them to do. To expect them to seek their own entertainment and take care of themselves is to expect the impossible, except in a very small number of cases.

And then the difficulty of the canyon problem is accentuated by the fact that there is no water up on the rim. We have to bring our

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water in there from, oh, perhaps, a distance of a hundred and twenty miles by rail; and if you can't have water, of course you can't have camps. The few camps or ranges that are equipped for impounding water in small reservoirs do not have it for sale.

Now, it is only the Government or some other powerful agency that can take care of such situations; that is, take care of them in a large way. The Government is the proper agency and it is for that reason that I have spoken with some feeling about the fact that the Government has neglected to take hold of the situation.

The administration of the canyon at the present time is under the Forest Service, and I want to say that I have never come in contact with a cleaner, higher grade lot of men than the Forest Service people. But, as I understand it, they are not in position to get that kind of appropriations for the canyon, and I am not sure that their administrative rules are such as enable them to handle the sort of situation we have out there. I am not sure otherwise; it may be that they are; but the administration and the money ought to go together. You can not get very far with administration unless you have some money.

We are planning, and have been planning, to put at the canyon some cottages, or community cottages, which would be accessible to people of moderate means. Take your school-teaching class; there is no more desirable class to have visit the canyon than that. And take the many scientists that are not wealthy, men of letters, and artists—we should arrange that those people may have a cottage that they can rent for a very moderate sum; they can keep house there, we providing them with some sort of a store that will sell at moderate prices the particular things that will lend themselves to that mode of housekeeping. We would have to provide the water and to provide the people to care for the premises, leaving the occupant, as much as possible, independent.

The railroad company has already expended a large sum of money, and the work, as I said before, is very expensive at the canyon. They built a roadway of 9 miles to the west. It should have been built by the Government. It cost the railway upward of $200,000 to build that 9 miles of road. I have no doubt that if one went before Congress and asked for $200,000 to build 9 miles of road he would have to talk quite a while before he could convince Congress that it was a desirable appropriation. And yet the railroad company built the railroad.

They also built a trolley. I do not know whether this subject interests you, except those who are familiar with the canyon. It is really not easily understandable. But I simply say that the purpose was to round out a scheme so that, with various trails and with camps, it would be possible for people to visit the canyon and see it and its

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beauties and appreciate its splendors and live its atmosphere at a reasonable price and in an instructive way. The situation, however, needs study and work. It will persist because the thing is so big. It will persist even if nothing is done. People will go there if there is not another dollar spent there; but it is not a fair thing to the canyon and it is not a fair thing to the people of the United States that the situation remains as it is. I thank you very much.

THE PRESIDING OFFICER, DR. SMITH.

There is nothing succeeds like success; but I think that more of us are just human enough, those of us who know of the successes that have been attained by the Harvey system, to thoroughly enjoy hearing from Mr. Harvey himself of one time when the Harvey system broke down. I referred to the fact that we do not yet know all about the Grand Canyon, of its beauties and of its charms. We have the opportunity to hear a little more about the glories of the Cataract Canyon from one who knows it at first hand. Mr. Charles Sheldon, the chairman of the game preservation committee of the Boone and Crockett Club, is with us, and we have the pleasure of listening to Mr. Sheldon at this time.

CHARLES SHELDON, CHAIRMAN OF THE GAME PRESERVATION COMMITTEE OF THE BOONE AND CROCKETT CLUB.

GLORIES OF THE CATARACT CANYON.

Mr. Chairman, ladies and gentlemen, in the plan to establish a national park of the Grand Canyon, I understand that it is not yet certain as to whether the Cataract Canyon and the adjacent vicinity will be included within the lines. I did not know that until Mr. Mather informed me of it a short time ago, whereupon I expressed very much surprise that there should be a thought of leaving out the Cataract Canyon. I have only made one trip there, but it was that remark of mine to Mr. Mather which led him to insist upon my saying a few words about it. So, I can't speak of the Cataract Canyon with any authority, when I consider those who are so much more familiar with it than I am. But there is one section of that region which I have traversed, and I do not believe that many men have been in the region which I am going to tell you about. What I am going to say is to be considered as a plea for all those interested to see to it that the Cataract Canyon is included within the lines of this proposed park when they are finally incorporated in a bill, which I hope will very soon be presented to Congress.

You have heard so much about the beauties and glory of the Grand Canyon. Nothing can be added to it. However, a national park,

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as I conceive it, is all the more interesting to the public in proportion as you can increase its recreation facilities. The recreation facilities about the Grand Canyon are somewhat limited. The Cataract Canyon region, properly developed, offers a most wonderful and very wide field for recreation; that is, for camps, camping parties roaming for miles and miles within the outer walls of the canyon itself.

I did not label my address, did not know it until I read it in the program, "The glories of the Cataract Canyon." It is a very miniature addition to the Grand Canyon. You drive 35 miles from El Tovar, where most people, not all, would break the monotony by camping overnight at the head of a little side canyon without any comforts or accommodations whatsoever. You have to bring tents, and bring your own water; then you descend over a trail which has been somewhat repaired, but still a very crude trail, a very steep trail, down four or five hundred or more feet to a side canyon, and ride 2 or 3 miles into the Cataract Canyon, which is a very narrow canyon with the cliffs rising fifteen or eighteen hundred or more feet very close to you on both sides, and you can ride 12 miles down to the very interesting village of the Hava Supi Indians.

The sculpture along the sides of this canyon walls is similar to the Grand Canyon, and it is most marvelous to those who go through a region like that for the first time. The Hava Supi Indians are Indians of very extraordinary interest. They have a village there. Perhaps in early times they were driven down there. In talking with the Indians they seemed to emphasize that their early enemies were the Mojaves, also the Apaches; but ethnologists and those more familiar with the western Indians could decide that question much better than I can. When well down the canyon the river bursts out through the gravels and flows rapidly with a good volume of water, and the land where the village is located at present lends itself to the irrigation ditches, and under the supervision of the Government agents, the Indians have cultivated the land, and they grow a large variety of vegetables and fig trees, and I should say that they stick to their work of irrigation and cultivation pretty well. In the winter they all go above the canyon and roam around the plateau of Coconino forest above, camping, and I suppose they shoot some of the deer and enjoy the sort of a life that perhaps Indians most enjoy. I have been unable, in searching the literature, to find any ethnological information of value about the Hava Supi Indians, but possibly a specialist might do so. Mr. Cushing in the eighties went down there and wrote an article in one of the magazines, but that gives very little information about them.

So, as a central feature of things down there, there are these Indians, and I am positively certain that there is a wide field for

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ethnological investigation among them to record their folklore and their history and various things of that sort.

Now, should this region be included in the park there is a fairly good road to the head of the side canyon by which one must enter the Cataract Canyon. It would be a very simple matter and an inexpensive matter to develop accommodations there, to pass the night before you proceed into the canyon. It would be a very simple matter. The road to the Havasupi village is a natural road, and it would be a very simple matter to place accommodations in the Hava Supi village which would be a headquarters for roaming about that territory. I have not been below the Havasupi village in the Cataract Canyon, but I believe that the beauties down there in some of the features are of surpassing interest. But I went into the region to investigate the status of the magnificent animal—that animal which adorns the canyon, and will do so more in the future, I hope, when it increases—the mountain sheep. Above the walls of the Cataract Canyon, I do not recall the exact height—1,800 to 2,000 feet—is the red sandstone of the canyon. It is a plain existing for many, many miles. I traversed the plain for 20 to 25 miles. It is from 4 to 6 and 8 miles distant from the outer wall of the Grand Canyon, which rises 3,000 feet in that section.

The Grand Canyon is completely different in its aspects from that which you view from El Tovar. At El Tovar you look down and you see this outer wall of the canyon; then you see a sort of plain, above which rises your towers and castles and real mountains existing below the earth. But in this region there is the outer wall, and here the plain that you see broken below at El Tovar is perfectly flat. When I say "flat," of course, there is a roll here and there, but looking at it from above it gives you the impression of a perfectly flat plain. At present, to reach it there is only one place from which you can reach that plain, and that is in a side canyon from the Havasupi village. There you climb along the wall of this canyon for 4 miles to the head of this side canyon over a trail, which to the average tourist would be very difficult and seemingly dangerous, for it is a trail simply worn in the rock by Indian ponies. There are places where they go along with but 3 feet of width on a slope, and there are five or six or eight hundred feet below you on the perpendicular, and these ponies can scramble along that trail. It is a perfectly simply thing for persons working with horses in that region, but I think the average tourist would hesitate to take it. But that is necessary to get out in this region above, and once you reach it the first thing that obtrudes itself on the vision was what I found—the most striking and magnificent mountain or butte within the Grand Canyon.

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Now, this region where you find this butte—I have been unable to find it on any map—I have been unable to find any of the geologists who have been in that region and studied it. I have been unable to find any allusion to this magnificent butte, which is an isolated remnant of the original plateau. It is magnificent because of its isolation. It is 3 miles from the tower wall and 2 miles from the river, and there you see a section of the original plateau. I suppose the circumference of it would be 2½ or 3 miles, but there it stands in this flat region, this magnificent butte, rising up to a level of the plateau beyond. In other words, the whole plateau around it has been eroded to this flat plain, leaving this island in the center, and that's what makes it so impressive. All around its slopes it is similar to the outer wall of the Grand Canyon. I was tempted to name it; it deserves to be named; it would be a very simple thing for anybody to go in there, and possibly a good many would give it a name, but I do not believe, and I will make that suggestion here, that if that is made a national park, that magnificent butte should be named until the Indian name of it can be found. I heard a name for it, which was We-ke-le-la, but later I learned that was the generic Indian term for butte, and those who know Indians much better than I do assure me that the Hava Supi Indians have a special name for that mountain, and therefore I make this plea, and I hope it will be recorded, that when the butte is named it should be the Hava Supi name.

Now, this region has in its center a very good spring of water. Camping parties could go there with a great many horses and get abundant water. Usually scattered about this plateau are tinajas. There are tinajas in the side canyons, and in some of the rocks, which remain there for a long time. I was there, I think, in the latter part of November, and it had not rained for a long time, and there was abundant water everywhere. It is unfit for grazing and would support very few animals, but the Hava Supi Indians do have a few horses in there—5 or 10 horses here and there are grazing. Some of the striking features of it which you can not experience elsewhere in the Grand Canyon are the side canyons. From this plain you can ride a few miles to the main inner gorge of the Colorado River, and look down 3,000 feet and get a view of several miles of the river.

One night in the bright moonlight, which was so bright I intended to go out of the side canyon in the moonlight, which was a perfectly simple thing, but I had forgotten that one side of the canyon was in the shadow, and the only way I could approach the upper part, was in the shadow, which was utterly dark. So, I had to turn around and walk about 10 miles along the brink of the inner gorge of the canyon, to come up to another side canyon. I did not get back until

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early in the morning; but the glories and the wonders of walking right along the brink looking down about 3,000 feet upon that roaring river, with the moonlight glinting on the water and giving back coloration to the walls of the canyon, and the surrounding region, was almost as fascinating as anything I have ever experienced. But these side canyons are numerous. They are 3,000 feet or more perhaps near the mouth of the canyon. They are very narrow, and they extend back from 4 to 8 and 10 miles from the outer wall, and persons can walk along the brink of them and look down and see all the interesting formations and various things of extraordinary interest, of great interest, and roam about examining these canyons.

I had with me fortunately the type of the old Indian, a most lovable fellow, who was thoroughly familiar with the whole region, as I learned, and he told me of one long side canyon, about 8 or 9 miles long, which can be entered midway. You can reach the bottom of it, if an Indian shows you the trail. No white man knows it now. But in the bottom of that canyon a person can walk clear down to the river. Who can imagine a more interesting thing than to walk down a very narrow canyon until the walls inclose you very close, almost 3,000 feet above you, to the main river, at the bottom of the inner gorge of the canyon.

There are undoubtedly other canyons there where that can be done. Now, with this magnificent mountain, and with the possibilities, I think you can roam 20 or 30 or 40 miles on this plateau. These canyons are so narrow in places that they could be inexpensively bridged, and this whole region can be opened up as a recreation ground, as convenience and attendance and interest in the region as a canyon justify it in the future.

Now in this section there are, I was surprised to find, a great many mountain sheep, and I never felt more gratified in my life than to realize that those mountain sheep inhabit the inner gorge of the canyon. They inhabit the slopes of these side canyons, the tala slopes, and they live mostly in a region which is and always will be inaccessible to man. You can reach their feeding ground in small sections. Now, it could only be reached by having those Indians show you how to get down there, and only in one or two places can you get down where the sheep feed. And then when you get down there you go a short distance and you are shut off by a side canyon from proceeding further.

Now, man is never going to erect derricks to let people down several hundred feet for the sake of hunting mountain sheep, nor is he going to construct special trails to hunt and kill out these sheep. So, barring the dreaded enemy of western mountain sheep, domestic disease, I feel certain that this animal which we thought was going to be extinct very soon will be surviving in the Grand Canyon region many

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years after some of our other animals that we believe now to be abundant—the mule deer, for instance. I believe the sheep in the Grand Canyon will survive the mule deer of this country, unless extraordinary precautions are taken to preserve the mule deer. These sheep are at present killed frequently by the Indians. They keep perhaps the numbers in this immediate region somewhat thinned out, although I am glad to say that only the older Indians do it; the younger Indians who have been on the reservation and subjected to the influences of the reservation do not often attempt such an arduous trip as to kill the mountain sheep; and the old Indians will not survive much longer, and I doubt if there will be many Indian hunters who will kill the sheep.

Now this, in general, is the region that is under discussion as to whether it should be included in this park; and it is of the utmost importance that everybody interested in the Grand Canyon park should lend their influence to including it. The Hava Supi Canyon is not a grazing country. The region above could never be a grazing country, except to a most limited extent, and at present it is inaccessible. I suppose that sheep might be driven up there, but although they clean things up they would not find very much grazing in there; and the only reason why I am bringing this region to your attention is in the hope that everybody interested in that region will lend his influence to having the Cataract Canyon included.

Now, that is all I wish to say upon this subject, but I have for many years felt an extreme regret that one field of the Geological Survey has not been sufficiently regarded; and I am going to take this occasion to record it as a field of endeavor, effort, and achievement with which I am familiar—that is, the achievement of the Geological Survey in Alaska. The Geological Survey broke the way to Mount McKinley and called attention to the region through Mr. Brooks and Mr. Raeburn, the topographical engineer of that expedition, whom I see in the audience here. It was this exploration that led to that region becoming familiar, and it directly led to the conception of it being made a national park.

The work of the Geological Survey, their exploits, and their explorations are not recorded. Limited appropriations in Congress have permitted them merely to record an outline of their expeditions, and the cold, uninteresting to most people, geological facts and economic possibilities; but the difficulties that they have overcome, the remarkable explorations that they have made, and the remarkable work which they have done in their map making and surveying of the region—had they written books, or had it been described in detail, as we perhaps like to read books on travel, they would be marked as among the remarkable explorations in the world; and I hope that the time has come when the whole American public, when

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they hear of the Geological Survey going into a certain region, that they will not think it is an ordinary trip on horseback, which you can make on western plains, but they will realize that every expedition they have made into this country has been in itself a very remarkable and difficult exploration worthy of record, and practically most that we know about the interior of Alaska in its geological and topographical aspect was due to the Geological Survey.

THE PRESIDING OFFICER, DR. SMITH.

Of course, I want to express my keen appreciation of what Mr. Sheldon has said in this last passage of his very interesting address. While self-appreciation is a habit that is very easy to acquire. I think it is true of the men of the Geological Survey who have been out on the frontier that they have not acquired that habit to any large extent. It is very difficult to get any tales that have anything of the heroic in them, because these men who have worked in Alaska and in our Western States simply regard those adventures as part of the day's work.

I am glad that Mr. Sheldon made his appeal for the priority of Indian names. I think it was timely, especially as two members of the National Board of Geographic Names are fortunately present in this audience.

In speaking of the Rocky Mountain National Park, I neglected to mention the fact that the National Park Service have in preparation an interesting popular geological account of this region, the result of the work last summer of one of the Survey geologists, Mr. Willis T. Lee. That is the record of the past in the area, but of course there are problems of the present, administrative problems, and to-day we have, as one of our speakers, a gentleman who is the representative of the Interior Department in the Rocky Mountain National Park, Mr. L. Claude Way, who also has had experience in the Grand Canyon region as the representative of the Forest Service. Mr. Way will speak to us on practical problems.

MR. L. CLAUDE WAY.

PRACTICAL CANYON PROBLEMS.

Mr. Chairman, ladies and gentlemen, I recall the story of an Englishman, a remittance man, who visited the West. In telling of his experience on his return to England, he cited the following fact: He had been requested to ride a pitching horse. His friends asked him to tell them about it, which he endeavored to do by stating that they had asked him to ride the beast. He said: "I did not want to, but really they chaffed me so much that I could not refuse. We

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went to the corral. They threw a rope on the beast, adjusted the saddle, and signified that they were ready for me to mount. Now really I did not want to, but they chaffed me so much that I couldn't refuse. One man held him by the ears until I had climbed into the saddle. Whereupon one of the ruffians threw his hat under the beast, and the man holding his ears released him. Why, he bounded a while, and he up-ed a bit, and I just couldn't remain."

I can appreciate with what fear and reluctance the Englishman approached the horse. I approach this audience with as much fear and reluctance as the Englishman.

I was stationed at the Grand Canyon under the Department of Agriculture in the Forest Service for three years. Mr. Harvey has stated that in 1915 the registered visitors at the canyon were 116,000. Hundreds of people who were not registered visited the Grand Canyon during that year. Our estimates are that 150,000 people visited the Grand Canyon in 1915. I believe that I am safe in saying that a large number of people left the Grand Canyon and condemned the United States Government for conditions as they existed at that time.

That is a broad statement, but I make it in all sincerity, since I was in a position to know. It was my place to hear the many complaints of the visitors; some who had traveled thousands of miles, in many cases from abroad, to see this greatest of all of nature's wonders.

The Grand Canyon National Monument is at the present time under the jurisdiction of the Department of Agriculture, Forest Service, which is not to blame for this condition, for the reason that the act creating national forests does not give authority to the Forest Service to regulate personal conduct. It only grants authority to cancel a permit. A man attempted to come in with a team consisting of one burro and a horse and a carriage that had been consigned to the scrap pile years ago and purchased for perhaps 4 or 6 bits. That man thought that he could go to the Grand Canyon with such an outfit, take tourists over the trails, and make a fortune.

Now, the cancellation of the permits to this class of men means nothing whatsoever. He simply moves along when his permit is canceled, which I did in every case, but it was a case of locking the barn after the horse had been stolen. During the rush days we had not sufficient equipment to take care of the many visitors. I have seen tourists who were compelled to pay $10 per head for a trip for which the average and reasonable charge was $3. The injustice of it. Merely because there was not sufficent accommodation, they had to pay $10 to the "fly-by-night" liverymen, where the reliable, responsible liverymen at the Grand Canyon were taking the people for $3.

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The next problem that we had to contend with was the mining claim problem. There have been several examinations made of this region by the Geological Survey. In the spring of 1915, 17 so-called mining claims were examined by expert geologists. The greatest amount found from the assay was, if I am not mistaken, one-tenth of 1 per cent copper in a ton of ore. It was claimed that gold, silver, platinum, and copper could be found in that region. As Charles Van Loan in an article in the Saturday Evening Post, brings out, in almost every case, the essays read "gold, none; silver, trace; copper, none: platinum, none," which proves, I think, that this can not be considered mineral land; therefore, not subject to location under the mineral laws of the United States.

At the Indian gardens they have mill-site locations on top of mill-site locations. We have lode locations on top of the lode locations. We have placer locations and mining locations, three deep in one spot. It is significant that every strategical spot from a tourist standpoint within a day's ride or drive of the Grand Canyon termini of the railroad is covered by mining locations, all controlled by one man. For instance, to the east of the El Tovar Hotel and the railroad station grounds, the first claim which adjoins the railroad station grounds is named "The Butt-in-sky," which was very appropriate. Following the rim of the Grand Canyon we have five additional claims overlapping the rim of the Grand Canyon; lode claims which are supposed to follow a lode or a vein. This condition extends to what is known as Yavapai Point. It was the desire of the Forest Service to build a footpath along the rim of the Grand Canyon for the convenience of visitors. The rocks are so sharp along this rim that I have seen women return from this trip of 1¼ miles with their shoes literally torn from their feet.

At the west of the railroad station grounds we have two claims which have been canceled by the Secretary of the Interior and restored to the Grand Canyon National Monument. Still, the locator retains possession of these two claims and blocks any development that we desire to make.

The next point is Hopi Point, also known as Sunset Point, that is perhaps visited by more people than any other point at the Grand Canyon, since here you get a magnificent view both up and down the river. In the construction of the road mentioned by Mr. Harvey they reached Hopi Point. Here they were stopped by an injunction, which restrained them from proceeding with the road. As a result, during the wet season of the year, carriages sank to their hubs. We start next down the Bright Angel Trail to the Colorado River. From the rim of the Grand Canyon to the Colorado River there is a string of lode claims covering every foot of the ground. Every foot of the plateau under the El Tovar Hotel is covered by mining

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claims. In fact, if I remember correctly, there are something like 225 locations in this neighborhood, all controlled by one man.

At Hermit Creek we have the same condition—three placer claims extending for a mile and a half up and down the Hermit Creek. We desired to build a camp for the convenience of tourists. The ground was laid out. An injunction was secured restraining the men from building, because we were on the mining claim. We desired to run a pipe line across the claim to Hermit Camp from Hermit Creek. This could not be done because of the injunction before mentioned. So our only means of getting water from the creek to the camp is by packing it on the backs of burros.

As I have stated before, the Forest Service is not to blame for this condition, because it has not adequate authority under the act creating national forests to enforce necessary and adequate regulations to handle the situation. On the other hand, by the creation of a national park at the Grand Canyon, these conditions will be eliminated, the act creating the Parks Bureau gives authority to the Secretary of the Interior to draw up and enforce regulations, and I may say, in conclusion, that the Forest Service is just as anxious to have this made a national park as the National Park Service is, every bit. I thank you.

THE PRESIDING OFFICER, DR. SMITH.

I think Mr. Way has presented to us the practical problems connected with the efforts of the United States Government to serve and protect the traveling public. As one interested in the mineral development of the country, I can only add to what he has said that, as I know it, all that is lacking in the making of El Tovar an important mining center is the absolute absence of ore.

There are two announcements that I have been asked to make; one that any speaker at a previous meeting who has not given to the stenographer any written material, or especially any printed material, to which he has made reference, such as poems, etc., will please see that they are handed to the shorthand reporter. For myself I do not quote any poems, so I have no poems to pass in, but anyone who has any such material will please assist by giving this material to the stenographer. I call your attention to this afternoon's program on the Greater Sequoia, concerning which it is hoped that Congressman Gillett, who himself knows of the attractions of that region, and other speakers who have been there and enjoyed and come away loving the region, will address this conference.

(Whereupon the Saturday morning session was adjourned.)

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SATURDAY, JANUARY 19—AFTERNOON SESSION.

SUBJECT, "THE GREATER SEQUOIA."

The Saturday afternoon session was convened at 2.29 o'clock, with Assistant Secretary to the Secretary of the Interior presiding.

THE PRESIDING OFFICER, MR. MATHER.

The topic for this afternoon, as you probably noticed from the program, is "The greater Sequoia." Those of you who attended the lecture the other night at which Mr. Gleason spoke and showed his beautiful pictures got a glimpse of some of that greater Sequoia country. The Sequoia National Park as it exists to-day is relatively small. The plan for the greater Sequoia includes the Kings River country, the South Fork of the Kings, and the Kern River country to the south; it extends eastward to the summit of the Sierra Nevada.

Before the speaking begins, I shall ask the operator to throw the map of the greater Sequoia on the screen. Perhaps it is not available. If not, we will have it a little later, and I will ask you to keep in mind the various points that are brought out by the speakers, and when the map is thrown on I think you will be able to locate the different points that are indicated.

The Sequoia National Park lies about 150 miles south of the Yosemite National Park, in the Sierra Nevada. I generally identify it that way, as most people who have not been in California do not sense its exact location. In the summer of 1915 a party made a trip from Visalia to the wonderful Giant Forest, which is the heart of the present Sequoia Park, and from there through the Kern River country to the summit of Mount Whitney and over into the Owens River country beyond.

One of the most active members of that party, living out in the open with us for a period of two weeks, sleeping on the ground as all of us did, was one of the most distinguished Representatives in the Lower House, Representative Frederick H. Gillett, of Massachusetts. Congressman Gillett has kindly offered to come here to-day and say a few words to us from his viewpoint as to the value of a greater Sequoia National Park—particularly in its bearing on the country which he was able to observe for himself.

I want to say right here that we owe a great deal of consideration to Congressman Gillett for the part that he has played in assisting toward securing appropriations for parks like the Yosemite and the Sequoia. I feel sure that this item of $50,000 which was secured last summer toward the purchase of the private holdings in the Giant Forest would not have been secured had it not been for the earnest

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support that Congressman Gillett gave it in the conference between the Senate and the House. It is work like that which really brings the results.

The statement is made, of course, that Congress has given this money, but when it comes right down to the fact, it is the interest of one or two men like Congressmen Gillett that actually produces the results. I have great pleasure in introducing to you Representative Frederick H. Gillett, of Massachusetts.

HON. FREDERICK H. GILLETT, REPRESENTATIVE FROM MASSACHUSETTS.

THE PROBLEM OF THE GREATER SEQUOIA.

Mr. Chairman, ladies, and gentlemen, I have run away for a few minutes from my duties at the Capitol, and from the general way those duties are looked upon by the country, I do not suppose you will think that is much of a sacrifice. But what is more important, I have left a hard-working committee. But I could not refuse the request of Mr. Mather to say a few words about the Sequoia Park, because it was entirely due to his generous hospitality that I was introduced to its wonders and imbued with some of the enthusiasm for the development of all our national parks which he has shown so characteristically since he has been in office. He thought, I suppose, that it was well that the Sequoia, which is rather the least known of all the parks, should be better known by the public, and so a year ago last summer he invited a party of about 15 as his guests to go through the park. He picked out men of success in various lines of life, scientists, literary men, editors, and I was the lone Congressman; and I had the most superb vacation which it has ever been my good luck to enjoy, and it is certainly a very small repayment of it for me to comply with his request to-day.

I presume most of you know that the Sequoia Park is situated in southern California. It is at the lower end of our most picturesque range of mountains, the Sierras, and it is just where they swell into their boldest forms and attain their highest altitudes, because right at the edge—not in the park but at its edge—is Mount Whitney, the highest mountain in the United States proper. It is rather singular that we have a number of mountains more than 14,000 feet high, but Mount Whitney is the only one of them that reaches 14,500 feet. There are Rainier and Shasta and Pikes Peak and several others just above 14,000, but Mount Whitney soars a little above them all, although, because it is in a southern latitude, I suppose, it does not begin to be as impressive as mountains like Shasta and Rainier, which are always covered with snow and ice.

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We entered the park from Visalia, in southern California, by an auto ride of about 60 miles over tolerable roads, not much like our Washington boulevards, but very comfortable.

The first night we camped in the Giant Forest, 5,000 feet above the sea. I selected for my bed a spot beside the trunk of a tree some 30 feet in diameter, and after I was wrapped in my blankets looked up through branches 150 feet above me at the stars and they never before looked to me so bright and numerous. This is incomparably the most magnificent forest in existence. The groves of big trees which lie on both the north and south sides of the Yosemite are of the same species and about the same size, but in each of those groves there are but a few trees and they are all full grown. They seem to be relics of another era. But here are thousands of trees of all sizes and ages. There are sturdy infants from 5 to 100 years old; boys and girls 1,000 years old; and there are plenty of magnificent specimens of the mature adult 4,000 or 5,000 years old, 30 to 40 feet in diameter, and 200 feet high. And yet, wonderful as are all these giants, surpassing so far in size anything else that grows that you never lose a feeling of awe as you look at them, I am not sure that they are as beautiful as the superb sugar pines which grow in this same region to a circumference of 40 to 50 feet at the base, and then taper upward in perfect symmetry of trunk and branches to a height of 300 feet. They lack the size of their stupendous neighbors, but they surpass them in height and erectness and grace of form. The whole forest, miles in extent, is full of prodigies which never cease to excite your wonder.

During our two weeks in the mountains we traversed some of the most glorious scenery in the United States or any other country. The valley of the Kern alone presents in its 30 miles a combination of the beauties of the Yosemite and Yellowstone Canyons, though perhaps it has no one spot as fine as either. There was an endless variety of mountain and valley and stream and lake, culminating in the ascent of Mount Whitney, the highest mountain in the United States, though it has not the snow and glaciers of lower mountains farther north, and so is easier to climb and is less impressive.

On the last morning we were waked an hour earlier than usual, shivered through breakfast, and left camp shortly after 5 o'clock, with water frozen in the pails, and after five hours of steady and sharp descent, found ourselves out of the mountains with the mercury at 100 in the shade. From there we took a most wonderful auto ride of 100 miles, first up Owen Valley, which is about 10 miles wide, and has the lofty and serrated Sierra on the west, and the equally picturesque and precipitous though somewhat lower White Mountain chain on the east. After about 50 miles the White Mountains lost their regularity, but the Sierra still apparently for-

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bade all passage to the west. Finally, however, we plunged into them up the narrow valley of the Leevining River, where a daring road has been built along the sides of the mountains following the windings of the stream and climbing upward by zigzags and curves blasted out of the sides of the rock, till at last we found ourselves once more on the summit of the Sierra just behind the Yosemite Valley.

I came home in love with California. The climate of the southern part of the State seems to me the nearest approach to perfection I have ever heard of outside of Eden, and its picturesque mountains and valleys offer a playground which can satisfy the vacation longings of the whole United States. It exasperates me to think of the hundreds of millions we spent annually in Switzerland when nature offers in our own West all the beauties of Europe, though we have not made the roads as smooth or the hotels as comfortable. I can think of no more interesting or patriotic project for one of our public-spirited multimillionaires who is looking for a beneficent way to invest his earnings than to develop a series of fine hotels in our scenic west connected by paved roads. While I do not believe they would be profitable at first, I think they might ultimately, and they would at any rate extend a knowledge and an enthusiasm for our country, besides the more practical benefit of keeping travelers here instead of in Europe.

These mountains and valleys are of little practical value to-day. Tracts are used for grazing and there is, of course, a vast amount of timber, but most of it too inaccessible at present to be of any value, and it seems to me Sequoia Park ought to be greatly enlarged. The whole region of the King Valley and the Kern Valley and Mount Whitney ought to be embraced in the park. Their acquisition ought not to cost much now and 100 years hence they would be of enormous value and enjoyment to the people of this continent.

Congress last year appropriated $50,000 for rounding out the Forest of the Great Trees, and the National Geographic Society generously contributed $20.000 to complete the purchase, so that the Government now owns all of that wonderful forest; but the whole region, with its marvelous scenery and picturesqueness, ought to be preserved as a perpetual camping ground for the people of the United States.

The PRESIDING OFFICER, Mr. MATHER.

I wish we could only have all the Members of Congress, both the Senators and Representatives, as interested as Mr. Gillett; it was that intimate acquaintance, that intimate knowledge that he has had first-hand with the parks which has made him such an enthusiast.

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Of course, we must not blame him too much for preferring Sequoia to the other parks. He saw Sequoia in a way that he did not see the other parks, and got that knowledge of it which has made him so fond of it.

It is a great thing to have a man from the East take this deep interest in our wonderful scenery of the West. Really I sometimes think that when an eastern man like Mr. Gillett comes out there to the West he gets an inspiration that perhaps those of us who have lived in the West all our lives, or a great part of our lives, do not get directly ourselves. I have seen so often the tremendous enthusiasm that has been aroused by the western scenery in eastern people. They become really appreciative when they once get out and live with it in the way that you have just heard Mr. Gillett explain.

I was very much interested in his suggestion that perhaps some millionaires might be found who would put up the money for the necessary hotels and camps, so that we could have the creature comfort which ought to go with the proper enjoyment of scenery. The great trouble is that it is very hard to find the right kind of person or company to go in and make the developments which must be made in these parks. We have it in a measure now worked out in Yosemite and in Rainier, as well of course as in Glacier and in Yellowstone. But these newer parks, parks like the Sequoia, are a little too far perhaps from the centers of civilization for the hotel builder to get interested in making the proper development.

We see in some of our southern resorts beautiful hostelries which are really monuments to the men who put them up, and which in a way take care of a relatively small number of people. How much finer monument could be built by those same men themselves if they would only consider the possibilities of the construction of comfortable camps! And at far less expense, too, than some of these splendid buildings that have been put up in the fashionable resorts! How much larger returns would they be able to make for themselves in the service that they could give to the American people! I feel that the good time is coming. As men and women become inspired with the value of the parks we shall have just that type of men presenting themselves; not necessarily looking for the returns that are in it, but for the enjoyment that they will get out of serving the people.

I think perhaps the railroads have made the largest development in connection with providing the parks with proper accommodations. Of course, we all know what was done by the Northern Pacific in starting a development in Yellowstone which was afterwards turned over to other men, but in which the railroad has always had considerable interest. Probably the most remarkable evidence of what the railroads thought they could do through auxiliary companies has been seen in the Glacier National Park, where the Hill interests have

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done and are doing a very large, a very splendid piece of work—one that will not have any direct pecuniary return except as it greatly builds up business for the railroad company itself.

We have not had at this conference a word from the railroad man direct, one of those who have been in the forefront of developing traffic for their companies. We are fortunate this afternoon in having a man here, the vice president in charge of traffic of one of the great railroad systems of the country, who has given in the last few years a great deal of attention to the development of business with special reference to the national parks to which his own road is tributary. I refer to Mr. E. O. McCormick, vice president of the Southern Pacific Co. His railroad serves all our national parks that are located on the Pacific slope—Mount Rainier, Crater Lake, Yosemite, and Sequoia. It was my privilege a year ago last summer to accompany Mr. McCormick to all of those four parks. He had not really seen them before that time, and I think he got an inspiration from that trip, which has been of great assistance.

I know that we have been greatly assisted in our work here in the department by the zealous way in which he has followed up other railroad men, convincing them that they should do their part. His sinking the question of his own railroad's point of view and looking at it from the broader standpoint of the whole transportation requirements has been very helpful to us indeed. Mr. McCormick knows the Sequoia Park and its proposed extension just as thoroughly as does Representative Gillett, because he was a member of the same party; and while I would like to have a word from him on what he thinks of the greater Sequoia, which is our topic to-day, I want to hear from him from that larger point of view of the railroad company's and the railroad man's interests in the development of our national parks.

Mr. E. O. McCormick, Vice President of the Southern Pacific Company.

THE NATIONAL PARKS FROM THE RAILROAD POINT OF VIEW.

Mr. Chairman, ladies, and gentlemen, I was with Mr. Gillett the night that he took off the "clothes" of a perfect day. Having been through that country some time before, I suggested to him that in so frigid an atmosphere we need not take off everything, and that he need only prepare himself for bed just as he did at home. But you know what a chance you have of impressing a Congressman of the United States with anything, and he proceeded to do exactly as he pleased! It took all the coverings of our whole camp to make him comfortable along toward early in the morning!

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Fortunately, we had been provided by Lady Bountiful—Mr. Mather—with almost everything that we needed, so we had plenty of covering.

I am not on the regular program; it is dangerous to put me on for a talk when the subject is the big things of nature.

The only government that I know of where they have been properly convinced that their scenery could be made available as an asset or capitalized as they ought to capitalize it is Switzerland. They get large returns for the money that they have expended in little Swiss chalets and a provender of good soup and hot biscuit and honey—and that is all you get from the Swiss people that I have ever known. The Lord did the rest. And they took advantage of what He did; they have made much of it; they have made a whole lot out of it.

Now California, you know, is the American Switzerland. They say that a native son grabs off everything—so we are going to do just exactly that same thing, and we are going to do it as long as we can. California claims the best fruit, the sunniest skies, and the most beautiful scenery of any State in the Union. But there's scenery north of California, too. Our starting point, as Mr. Gillett said, is the north. There is Mount Rainier. Think of standing on a glacier which, according to statistics, has more ice in it than all the glaciers in the Swiss and Italian Alps. I do not mean that there is more ice and snow in that immediate vicinity than all the Alps possess; but there is more ice in that particular glacier than they have over there in all of their glaciers.

Then you go down to Mount Hood—and shortly you will be able to leave Portland, Oreg., in the morning at 7.30 and go 280 miles and be back there in the evening, having seen the Columbia Highway and Mount Hood and all that is tributary to it.

And then you come to Crater Lake, and so on down to the Yosemite, the Kings, and the Kern, and the magnificent Tehipite Valley—which I had the pleasure of passing through last year, again the member of a party got together by Mr. Mather—which is as big as six Yosemites, not as beautiful but of tremendous importance.

And then down around to Mesa Verde, which I visited the other day, where, lying there open to your touch, to your very hand, to your picking up, are evidences of a civilization that was old when Cleopatra was young. It is the oldest country known. There you will find pieces of ancient pottery and sometimes household utensils and implements made of stone and saws that will saw the hardest wood, and hatchets that will put nails or bolts through them if you choose to use them; and there one may see rooms that were fashioned by the hand of architects who knew how to make them attractive and safe from the depredations of surrounding tribes.

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And, moving on just a little bit to the cliff dwellings, we may guess how old those dwellings are. We do not know; we have not discovered, but there are evidences there of a very advanced civilization. There remain the evidences of old irrigation ditches, and in some places the remains of men smaller but similar to our own race. These cliff dwellings are within 4 miles easy walking distance of an automobile road that leads up there to that wonderful work of man—and all you have to do is to get off at a railroad station, take an automobile, and join on your ticket at another railroad station; and meantime see those things which people have journeyed so much farther to see in foreign countries and then not seen so much.

And then you begin to realize that you do not know your America. And we never would have known our America, never would have got acquainted with it, had it not been for the awful happenings which I try to forget are going on abroad, happenings which form the only deterrent to Europe making further money out of Americans. Meantime, let us see what we can of our own antiquities which are doubly discounted as to beauty and grandeur. I do not refer now to the cathedral country of England, nor to the chateau country of France. They have their interests. But we have our mission country, which is equally as interesting and entertaining, and we have these big trees that were spoken of a moment ago, that were thousands of years old, as Prof. David Starr Jordan and John Muir say, when our Saviour was born.

One tree that we stood under last summer you could plant by the Flatiron Building in New York and it would rise 114 feet higher than that building. You could run side by side two lines of street cars and a carriageway through it. Now you won't believe it if any of you have not seen it. Well, I may just tell you that I came from California! But we do not make matches out of those trees, either. But for a moment just let your mind revert to the size of your dining room or living room at home—a good-sized dining or living room might be 25 by 25 or 20 by 20. Now, if you will assume a room 31 by 31, that would be only 93 feet in circumference, if it were a tree. Then imagine one—and that's the largest known—39 by 39; and there is a tree in California so big that if planted in that room it would touch on all sides.

You can not comprehend it, you can not conceive of it. I have the most absolute faith in the woman I love best, but some idiots got me out there to take the end of a tape and got her to take the other end; they had us walk around this tree until we met in order to see how great the circumference of the tree was. And ever since that time any statement of mine does not go! And I have not the

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slightest confidence in anything the family says! I know they put a job up on me, and she knows I put up one on her. But if it is true that 109 feet is the distance that it took to go around this tree, my talk would be 109 feet long, if they did not stop me, because I am chuck full of it.

We live in a State over there which contains the highest point in the United States and the lowest inhabited point in the United States, 286 feet below the level of the sea.

You can grow everything that is known in the world in California from hickory wood to tea and coffee, from the plantain to the eidelweiss or snow flower. About the only thing that does not come to fruition is the banana, but it flourishes there, only it will not fruit as it should. Fruit ripens in the northern part of that State sooner than in other parts of the State.

There is more hot weather in California than anywhere else in the United States, and there was more hot air there until I came away. There is one spring in my State that throws more water through one pipe than all that our Government owns at Hot Springs, Ark.; and we own enough there to serve the needs of the people. So you get some idea of that country. It is volcanic, and it certainly does raise hell sometimes. It did when it destroyed San Francisco—and yet, if you go out there again there is San Francisco bigger and prouder and better and more competent than ever.

In closing and in thanking you for giving me these few moments, because I was not on the program and I am here unexpectedly, I want to say one word on the subject which Mr. Mather has so deeply at heart. It is necessarily transportation. Now you may have all the diamonds and feathers and jewelry and luxuries in the world, and if you do not have transportation they are not worth anything. They are worth nothing more than the personal adornment of the Indians, or what you could consume yourself. Without transportation a greater curiosity than has been touched on here to-day, Mammoth Cave, Ky., has lain dormant. No one knows what we have there—a hole in the ground where you may walk for eleven hours and not retrace your steps or recross your paths; 55 miles of underground passage in that one cave, and still undeveloped; and yet the people do not know anything about it. Transportation is at fault there. I do not mean railroad transportation.

The State of California last year spent $18,000,000 in highways and will spend over $15,000,000 this year in highways. They are spending their money on good roads to let the people go and see the Yosemite. The automobile will be a favorite method of transportation to all of these parks if Mr. Mather and the gentlemen who are working with him have their way. The railroads, all of them, will and have done their part. The line that leads to the Grand

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Canyon has certainly done its part by building nine miles of road costing $300,000.

The Santa Fe did a wonderful thing to get people up there in the country, far more than the Government has done as yet to make them comfortable or safe after they get there. The Apache Trail, which is going to lead from Roosevelt Dam to Phoenix, Ariz., opens up one canyon that I have stood on the brink of that is 40 miles straight across. That is three times as wide as the Grand Canyon. It has not the beauty of architecture or coloring of the Grand Canyon, any more than Tehipite has the beauty and the color of the Yosemite, but it is going to be the most tremendously interesting thing outside of the Grand Canyon, I believe. And it took a firm of tourist guides to discover it! They forced it on the public.

There must be better roads to the Giant Forest and Sequoia. The Yosemite roads are good. Crater Lake is becoming improved. Roads and the transportation problem constitute one of the greatest problems that the people have to deal with.

The company that I represent proposes to do all it can in the matter of good roads, both of steel and of gravel and concrete; and I know it is in the mind of the other railroads to do the same thing.

I want to say that the present administration—Mr. Franklin K. Lane, Mr. Mather, our friends in Congress, and the people with whom they are associated—represent the country in a way that will certainly result in success for the national parks system. It is they who will have to take these matters in charge and make available these beauty spots for you, whether by railroad or just good roads, aided and abetted by such men as the Interior Department and the Forestry people have up there. You will succeed, and then we will in the main have what Switzerland has had for so many years, and what Spain has just determined to have by appointing a personal friend of the King of Spain to bring about better roads and better hostelries, so as to make Spain's beauty spots reachable.

I bespeak for the support of these men the heartiest sort of work on the part of every man, woman, and child, from the school child to the college student, and the warm indorsement of their plans. When you hear of $50,000 from Congress for the maintenance of the security of one of these things, the Giant Forest, think of the infinitesimal amount it is compared with the other expenditures that are being made all over the country by private individuals! Yes, and by the Government in other directions. Why, it is but little more than the price to-day—in fact, it is less than the price—of two Pullman sleepers; it is about equal to the price of two first-class coaches. So do not become alarmed when $50,000 is mentioned as an endowment from the Government. The twenty thousand given by the Geographic Society for the same purpose is twenty times,

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one hundred times more than fifty thousand Government dollars. Go out and see us and stop at these places as you go along, and then I probably will tell you, as the Italian man said the other day, "Why, Italy has not anything compared to the Italian quarter of San Francisco."

THE PRESIDING OFFICER, MR. MATHER.

Of course, Mr. McCormick had to get in a good word for California. I knew he would do that, but I think we will forgive him in view of what he has done in that State. It is an inspiration to have a man of his type so deeply interested in all of our national parks projects.

I am going to throw on the screen here a map of the Greater Sequoia, so that you will get a glimpse of it for a minute.

(The map was thereupon thrown on the screen and described by the presiding officer.)

I want to say for the benefit of the children who are coming in that those bear stories that have been promised them will come at half past 4 as planned. Mr. Mills will tell some of his inimitable bear stories at that time, so, if they will possess themselves in patience, they will be sure to have their treat. I would like to remind those who do not know of it of the interesting collections on either side of the corridor as they go out, the scenes depicted by photographs and other pictures of the different parks; and, if you are out before the gallery closes upstairs, you will have a chance to see that wonderful exhibition of canvases by painters from different parts of the country, which is so well worth looking at. I am going to ask Mr. Enos Mills to say something to us now on a topic which I see is indicated here as "Perhaps our greatest national park." Mr. Mills.

MR. ENOS MILLS.

PERHAPS OUR GREATEST NATIONAL PARK.

Mr. Chairman, ladies and gentlemen, it is a profound pleasure to say a few words, and I shall speak but briefly concerning the Greater Sequoia Park, perhaps our greatest national park. The speakers who have preceded me have given you some idea of it. Those who follow me will give you still other ideas of it. So I shall try to be brief. When it comes to a variety of scenes in one locality, scenes which embrace, you might say, almost every class of outdoor beauty, you will find them in the region proposed for the Greater Sequoia National Park.

Three years ago, in addressing an audience concerning national parks, I had been describing all the places that are national parks,

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and some that I thought should be, some one in the audience asked me this unusual question: "Mr. Mills, if you were sentenced to serve the rest of your life in one of the national parks, which one would you select?" Without the slightest hesitation I said, "The Sequoia National Park." Of course, the supreme attractions in that park are the big trees. Let us notice this park region at the present time. The Sequoia National Park embraces about 265 square miles. The proposed park would include an area of 1,600 square miles; the region included would be one which you would classify as a scenic one. You have been hearing a great deal about land classification. Land has been classified as agricultural, forest, mineral, or high land, and all that sort of thing; but from now on, ladies and gentlemen, it is time to make a higher classification—that is, a scenic classification of land—because from scenery we get the greatest benefits to mankind; and, after all, scenic land has higher value if used for the benefit of men, women, and children than any other land known.

This region of 1,600 square miles lies at the southern end of the Sierras, approximately 100 miles north of Los Angeles. All of you have heard of the Death Valley. In a straight line about 70 miles from the Death Valley is Mount Whitney. It is an interesting fact that the lowest point in the United States should be within 70 miles of the highest point; that the lowest point, the Death Valley, which is not a very poetical looking place, did not look to me, when I was there as a young man, as though it was a good place in which to grow up with the country. At any rate, move just a short distance westward from Death Valley and you get a very radical change, not so much of latitude as differences. It seemed to when I first visited the Sequoia Park region that all of the great wonders of the world had been piled in that locality. Incidentally, I may say that as a boy, wandering in the wilds because I enjoyed it, one September evening, I found myself in the Giant Forest in the Sequoia National Park. This was just about at the time it was made a national park, in 1890, and although I have stood in many wonderful places, although I have looked upon the high central peaks in Alaska as they rise above the white clouds, although I have stood by that brilliantly colored canyon in the Yellowstone and looked upon the wonderful scenes in Mount Rainier, yet never, any place, have I stood where I felt so a part of the Infinite as I felt when I stood in the Giant Forest in the Sequoia National Park.

In this park, as I have already said, was a great range of attractions. First of all there is the high peak, Mount Whitney, 14,501 feet high. Now there are in the United States more than 100 peaks that are above 14,000 feet, but only one that rises above 14,500. There you have a high peak. Then in this same region you have the Kings and Kern Canyons, unrivaled in the world as canyons of their kind. And then, best of all, are these big trees.

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A tree is the best friend that a man has. The human race, all the way from cave to college, has been benefited by the trees in the United States, but in this park the trees attain their highest developments. A tree lives longer and grows larger than any other living thing. In this park as it now stands, there are about 1,000,000 big trees. Some of them are of simply stupendous size. This park, if extended, will of course include the General Grant National Park, in which stands the largest tree in the world, the General Sherman, a tree old certainly, known in story, probably 6,000 years of age. I wonder if the boys and girls in the room at the present time have ever stopped to think that the tree has to stand in one place all of its life, although it may live hundreds and thousands of years. A little tree may start to grow; it grows a few inches, then it grows a few inches more; then a few feet more. But in the spring and summer and winter there it stands in one place. In its top the birds nest and sing; around it animals live and play. As a matter of fact a forest springs up around the tree. The tree watches the ever-changing struggle for existence. Our animals fight and frolic, live and love. It is one of the strangest places in all the world. For what a long, long time this splendid big tree, the General Sherman, has witnessed through the centuries, and let us hope it will still witness there for centuries yet to come.

There are the higher mountains, and streams and canyons, and then there are many beautiful lakes in this region. The ice king, who chiseled California on such a magnificent scale, did some of his best and grandest work. He chiseled the canyon, the peaks, the lakes, and gave to this park region many of its flowing lines and beauty. Within this proposed park you will find as interesting a glacier record as you will find any place on earth. As the great John Muir has pointed out, the Sequoia forests are growing in those places which were first laid bare by the ice at the close of the great ice period. Here in many ways you will find an ever-interesting story of nature in this Sequoia Park.

In the streams you will find fish. Let us remember that in this region the golden trout originated. Within this park there are the mountain sheep, there are bear and deer. There are many kinds of birds, and then, too, there is an exceeding wealth and variety of wild flowers, and then over all, and ever with it is a climate equal to any in the world.

This region, with its varied beauty and size, is, I believe, the greatest in all the world. Why it would be a disgrace to civilization, ladies and gentlemen, if we let it be destroyed. We ought to save it for our better selves and our greater Nation, and we shall save it.

There used to be a race of people in Africa called the Hottentots. They have been forgotten. The Hottentots had a strange idea.

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They considered that a woman was not beautiful until she had both cheeks scarred and her front teeth knocked out! I sometimes think that pioneer people—not all of them—are so forgetful of the beauty of their country that they consider it is not beautiful until it is all scarred and its front teeth knocked out. Many years ago that genius, Horace Greeley, went West, and he almost typified the typical pioneer. When he arrived by one of those big trees it did not seem to appeal to his imagination at all. As a matter of fact, too often people do not have imagination. But at any rate Horace Greeley, instead of thinking of the wonders it might look upon and had looked upon, simply walked up to it, pulled out a pencil and paper and figured how much lumber could be obtained from it.

Ladies and gentlemen, we have passed too many milestones to figure how many feet of lumber may be obtained from one of these big trees. We had just as well think of how many paving stones could be obtained by tearing down the Congressional Library.

So let us hope and believe from now on we will appreciate the value of scenery and its benefit to mankind, and that appreciating it we shall preserve it.

Now, briefly to restate the points that I have tried to make: The region enlarged would include scenery land; that would be its best classification. Used scenically, it will give it a very high economic value, and still higher values which you can not measure by gold. Within this region are extensive areas of such lands. They will be lost to the public, I fear, if the region is not made a national park, because California may sell or lease this land to private individuals and thus cut the park all up, if the making of the national park is delayed.

So this in turn urges us forward in making this region a park. Is there any reasonable objection to making this a national park? Absolutely none that I know of. So if you are in favor of it I hope you will tell your children about the Sequoia National Park region. I hope you will tell your neighbors; I hope you will tell everyone that one of the great duties of everyone, and it ought to be a pleasure, is to help bring about the creation of the greater Sequoia National Park, or, to use the words of John Muir, "national parks should give glory to the country, and our national parks should make our country the glory of the world." I thank you.

THE PRESIDING OFFICER, MR. MATHER.

There is a man here who has been to the top of Mount Whitney, and who, when he stood on one of the great passes on his way, took a long breath and said it was one of the most wonderful sights he had ever seen in his experience, and he has seen a great many the

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world over. I am going to ask Mr. Emerson Hough to speak on the subject, "The Top of America—Mount Whitney."

MR. EMERSON HOUGH.

THE TOP OF AMERICA—MOUNT WHITNEY.

Mr. Chairman, ladies and gentlemen. I know how Mr. Mather must feel upon being called to introduce one more speaker—even almost the last one; in these closing hours of the conference he just naturally hates to do it! He is like the Lord Mayor of London, who was presiding at a banquet which was attended by a number of certain prosy personages like myself, and along late in the evening, at the time when the walnuts and wine were doing their work and everybody was happy, leaned over to his coming orator and said: "My Lord, shall I introduce you now, or shall we just let the ladies and gentlemen enjoy themselves a little while longer?" We have certainly been enjoying ourselves here this week, and up to this time I have been enjoying myself. I like to hear that dear gentleman, Congressman Gillette, and would much rather listen to him than to listen to myself, and I like to hear that prince of all good people, Mr. McCormick, and Enos Mills, whom we all know and love. We were enjoying ourselves, and I am sorry to disturb the enjoyment.

It is quite a credit, gentlemen, to have a place on this program of specialists and scientists. I can only claim a place there on the ground of being a scientist myself. At one time in my earliest youth I was a scientist. I was engaged in astrology in combination with astronomy, and was instituting certain researches as to the relative speeds of objects traversing elliptical orbits; that is to say, I was studying the relative speeds of running horses. And sometimes I had even to predicate something, or perhaps to hypothecate something, to confirm my own judgment in the matter, and I was disposed upon occasions to take counsel with the powers of another scientist, whom we knew by the name of little Sam, a little darkey about this high [indicating]—the seventh son of a seventh son, and also an astrologist who knew, or professed to know, everything about the relative speed of objects traversing elliptical orbits. Little Sam came to me one day with his eyes hanging out on his face, and he said: "Boss, if you all and me just had a hunnerd an' fifty dollahs, knowin' what I does about a suhtin hoss wot's gwine to run dis Sat'day at noon, we all could make all de money dere is in de whole worl'. Of course, de odder people might habe *some* money, but it would be on'y wat we seed fit to give 'em; fo', Marse Boss, aftah dat race we'd hab all de money dere *wuz!*"

I said, "Sam, tell me about this horse"; and he said, "I'se kaint tell yo' much about dis heah hoss, 'cept he's gwine to come in at least

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a half mile ahead ob all de odder hosses. Of co's it may be moh dan dat, but I'se a consuhtiv, Boss, and I sez at least a half mile." He said, "Its all ovah, Boss, 'cept the fohmahlties."

I regret to state on this occasion that something seemed to go wrong with the aforesaid "fohmahlties," because at the conclusion of our scientific researches after that Saturday our "hoss" was far from coming in a half mile ahead of the other horses.

To be perfectly truthful, it came in about that distance behind the rest of the string. Whereupon I reproached Sam very bitterly for his lack of scientific wisdom. I recall now with sadness that I did not myself eat for about a week after this occurrence, and I am not sure that Sam did either. I felt that it was necessary to reproach Samuel for his part in the episode, and Sam replied, "Ah kaint un'stan 'bout dat hoss; but at least you hab to admit dat you and me hab de sat'sfackshun of seein' our hoss dribe all dem odder hosses home."

Now, Mr. Yard told me to come down here, and he put my name on the last part of the last page of the program, where it is just hanging on by its eyebrows at this minute; and he told me I was to drive you all home. I understand he is now intending to do that himself; but you are going home after a week of great enjoyment. Mr. Yard telegraphed me and said, "I want you to come and make a glowing speech about Sequoia Park and its extension and tell them something more about Mount Whitney." I am obliged to advise Mr. Yard that my days for glowing speeches are Tuesdays and Fridays, and not Saturdays; and yet I do want to tell you something; I do want to talk to you a little while about this important question of our national parks. All of us who appear before you this week qualify on some basis of special attainment or special opportunity or special study, not by any virtue of special gifts on our part, or on my part, at least. But by virtue of special opportunity in the practice of my profession I have learned something about Mount Whitney and about others of the national parks.

Awhile ago the editor of one of the greatest magazines, with the largest circulation, appeared on this platform; he is the editor of a magazine which is not second to any periodical in this country, nor is the editor second to any other editor in this country.

This man came to me and said to me: "I want you to go out"—this was about two and a half or three years ago—"I want you to go out and study all the national parks that we have. I want you to see what they are and where they are, and I want you to see if you can not bring these parks into greater understanding and greater use by the American people." I do not believe that the intention of that editor at that time was so much to increase circulation as it was to do some good to the people of America. He

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wanted the people to know more about a subject in which they were not very well informed at that time, and never have been since, for that matter. Very well; I went out and studied these parks the best that I knew how.

No honest reporter at that time could have spoken with unqualified approval of the condition of the parks. To-day is the time to write that series of stories. In the short period of two years and a half changes bordering on the miraculous have taken place in the entire administration of our system of parks, and the park system has gone forward in a way which speaks more to the credit of departmental work at Washington than I can mention with regard to any other thing of which I know. And we all know very largely where the credit for that work should be placed.

If you will go out to Glacier Park, I fancy you will find the flag of this Republic flying there. You will see better transportation there. You will have your privilege to travel as an individual. You can go and come there with more freedom and with more independence than you ever could have done before. If you go down to the Yellowstone, you will find full-fledged and in perfect operation that so much dreaded question of motor-vehicle transportation in the parks. It had to come, and it has come. I know, and I think you know, who is responsible for that. Congressman Gillett told you of some of the changes which have gone on in Rainier Park; changes very much needed. The homestead proposition inside the lines of that park in time will be corrected. There will be a tremendous circumnavigating motor road built around that mountain some time. That's on the cards. That will come to pass. There is a new entrance to that park now established. All those things now, mind you, have taken place in the last two or three years, and did not exist at the time I studied the parks.

I was looking at the pictures outside there, and Mr. Mather showed me changes in the parks that surprised me. I did not know so much could be done in so short a time. It certainly has been brought about by Mr. Mather's scheme of giving the parks more publicity, more transportation, and a wider and more flexible use by the individuals visiting in the parks.

The thing that struck me as being least desirable when I was making my study was the custom which some concessionaires had of treating us Americans just as the hotel keepers of Europe have been accustomed to do—as articles of merchandise. They sent us through ticketed on a schedule. I did not like that, and never will like it. But under the system of transportation and accommodation in the parks as it exists to-day, and as it will exist in the future years when more of us can go there and enjoy ourselves, we can go out and look at the sunset and have a good time and not have to go home to 7

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o'clock dinner unless we feel like it. We can take our own system of transportation into the parks, and live on an independent basis. I consider that one of the greatest achievements in the national parks—this treating an individual American as an individual.

If you go down to Yosemite Park you will see an attempt there to bring about a much better system of transportation and accommodation than was known three years ago. That great national highway that I traversed, away up in the clouds, belongs to you and it belongs to all of us, not by the generosity of the Department of the Interior altogether, and not by the wisdom of this Government altogether, but very largely by reason of the large heart and the fertile brain and the very generously elastic pocketbook of one private citizen who certainly is within reach of the sound of my voice and the sight of your eyes to-day.

Now, at the time I visited Sequoia Park I looked over the register of the visitors who had been there within the preceding year. That was in June, I think, of 1914. There had been just four people in that park the preceding year, who lived east of the Mississippi River. The park was not known, and it was not being used. That country had been known and used commercially for a long time, and you could tell the dividing line, the edge between Sequoia Park and the open country, where lumbering operations had gone on, and where private enterprise had used the resources of nature as they pleased. Now, I reckon I am about as hard a man as the next. I do not suppose any of the speakers on this program are particularly maudlin or sentimental. We all ought to claim to be hard-headed business men. But I am telling you if you go out to that country, and you see the ruin of redwood lumbering, it will come mighty nigh bringing the tears to your eyes—to see one of those tremendous trees butchered, its remains filling up canyons and littering mountain sides, cut into parts, distributed, scattered over all the country, perhaps to make roofs for temples of human gain. I tell you if you look at that thing in the process of its happening it will come mighty near bringing tears to your eyes, and it will make a convert of you to the whole principle of national parks and the preservation of that country from all operations of that kind in the future. One of those trees is not a tree; it is something more than that; it's a creature.

It is something more even than a creature; it's a temple, a temple of the living God. It came out of the past and was given to us not to destroy, not to use in any save one way. One thousand, two thousand, or three or four or five thousand years of age—its roots were going down into the mountains before the first stone was laid in the foundation of the oldest temple built by man of which we have any knowledge to-day. It wasn't meant to be destroyed. It

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came out of the past and it belongs to the future. And I call that a great work which looks toward the preservation of such monuments for those who are to follow us.

Now it was my good fortune to be with the Mather party when we made that wonderful journey from Sequoia Park across to Mount Whitney. I wish Mr. Yard had been with us then. Different speakers have told you what a wonderful enterprise that was, how enjoyable it was in every regard. In that journey I obtained two pictures which will remain in my mind as long as I live, and I hold those two pictures as the dearest and the most splendid of my collection of mental images, embracing not only these two beautiful summers in the Sierras but many other summers, because I have always loved the mountains. I have been a big game hunter, and something of a traveler all my life, and out of all the times I have had in the Sierras and Rockies, and out of all these tremendous spectacles I have seen, I retain those two pictures. Now one of them is a picture of a tree, and the other is the picture of that mountain regarding which Mr. Yard and Mr. Mather have asked me to speak to-day.

We were lying one morning in the redwood meadows. We slept in our sleeping bags—did not have any tents, and lay flat on the ground; and I remember in early dawn I woke up as I lay in my blankets, and I gave a look out and up against the sky, and the pink of the Sierra dawn was just coming, changing from the black of the Sierra night. My comrades lay about me at different distances, scattered over the ground. Mr. Mather was, I believe, asleep at that time in the hollow of one of those big trees. They had the carcass of a deer hung up in there that night, and a lot of pack saddles. I do not know but two or three were sleeping in the tree.

Mr. McCormick was just now telling about the measurements of a tree. He measured it 109 feet around; and as he was speaking, I asked Mr. Mather right suddenly how far to the back of this hall it was. He said, "I think it is 90 feet, about." Now, measure the depth of this hall, and add 20 feet or more, say, and make your circle, and you will get some idea of these trees! You can not imagine their size. It is no use trying to tell you. But look up at the circle of the dome in this ceiling, multiply by two or three, and you will get something of the size of those great trees.

In the Redwood Meadows there were numbers of these trees standing about and I waked up and looked about. Off to the left was Gilbert Grosvenor, of the Geographic Magazine, and over here Congressman Gillette was standing on one foot trying to get into his riding togs for the duties of the day, and if you have once seen a Congressman in that attitude you will never forget him afterwards! [Laughter.] If you have once seen a tree like this you could not

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forget that either. I looked up at it as I lay there, and you have to look up and up and up in order to see the summit of one of these mighty trees—a very wide angle lens is the only thing with which you may photograph one of them at all.

That tree stood above me. I brushed some ants aside that were promenading around on top of my sleeping bag, and I think that tree looked down on us as though we were so many ants also, and it must have felt like brushing us aside.

I do not know how big or how tall that tree was, but I remember it and shall always remember it so long as I have any mental pictures remaining to me, as it stood there that morning in its tremendous dignity and tremendous indifference, over against the pink of the Sierra dawn. I suppose branches of a tree like that are bigger than a man's body, 100 feet above the ground, but this means nothing to the average person. Clear up to the top of that tree it was as motionless as though made out of bronze. It did not move. It looked down on us. I said it brushed us aside like so many ants.

Now, that's one of the pictures I gathered out of that Greater Sequoia Park. I looked on that tree as an index, a sort of a finger, a sort of a milepost, pointing, we will say, onward and pointing upward to a still higher sphere of action. It pointed as a milestone our way over to Mount Whitney.

Presently we arrived at our last camp, for we were to ascend the mountain itself from the Crabtree Meadows. Mount Whitney itself is not a difficult mountain to climb—on the contrary, it is one of the easiest. It is the highest mountain in the United States, and perhaps the easiest to ascend for a man in ordinary good health. We had with us a doctor who was somewhat of a spoil-sport himself, and it was his greatest delight on the evening before we were to undertake the ascent of Mount Whitney to tell us that certain of us, if we undertook to go up that mountain, would never come down alive. There were tears in his voice when he spoke. He told me, I remember, "If you go up there you do so at your own risk. You had better arrange to have a decent human burial, because somewhere on that rocky slope you will find your last resting place." And in view of those advices I went to the head packer of our pack train and I said, "Frank, what will you take to get me up on top of Mount Whitney?" "Ten dollars," he replied, "if I have to take you apart and carry you up on the installment plan!" At any rate, by the kind assistance of Mr. Mather and the head packer I did get up on top of Mount Whitney, and I saw there what indeed would in the prose of some other writer perhaps afford material for the glowing speech I can not give to you.

I can not tell you what we saw; you will have to go there yourselves. You will have to see the national parks of this country to

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enjoy them. You will have to climb to the summit of Mount Whitney to know about it yourselves. I recall that there was a great dark cloud bank coming on at one side. Soon it was to snow and drive us down from the mountain, and, as you were told this afternoon, we could see the Panamints and the Funeral Range, and back of us to the west we knew somewhere there ran the deep canyon of the Kern River. It was all no more than a stone's throw from where we stood.

It was a tremendous scene. It was a tremendous place. That's as high as you can go in America. That's the top of America! But I should be a poor speaker indeed if I undertook for one moment to paint you any picture of that which we saw. To me, to stand there with these gentlemen, my friends, around me, was indeed the climax of my long life in the practice of my own profession, which has taken me in many different corners of the wilderness world.

My friends, there are two ways of looking at these things. There is a material tree, a material Sequoia, and a spiritual Sequoia; there is a material Mount Whitney, and there is a spiritual Mount Whitney. There are certain eminences in human lives from which we look out. Only imagination gives us the real outlook, the real vision, from a point which we are entitled to call the top of America. Only a splendid imagination could make these parks what they are or what they are going to be. Without imagination you can not build up even a great business. Without constructive imagination to push behind that business, and to get on both sides of it, and to lead it—without suggestions and support you can not even build up a material business in this world.

You can not make a system of parks in this country without imagination. You can not stand on the top of America, on the real top of America, without imagination; and you can not look out from that place and see what America is and what America ought to be, and, praise God, what America's going to be, unless you have imagination!

I thank you very much.

THE PRESIDING OFFICER, MR. MATHER.

The time is passing. It had been planned that Mr. Hough should finish off this afternoon before we had the stories for the benefit of the children, which must come very soon, so I hope Mr. Yard will forgive me for having to call on him out of his order as the last speaker. I know it is only proper, from one point of view, for the work and effort and labor of love on his part—for to him we owe a debt of gratitude for the splendid accomplishments that have been made possible this week.

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ROBERT STERLING YARD, OF THE DEPARTMENT OF THE INTERIOR.

THE TEHIPITE VALLEY AND KINGS RIVER CANYON.

Ladies and gentlemen, I have a message, and I think I can make it a brief message. At half-past 4 the children's hour begins, and I shall be through at that time. During that hour the children should have the right of way. There are many vacant seats through the auditorium and there are 50 seats in front to be occupied; Mr. Mills has gone back to provide some ushers to see that these little folks get these seats. If there are any little folks left standing after all the seats are filled, I am going to appeal to the chivalry of the adults here to give up their seats to the little folks.

Meantime, the operator will show you again the map of the Greater Sequoia. [Shows map.]

When I began to study our national parks in preparation for the great work we had undertaken, the glories of the Sierra stood out before my mental vision perhaps in more stupendous relief than any other feature. At this time I was drawing my knowledge from books and men; as yet I had visited no national parks; and the men were enthusiasts.

Almost from the first I learned of the great country between Yosemite and Sequoia, which ought to be a national park some day. In fact that is what I called it, the Ought-to-be-Sequoia, before the name Greater Sequoia was devised. Before I knew anything definite about any other valley in our national parks besides the Yosemite Valley, I was familiar with the fact that the Kings River Canyon and the Tehipite Valley were, next to Yosemite, the grandest valleys on this continent. My teacher was Robert Bradford Marshall, Chief Geographer of the United States Geological Survey, and chief lover of national parks. His splendid enthusiasm kindled the fires in me.

Few whom I had then met had yet seen these valleys, and few I have met since have seen them. They are almost unknown to-day outside of California, and little known there. Not even Muir, so far as I know, described them, though I have found various references to both in his writings. Yet they are destined to become celebrated next to Yosemite's incomparable valley. I expect to see the day when the three shall inevitably be mentioned together.

Both originate in the everlasting snows of the Sierra summits. The Middle Fork and the South Fork of the Kings River, respectively, have carved them from the living granite. Each lies east and west, a short day's journey, as the trail winds, apart. It was my great fortune to see both last summer, and I can best picture them by reading brief extracts from a record of that trip. (Reads:)

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Time will not dim our memory of Tehipite or the august valley or the leaping, singing river as we saw them on that charmed day. Well short of Yosemite in the kind of beauty that startles and bewilders, the Tehipite Valley nevertheless far excels it in bigness and power and majesty.

Lookout Point, a couple of miles south, afforded our first sensation. Here the rising trail emerged upon a broken mass of rock standing well out over the head of the canyon and 3,000 feet above it, disclosing Tehipite Dome in full relief. It is one of the great views, in fact it is one of the very greatest of all our views, and by far the grandest valley view I have looked upon, for the rim view into Yosemite by comparison is not so grand as it is beautiful.

The canyon revealed itself to the east as far as Mount Woodworth, its lofty diversified walls lifting percipitously from the heavy forests of the floor and sides, and, from our high view point, yielding to still greater heights above. Enormous cliffs abutted, Yosemitelike, at intervals. South of us, directly across the canyon, rose the strenuous heights of the Monarch Divide, Mount Harrington towering 1,000 feet higher above the valley floor than Clouds Rest above the Yosemite.

Down the slopes of the Monarch Divide, seemingly from its turreted summits, cascaded many frothing streams. Happy Gap, the Eagle Peaks, Blue Canyon Falls, Silver Spur, the Gorge of Despair, Lost Canyon—these were some of the romantic and appropriate titles we found on the Geological Survey map.

And, close at hand, opposite Mount Harrington and just across Crown Creek Canyon, rose mighty Tehipite. We looked down upon its rounded glistening dome. The Tehipite Dome is a true Yosemite feature. It compares in height and prominence with El Capitan. In fact, it stands higher above the valley floor and occupies a similar position at the valley's western gate. It is not so massive as El Capitan and, therefore, not so impressive; but it is superb. It is better compared with Half Dome, though again not so impressive. But it has its own august personality, as notably so as either of these world-famed rocks; and, if it stood in the Yosemite, would share with them the incomparable valley's highest honors.

From the floor, the whole aspect of the valley changed. Looking up, Tehipite Dome, now outlined against the sky, and the neighboring abrupt castellated walls, towered more hugely than ever. We did not need the map to know that some of these heights exceeded Yosemite's. The skyline was fantastically carved into spires and domes, a counterpart in gigantic miniature of the Great Sierra of which it was the valley climax. The Yosemite measure of sublimity, perhaps, lacked, but in its place was a more rugged grandeur, a

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certain suggestion of vastness and power that I have not seen elsewhere.

This impression was strengthened by the floor itself, which contains no suggestion whatever of Yosemite's exquisiteness. Instead, it offers rugged spaciousness. In place of Yosemite's peaceful woods and meadows, here were tangled giant-studded thickets and mountainous masses of enormous broken talus. Instead of the quiet winding Merced, here was a surging, smashing, frothing, cascading, roaring torrent, several times its volume, which filled the valley with its turbulence.

Once step foot on the valley floor and all thought of comparison with Yosemite vanishes forever. This is a different thing altogether, but a thing in its own way no less superlative in its distinction. The keynote of the Tehipite Valley is wild exuberance. It thrills where Yosemite enervates. Yet its temperature is quite as mild.

The Kings contains more trout than any other stream I have fished. We found them in pools and riffles everywhere; no water was too white to get a rise. In the long greenish-white borders of fast rapids they floated continually into view. In five minutes watching I could count a dozen or more such appearances within a few feet of water. They ran from 8 to 14 inches. No doubt larger ones lay below.

So I got great fun out of picking my particular trout and casting specially for him. Stop your fly's motion and the pursuing fish instantly stops, backs, swims round the lure in a tour of examination and disappears. Start it moving and he instantly reappears from the white depth where no doubt he has been cautiously watching. A pause and a swift start often tempted to a strike.

These rainbows of the torrents are hard fighters. And many of them, if ungently handled, availed of swift currents to thresh themselves free.

You must fish a river to appreciate it. Standing on its edges, leaping from rock to rock, slipping thigh deep at times, wading recklessly to reach some pool or eddy of special promise, searching the rapids, peering under the alders, testing the pools; that's the way to make friends with a river. You study its moods and its ways as those of a mettlesome horse.

And after a while its spirit seeps through and finds your soul. Its personality unveils. A sweet friendliness unites you, a sense of mutual understanding. There follows the completest detachment that I know. Years and the worries disappear. You and the river dream away the unnoted hours.

The approach to Granite Pass en route from the Tehipite Valley to the Kings River Canyon was nothing short of magnificent. We entered a superb cirque studded with lakelets. It was a noble set-

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ting. We could see the pass ahead of us on a fine snow-crowned bench. We ascended the bench and found ourselves, not in the pass, but in the entrance to another cirque, also lake-studded, a loftier, nobler cirque encircling the one below.

But surely we were there. Those inspiring snow-daubed heights whose sharply serrated edges cut sharply into the sky certainly marked the supreme summit. Our winding trail up sharp rocky ascents pointed straight to the shelf which must be our pass. An hour's toil would carry us over.

The hour passed and the crossing of the shelf disclosed, not the glowing valley of the South Fork across the pass, but still a vaster, nobler cirque, sublime in Arctic glory!

How the vast glaciers that cut these titanic carvings must have swirled among these huge concentric walls, pouring over this shelf and that, piling together around these uplifting granite peaks, concentrating combined effort upon this unyielding mass and that, and, beaten back, pouring down the tortuous main channel with rendings and tearings unimaginable!

Granite Pass is astonishing! We saw no less than four of these vast concentric cirques, through three of which we passed. And the Geological Survey map discloses a tributary basin to the east inclosing a group of large volcanic lakes and doubtless other vast cirque-like chambers.

We took photographs, but knew them vain.

A long, dusty descent of Copper Creek, which MrCormick correctly diagnosed as something fierce, brought us, near day's end, into the exquisite valley of the South Fork of the Kings River—the Kings River Canyon.

Still another Yosemite!

It is not so easy to differentiate the two canyons of the Kings. They are similar and yet very different. Perhaps the difference lies chiefly in degree. Both lie east and west, with enormous rocky bluffs rising on either side of rivers of quite extraordinary beauty. Both present carved and castellated walls of exceptional boldness of design. Both are heavily and magnificently wooded, the forests reaching up sharp slopes on either side. Both possess to a marked degree the quality that lifts them above the average of even the Sierra's glacial valleys.

But the outlines here seem to be softer, the valley floor broader, the river less turbulent. If the keynote of the Tehipite Valley is wild exuberance, that of the Kings River Canyon is wild beauty. The one excites, the other lulls. The one shares with Yosemite the distinction of extraordinary outline, the other shares with Yosemite the distinction of extraordinary charm.

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The greater of these two canyons is destined to become famous under the name of its part, the Tehipite Valley; the lesser will have the undivided posession of the title Kings Canyon. Tehipite is as distinctive and unusual a name as Yosemite. But the Middle Fork of the Kings is by far a greater stream from every point of view than the beautiful South Fork.

Looking ahead, this canyon of the South Fork seems destined to the quicker and the greater development. It is broader, flatter, and more livable. It lends itself to hostelries, of which two already exist. It is more easily reached and already has some patronage. Moreover, from its name and position, it is the natural recipient of whatever publicity grows out of both. Tehipite has to build from the ground up.

There are few nobler spots than the junction of Copper Creek with the Kings. The Grand Sentinel is seldom surpassed. It fails of the personality of El Capitan, Half Dome, and Tehipite, but it only just fails. If they did not exist, it would become the most celebrated rock in the Sierra, at least. The view up the canyon from this spot has few equals. The view down the canyon is not often excelled. When the day of the Kings River Canyon dawns, it will dawn brilliantly.

We loped and ambled and galloped down this gorgeous valley, filled to the brim with the joy of its broad forested flats and its soft invigorating air.

The walls were glorious. Those in shadow were clothed in purple, streaked and blotched with yellows and many dark ochers. Large areas were frosted with grays of many shades, some on abutting cliffs shining like silver. The walls in sunlight showed interesting differences. The purples of the shaded side now became dark grays; the light grays, white. The yellows faded or acquired greenish tints. Here and there in broad sunlight appeared splotches of vivid green, probably stains of copper salts.

This closed the afternoon session. The conference closed in the evening after hearing Enos Mills tell bear stories and Dr. Harry O. Reik, of Baltimore, describe the process of color photography as applicable to national parks condition. Dr. Reik exhibited some remarkable examples of color photography.

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