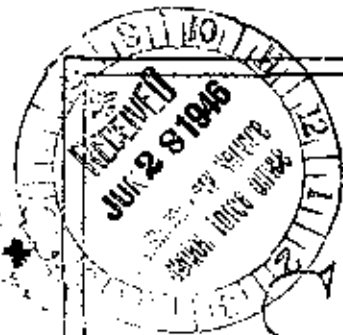




990/D-4
Vol. 2

SOUTHWESTERN MONUMENTS

MONTHLY REPORT
MARCH-1933



RAINBOW BRIDGE

NAT. MON.

TABLE OF CONTENTS

The front cover and the illustrations are the
work of Ed Rogers.

Stoneil cutting by Bob, Hilding and the Boss.
Micrographing by Frank Fish.

- - - - -

Park Naturalist's Report.	
Trip to Field Educational Headquarters - - - - -	1
Preparation of Exhibits v * v - - - - -	1
Description of exhibits - - - - -	2, 3.
Discussion of Exhibits - - - - -	4 4
Contacts during the month - - - - -	5
New Species of Petrified Wood - - - - -	5
 Aztec Ruins. General Report - - - - -	 6
 Capulin Mountain. General Report - - - - -	 6
 Casa Grande.	
Visitors - General Discussion - - - - -	7
Visitors - Special - - - - -	7
Visitors - Statistics - - - - -	7
Road Work - - - - -	8 & 9
Wall Protection - - - - -	10
Travel Statistics - - - - -	11
 El Morro. General Report - - - - -	 12
 Gran Quivira. General Report - - - - -	 13
 Montezuma Castle.	
General Report - - - - -	13
Engineer Attwell's Report - - - - -	14
 Navajo. General Report - - - - -	 15
 Petrified Forest.	
Roads - - - - -	16
Well, contemplated action on - - - - -	16
Signs - - - - -	17
Travel Statistics - - - - -	17
Special Visitors - - - - -	18
 Pipe Spring. General Report - - - - -	 18
 Tumacacori. ~~General~~ Report - - - - -	 18
 The Supplement. Casa Grande Sun-Holes	 A.

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
SOUTHWESTERN MONUMENTS
COOLIDGE, ARIZONA.

April 1, 1933.

Dear Mr. Director:

In formally and officially relegating the activities of March, 1933 to the shelves of memories and accomplishments, I have the following report to make:

From Berkeley, California, where he has been participating in the preparation of exhibits for the Century of Progress Exposition, Bob Rose sends in the following report:

Activities of the Park Naturalist: Leaving Coolidge February 27th, I arrived at Field Educational Headquarters, Berkeley, on the afternoon of March 1st. I have spent the entire month in the National Park Service Laboratories in the preparation of various exhibits under way for the Century of Progress Exposition which is to be held in Chicago between June 1st and November 1st of this year. Since the Southwest is well represented in the Park Service display, a description of the exhibits as they have been prepared will be of interest. I also wish to discuss the various opportunities that exist in Southwestern Monuments for using this type of exhibit in our educational scheme.

Exhibits preparation consisted chiefly in the manufacture of eight large scenic models of national parks and national monuments. The amount of money available for this work was merely sufficient to purchase the materials and certain very special services such as background paintings. This being the financial situation, it was necessary to call upon the various national parks and Southwestern Monuments for the assistance of their park naturalists and others in this work.

The scenic models are of the diorama style in which foregrounds are modeled with a special form of plaster while backgrounds are paintings done by Mr. Gunnar Widforss, famous Swedish water-color artist. By carefully studying elements of perspective, lighting and arrangement, the models give the observer the feeling of standing in the very presence of the scene itself. These dioramas have been constructed in large cases approximately 8½ feet long by 4 feet wide by 6 feet high. Electric wiring, paintings on linoleum background, especially modeled foregrounds—all are contained in these large boxes while attractive windows about 3 feet long by 2½ feet high are constructed such that the scenes can be observed to best advantage.

The following National Park Service units are represented in these dioramas:

Rainbow Bridge, Utah	Carlsbad Caverns, New Mex.
Grand Canyon, Arizona	Mesa Verde, Colorado
Ice Caves, Rainier	Grand Teton, Wyoming
Petrified Forest, Arizona	Kilauea Volcano, Hawaii

These subjects have been chosen such that they exemplify some of the outstanding features of the National Park Service units. They also lend themselves nicely to the diorama type of reproduction. Most of the subjects have been chosen to fit in with the general theme "Earth Science as Exemplified in the National Parks and National Monuments". Accompanying the models are carefully worded labels while transparencies which can be illuminated at will by the observer accompany the Grand Canyon and the Ice Caves dioramas. The ideas conveyed by each exhibit are briefed below:

1. Rainbow Bridge, Utah:- An outstanding example of an arch eroded by the combined action of a down cutting stream and chemical and mechanical processes of weathering.
2. Grand Canyon, Arizona:-Grand Canyon is the most spectacular chasm in the world, formed primarily by the downcutting of the Colorado River supplemented by mechanical and chemical processes of weathering. The story of life on the Earth down through the ages, and of landscapes in past geologic time, is recorded vividly in the formations laid bare by the erosion of the Canyon.
3. Ice Caves, Rainier:-This model takes us right within the ice mass of the snout of a glacier where we stand looking out of an ice-encircled aperture to the light of day. The milky waters of a subglacial stream, made white by "rock flour" held in suspension, and the debris held fast in the bottom and sides of the ice mass, testify to the mighty power of ice as a sculptor of landscapes. Transparencies accompany this exhibit showing examples of modifications ultimately resulting from glaciation. Properly lighted, this exhibit is wonderfully informative.
4. Petrified Forest, Arizona:- The Petrified Forest of Arizona is the outstanding thing of its kind in the world. Here, logs of wood of a kind not living today but related to the Monkey Puzzle and Norfolk Island Pines, have been changed into semi-precious forms of Chalcedony which include Jasper, Agate, Carnelian and Onyx. Warm climate must have

prevailed over this lowlying, swampy, frequently flooded region of Upper Triassic time. The manner in which the processes of erosion are uncovering the logs is an important lesson illustrated in this exhibit.

5. Carlsbad Caverns, New Mex.:— The Carlsbad Caverns is the world's greatest and most spectacular example of the work of underground water. This feature affords a wonderful opportunity to show the power and magnitude of chemical work of underground waters.
6. Mesa Verde, Colorado:— Mechanical and chemical processes of rock disintegration have produced recesses in the cliff walls which have been selected as village sites by prehistoric peoples. The model is a diorama of Balcony House and a scene in the Canyon in which it is situated.
7. Grand Teton, Wyoming:— A fine example of ~~erosion following~~ crustal displacement is obtained in the Tetons. A block of the earth's crust seems to have tilted resulting in one edge of the block being raised while the other was depressed. Stream and glacial erosion has given the spectacular character to the Tetons.
8. Kilauea Volcano, Hawaii:— In no other place may the characteristics of molten lava be studied so advantageously as the crater of Kilauea. The molten material can be studied while still within the volcano itself. In this exhibit a mechanism has been constructed which simulates the volcano with its splashing, surging lake of fire.

My activities were confined chiefly to construction of the Petrified Forest diorama. However, due to personnel shortage, I assisted in mounting transparencies, revising label text, modeling and painting on several of the other models.

The completed dioramas were moved to Giannini Hall for Preview Exhibit through March 27th, 28th and 29th. Large crowds were attracted to see them through the generous publicity of Bay Region papers and posters placed over the Campus and in Berkeley by the University of California. Of special note was the large numbers of off-Campus people who came to view the displays. Observing the reactions of the visitors, it seems that these exhibits are getting their story across in a very effective manner.

There seems to be no question but that the diorama type of exhibit is a very effective instrument of visual education. Great opportunities present themselves for this type of thing. However, extensive application of the method should not be made without a thorough study of the whole problem. In Southwestern Monuments, I believe the diorama type of exhibit can be best applied to reconstruction scenes of prehistoric pueblo and cliff dwellings, and of the activities connected with the daily life of these ancient peoples. Pottery and basket making, religious ceremonies, and tilling of fields with implements of wood and stone are some of the subjects that might be drawn upon.

The greatest opportunity for advantageous use of transparencies, I feel, is found in using scenes from the various monuments in the museums of individual monuments. These scenes, along with maps showing connecting routes, would draw more people to the individual monuments. For some time I have felt the need for instilling into the mind of the visitor the feeling that each individual monument is related to the others of the system (Southwest) and that his Southwest visit should include as many of them as possible. For example, I believe transparencies of the other Southwestern Monuments, installed at Casa Grande, would serve to attract visitors to our other monuments.

Before going too far into the problem of construction of life size figures in the rooms of ruins themselves, I believe careful thought should be given to the possibilities of dioramas telling the story as effectively, if not more so. Just now, without having weighed the problem as much as I'd like, I would say the use of both schemes might work hand in hand.

One of the fundamental weaknesses in our lectures and field trips is the necessity of leaving too much to people's imaginations. Nothing is more fascinating to human beings than the stories of the trials and activities of human beings of the past. However, we have only the ruins, the tools, weapons, and other things on which to base the story. Even as things are, the story of prehistoric peoples in the Southwest is powerfully appealing to most of our visitors. It occurs to me that a carefully thought out installation of dioramas, transparencies, maps and pictures, and other features of visual education, would contribute a most valuable element to our present exhibit scheme. I might add that the present museum installations at Casa Grande and Petrified Forest have included maps, diagrams and pictures in connection with the stories to be told.

During the month of March the following miscellaneous contacts were made:

Berkeley, California Business Men's Luncheon:-lecture 3/27/33
entitled "Exploring the American Southwest"---Attendance-----40

Berkeley Hi-Y boys, lecture, same subject as above, Att.-----50
Date 3/28/33.

San Francisco-Everett Junior High School, illustrated lecture
on same subject as above-----Attendance-----1800
Date 3/29/33.

Berkeley, California Commons Club:- Illustrated Lecture
on the Southwest, subject "Pueblo and Cliff Dwellings
of the American Southwest"----Attendance-----100
Date 3/31/33.

TOTAL MISC. CONTACTS FOR MARCH, 1933---1990.

While enroute Berkeley March 1st, I stopped in San Jose for about two hours to confer with Dr. Lyman Daugherty, Instructor in San Jose State College, regarding a new species of petrified wood he has described from the Petrified Forest National Monument. Dr. Daugherty has the support of some of the leading paleobotanists of the country in his work. He is affiliated at times with the Carnegie Institution and is very active in this phase of Paleobotany. There seems very good reason for believing what Daugherty has described as *Shilderia adamanica* is not only a new species but a new genus as well. Its anatomical relation to the tree groups generally is not even known.

Aside from having had the privilege and pleasure of participating in some most interesting undertakings in connection with the Exposition exhibits, which in itself was most valuable experience, I have had an opportunity to familiarize myself with the laboratory and library facilities of Field Educational Headquarters. There is also remaining, the fact that the Petrified Forest and Rainbow Bridge dioramas will be of permanent and lasting value to our Southwestern district. Just what disposition of these models will be made is not decided upon but they will find a place where they will probably be of most valuable in stimulating interest in the Southwest.

AZTEC RUINS NATIONAL MONUMENT

Custodian Faris reports as follows:

Visitors for the month total 235. Not as good as I had hoped or expected. Sundays have been disagreeable however and at this season Sundays are our big days.

The Cedar Hill highway will be completed before our regular season begins and we are hopeful of that being an aid.

Both rest rooms have received a spring coat of paint and in a few days will be opened up to the public with an even stronger reason for comment.

Paul Fassel has decided to move away and has left for Las Vegas Nevada. We will all miss him as he seemed almost a part of the Monument.

I have managed very well for an old "gunner" (Johnwill has had his teeth removed) Was to get an impression this morning but a slight infection will delay it several days. Dorothy is managing with visitors very well, in fact I fear almost too well from comments on her work. We Custodians will have to watch our H.W.C.P. or we will find ourselves mere janitors sure enough. I hope Julian, Rogers etc take this serious. I speak from comments direct from their quarters; so beware.

CAPULIN MOUNTAIN NATIONAL MONUMENT

Custodian Farr reports as follows:

The weather for the month has been the same as all of the past winter, very dry and windy.

A great many more visitors have come to the Volcano than any March before this one, the total being between four and five hundred for the month.

The road to the top of the crater has been open practically all the month and in fair condition although some places along the road have had to be repaired by the Custodian on account of slides caused by the extremely dry and windy weather. The Custodian expects to go up tomorrow with a couple of hands and remove the fallen rock.

The recent falling meteor caused many eyes to be turned toward old Capulin Volcano and many people thought that the old Volcano was coming into action again. However, the meteor passed by and all now is calm.

CASA GRANDE NATIONAL MONUMENT

Custodian Palmer sends in the following:

For the month of March I have the following to report for the Casa Grande National Monument:

The total number of visitors decreased this month from 3149 for March 1932 to 2564, a loss of 585 or over 18%. This loss is directly traceable, however, to the bank holiday and the main entrance road being closed for several days during construction, requiring a detour to reach the Headquarters. The statistics show a decided drop in attendance during these two periods. The attendance during the rest of the month was normal. These 2564 visitors came in 750 cars from 42 states, Washington D.C., Hawaii, and 12 foreign countries. 42% of the total number came from out of state with California furnishing 13% of the total number; Illinois was third with 98, New York fourth with 86 and Texas fifth with 55. These visitors were served on 283 trips through the ruins and 249 museum tours. Each visitor was personally contacted by some member of the personnel and given a full explanation of the ruins and museum.

General and Mrs. Harbord were two of our visitors on the 15th, Gene Tunney and party on the 8th, Superintendent Tillotson of Grand Canyon on the 17th, Dr. William Beebe, a noted Naturalist, on the 25th, Mr. and Mrs. Chris Jorgenson, formerly managers of the curio shop on Yosemite, now from Piedmont California, on the 26th, G. Souvleski from Yosemite on the 15th, Chief Ranger Lehnert, of Carlsbad Caverns, and his father and mother from Phoenix on the 5th, T.W. McDonough, of Jasper National Park, on the 5th, temporary Ranger Graves, of Carlsbad Caverns, on the 4th and 5th, Mrs. Keresaw Mountain Landis on the 10th and Mrs. E.S. Schantacker, Most Worthy Grand Matron of the Order of Eastern Star on the 18th.

A semi-annual statistical table of travel to this Monument, showing the geographical distribution of visitors is attached. This table shows some interesting data. 3553 cars entered the Monument carrying 12244 visitors, an average of 3.4 people per car. The total number was 520 less than for the same 6 months last year, a decrease of 4%. 59 % of the total were from Arizona and 41 % from out of State. California furnished 14 % and Illinois was third and the balance came from every State in the Union, Washington D.C., Hawaii, Alaska, and 13 foreign countries. In the 6 month period covered by the table 1435 guided trips were conducted through the ruins of Compound A and 1311 lectures were given in the museum. The average ruin party would be composed of 9 people.

The weather has been seasonal and very dry, no rain falling through the entire month. The mean maximum temperature was 79 - mean minimum 36 - mean 57. The maximum temperature was 87 on the 10th and 27th, the minimum 28 on the 6th, the greatest daily range 58 on the 27th. There were 25 clear, 4 partly cloudy and 2 cloudy days.

Casa Grande continued

In my February report I neglected to mention that Mr. Orin E. Taft of Chicago Illinois, a former resident of Arizona, donated to our museum a section of one of the original timbers which he removed from the Casa Grande in 1888. We were very glad to get this additional timber for museum display and Mr. Taft has our sincere thanks for his contribution.

On Sunday March 26th four Indians from the Industrial Department of the Indian Service came to the Monument with a supply of rugs and Navajo jewelry for sale to visitors. These four are engaged in welfare work amongst the various tribes and the money obtained from the sale of the articles is returned practically 100% to the Indians making it, only enough being retained from the sale price to pay for the expense of handling it. The party was composed of two Onidas, one Cherokee and one Pima. They do the work under the supervision of the Guidance and Placement officer of the Indian Service. On their next visit they were requested to also include Pima and Papago baskets which are products of the local Indians. About \$12.00 worth were sold on this first Sunday.

Our road work is completed with the exception of the removal of the surplus of fine rock that was left on the surface to protect the road until the asphalt had set thoroughly. This surplus rock will be used to surface the shoulders.

This road work was done under an \$8000.00 appropriation, half of which was regular and half emergency appropriation. The entrance road and parking area received an armor coat of asphalt and the service road was surfaced with Lay-Kold, an asphaltic concrete. The armor coat was laid by the penetration method and the Lay-Kold was premixed and spread in place. The Bitumuls Co. who manufacture Lay-Kold sent their own inspector onto the job, both during the premixing by a Phoenix firm and the laying to assure that the work was done properly as this short section was put in to test its suitability for general use in the National Park Service. He also stayed long enough to inspect most of the work of laying the penetration pavement on the entrance road and parking area. Mr. T. R. Goodwin, Road Oil Expert of the Engineering Department was in charge of the work for the Park Service.

About one-half mile of paths leading from the Administration Building to the ruins in Compound A and to the residential area were also put in using the penetration method of laying. Casa Grande has now been taken out of the mud (if and when any) and dust.

The work was of distinct benefit to the community and helped considerably in relieving the unemployment situation in this region. Only heads of families who were permanent residents were hired; each crew was given six days work; it was impractical to use the five day week six hour day principle because equipment had to be rented on an 8 hour day basis; a few key men were kept on for the duration of the work; 35 different men were used a total of 266 man

Case Grande continued

DAYS or an average of $7\frac{1}{2}$ days each; the total amount spent for labor was \$1287.40; the subcontractor furnishing the rock and premixed material used 10 men about 7 days each on this end of the job and purchased gasoline and oil locally for his trucks. \$153.77 was spent locally for supplies \$4943.52 was spent in Phoenix for rock and premixed material; the emulsion was purchased through the Engineering Department and shipped by freight from the coast and cost delivered about \$1500.00. Although the appropriation was not a large one it did a great amount of good in relieving distress in this vicinity.

Special mention should be made of one incident; it was necessary to rent a pressure oil distributor and only one such piece of equipment was available in this section of the country and the bidder thinking we were powerless and would have to pay his price bid \$10.00 per hour rental; Mr. Goodwin advised that the award be held up a couple of days pending telegraphic communication with Colonel Thompson, Superintendent of Yosemite, as to whether he would be willing to send his distributor here with his own operators at Park rental rates, we to pay the men enroute and expenses which would have figured a rate of about \$7.50 per hour. Colonel Thompson agreed but in the meantime the bidder had seen the light and realized that the hair he had shold of was not as short as he thought it was and reduced his price to \$7.50 per hour and also reduced his bid a dollar an hour on the roller necessary on which he was also the low bidder and the only owner in the district. Although it was unnecessary to accept Colonel Thompson's offer we certainly appreciated his willingness to cooperate with us to the extent of loaning us a very valuable piece of equipment.

This is also a fitting place and time to express my appreciation of Special Disbursing Officer Evenstad's cooperation in issuing checks whenever called upon to do so to help workmen tide over the time till pay day; changing crews frequently made it necessary to pay frequently and several times it was necessary to issue two checks to some man during his six day period of work so that he could get a few groceries. Spreading work out amongst as many men as possible makes more work for everyone concerned in the handling of the job than when a crew is put on to work straight through the job but everyone assumed his extra share of work with a smile so as to be of as much assistance as possible in relieving conditions. Mr. Goodwin was also inconvenienced greatly in changing crews so often but performed the work in creditable shape. He arranged the work so as to do as much as possible by hand when it could be so done without increasing the cost. He has given us a mighty fine road and some good walks as cheaply as it could possibly be done and kept up a high standard. Our road program is now completed but there are still trails to be built.

Such cooperation and efficiency as was demonstrated in this road work is one of the reasons why it is a pleasure to be connected with the Park Service organization.

Casa Grande continued

Ed Rogers temporarily stationed at this Monument and who was so absorbed in mazes last month got off onto another subject this month and specialized on sun holes. His report accompanied by illustrations is being submitted separately and will be found mighty interesting. When Ed is told anything he doesn't believe it until he has proven it to his own satisfaction. His observations on both mazes and sun holes have been mighty illuminating and have brought forth many new angles that must be studied.

The material applied as a protective coating to the walls of one of the buildings in Compound A by the Air Spray Co. of Washington D.C. is turning out badly. It is checking, cracking and peeling off and has turned a very objectionable grayish color.

The Truscon Co. is planning a test next month but it will be carried on in an outlying ruin where if it turns out badly no damage will be done to main walls. The test will be applied by the laboratory expert of the Truscon Co. who has already made laboratory tests on material furnished him.

Assistant Architect Langley made a brief visit to the Monument on March 20th to inspect our road and trail work.

Some minor repairs have been made to buildings during the month.

Ranger Frank L. Fish made two new charts for our museum during the month. One shows the length of time of habitation of the various ruins and modern pueblos with dates as furnished by Dr. Douglass' tree ring method of dating. The other shows the location of the various National Parks and Monuments in Arizona, New Mexico, Utah and Colorado. Frank has demonstrated his ability in this line of work and probably will get plenty more of it from now on.

Our picnic grounds are becoming increasingly popular. Each week ~~finds~~ finds it used more and more. The Monument has become a meeting place for friends in various cities of the State who bring their out of State visitors with them, have a picnic dinner and see the ruins together.

The Monument has had much favorable publicity recently both in the local press of the State and in Science Service and other publications. The Arizona Automobile Association had a fine article in it's monthly publication which has been widely copied. Several articles have appeared in magazines about ~~the~~ the new cover for the Casa Grande. All of this publicity is valuable advertising and brings us many additional visitors.

The month has been a satisfactory one from every angle. April will be the beginning of our slack season and visitors will fall off from now on until September because of the hot weather in this section during these months.

STATE	NO. CARS	NO. VISITORS	STATE	NO. CARS	NO. VISITORS
Alabama	2	9	Ohio	45	183
Arizona	2089	7298	Oklahoma	24	110
Arkansas	3	19	Oregon	15	59
California	662	1755	Pennsylvania	21	120
Colorado	65	186	Rhode Island	6	21
Connecticut	7	20	South Carolina	1	4
Delaware	2	5	South Dakota	4	17
Florida	2	10	Tennessee	5	28
Georgia	4	12	Texas	87	289
Idaho	5	33	Utah	17	69
Illinois	74	331	Vermont	0	1
Indiana	20	116	Virginia	2	20
Iowa	20	80	Washington	32	104
Kansas	22	63	West Virginia	3	17
Kentucky	0	14	Wisconsin	25	164
Louisiana	2	9	Wyoming	9	28
Maine	3	11	Dist. of Columbia	183	34
Maryland	4	19	Canada	7	45
Massachusetts	13	78	Mexico	4	16
Michigan	41	149	Alaska		6
Minnesota	18	72	Ireland		2
Mississippi	1	6	England		1
Missouri	33	131	Japan		1
Montana	2	17	Hawaii		1
Nebraska	23	78	China		3
Nevada	4	13	Italy		1
New Hampshire	1	4	Scotland		1
New Jersey	10	39	Luxemburg		1
New Mexico	43	108	Germany		1
New York	53	252	France		3
North Carolina	4	9	China		1
North Dakota	2	4	Guatemala		1

TOTALS * 3553 cars 12244 visitors
1456 tours of the ruins
1311 museum lectures

TRAVEL STATISTICS FOR FIRST HALF OF 1953 TRAVEL YEAR CASA GRANDE NATIONAL MON.

EL MORRO NATIONAL MONUMENT.

I have the following letter from Mr. Vogt under date of March 25:

"This is written at our ranch at Atarque where I have been busy on the job of tanking. You will know, though some who read this may not, that tanking is building dirt reservoirs to catch the run-off snow water or rain water for stock watering purposes. I have completed three dams now but have worked myself sick, so I am going home to go to bed for several days to break this terrible deep chest cold.

"Before I go home I have to move my camp, men, teams, etc., about five miles to a new site where we have found a favorable location between hills where a rock spillway can easily be made. The names of the lakes we have provided for are Shoesti Lake, named after our jovial and efficient Zuni Indian cook, La Gallina or Chicken Lake, named after a white hen one of the Mexican drivers brought to the camp one night after a baile in the village 15 miles away. We ate the hen, though I have suspected it was a stolen fowl. At any rate it named the lake. The one just finished we call Chile Lake since at this camp so much chile was used that we had to leave in the interest of our innards.

"Last Sunday I took to El Morro a descendant of Cabeza de Baca, Miss Emilia Baca, of Santa Fe, whose mother is Secretary of State. - She wanted to see the rock to see if any record of her distinguished ancestor had been left there. In her family there is a belief that he came through this region rather than further south when he got away from the Texas Indians. She found no record of Cabeza de Baca and, strange to say, not a single name of Baca on the rock any place.

"The green feed is pushing up nicely out there and everything was very lovely. We ate our lunch at the first place on the south face under the pines. Though it was a cold day it was nice and warm there before the fire.

"C. M. Cotton, of Gallup, headed up a party that visited the Rock on March 8th but there has not been much travel.

"The weather the last few days has been frightfully cold and windy. Bitter winds have kept up all day and sometimes all night, a most unusual thing. One night it brought on a light two inch snow.

"Live stock holds up well despite the wind, though of course the cold retards the growth of green feed.

"Farmers are busy getting their plowing done, buying seed, talking crops, etc. Everyone feels very much encouraged since the President has taken the bull by the horns and tail and gone ahead in such a firm and confident fashion. Work and losses are up and everyone is full of hope. Even the songs of the birds seem to promise better times.

"I replied to Director Albright's letter about unemployment, listing about fifty persons who need employment in this region."

Those singing birds that E. Z. speaks of reminds me of that Indian who, hearing an owl hoot, said it was a sign of rain, that the owls knew when it was coming. A few days later, having his attention called to the fact that it hadn't rained, he remarked that it must have been a "Heap young owl!" Let us hope E. Z.'s birds are adults.

GRAN QUIVIRA NATIONAL MONUMENT.

Mr. Smith of the Gran Quivira National Monument says:

"For the month ending March 20, 1933, we have had 92 visitors in 24 cars entering the monument. It has been a poor month of travel, due to the financial strain which has affected all travel, and we had about as good a month as we had a right to expect.

"Weather conditions for the past month have been favorable, warm, but rather windy, which isn't uncommon for this part of the country during the month of March.

"Mr. K. A. Huey, who has the well drilling contract, has practically all of his equipment on the ground, but has not yet begun drilling.

"Our treasure seekers are expected to return to their diggings in the near future according to their report. They are to begin operations soon after the first of April."

MONTEZUMA CASTLE NATIONAL MONUMENT.

It will be remembered that Mr. Jackson had the Engineers with him last month making a new parking ground. They are still there. Mr. Jackson reports as follows:

"As my last attempt at writing a monthly report has been accepted, I feel encouraged to try again.

"Our number of visitors rather exceeded our expectation for the past month, climbing up to 1006 by actual count. Heretofore, as you know, the number of visitors has been based on the number of names in the register book multiplied by two, for we figured that fifty per cent of the visitors climb the ladders to the Castle and registered in the book up there. This actual count rather bears me out that not fifty percent of them do climb the ladders as our book for the month only shows 303 names. I will of course have to check against the book for a longer period before I can give you anything definite.

"Among the visitors for the month were Martin Evenstad, wife and daughter, from the Casa Grande Ruins, Lee Mighell, and James Curry and wife. James Curry is a brother of Hugh Curry, Park Ranger here at the Castle, while Mighell is a cousin.

"Landscape Engineer, Langley, also spent a few minutes here on the 23rd.

"The telephone company installed a toll telephone box in the store during the month, which means that you can talk as much as you like if you have the money to pay for it! But even so we are glad to get it and will save the old Ford many miles and, as you know, the Park Service does not furnish a car, or any gas or oil for this monument.

"In my February report I mentioned that Forest Supervisor, E. G. Miller from Flagstaff had paid us a visit, but I failed to state that he told us at the time that there was an outline of a very interesting prehistoric building on the flat to the south of us on the land that Davis now claims. Mr. Miller says that he saw them the first time in 1920 while surveying a line through the flat and that on returning to his office he recommended that the land be included in the Monument and was under the impression that it had been, but has since notified me by letter that it was not included, but

he is still strongly of the opinion that it should be. Engineer Attwell and Ranger Curry have since looked the site over and will probably have something to report on it.

Engineer Attwell gave an illustrated lecture before the Kiwanis Club at Clarkdale on the 22nd. It must have been well received as he has since been requested to give the same lecture at the High School.

Attwell and crew are still with us and as you said "in your last report, 'When Walt gets on the job, the dirt begins to fly.'" To which I agree and he is getting a lot of work done. However in this particular case I think he is working himself, his men, and teams too hard and we have had several clashes on the subject.

Walt agrees with me on one thing and that is that our local Apache Indians are good workers and you can back us up in that as we are working several of the boys that you are acquainted with and who have given us good service in years past."

Sincerely, Jackson."

I have the following report from Mr. Attwell on the engineering progress at Montezuma Castle for the month.

"The close of this month finds the construction work at the Montezuma Castle Road and Parking Area within two weeks of completion.

"The new road has been completed with all drainage structures in place. The parking area has been graded and rounded into shape. The rubble masonry walls will add much to the appearance of the project. They are neat and well built. They are made of malpais stone which blends well with the permanent structures and helps to lessen the white glare of the limestone cliffs. The curb has been placed around the central island planting there is in progress. The red sandstone flags add much to the appearance of the walks. Materials have been reasonable, the weather excellent and laborers have worked efficiently, all of which helps to make the unit costs fair.

"The crews have been selected from the destitute bread lines. Men from Camp Verde and the locality near the Castle were good laborers. The men sent over from Cottonwood and Cornville (30 miles) were, on the whole, the poorest that I have ever used. The County's dola system has taught the destitute that the man who works receives the same pay as the man who goes fishing or the man who looks for bee trees.

"We are using a few Indians from Camp Verde who have proven themselves to be the best laborers we have had. They work hard, do their work well and spread no radical propaganda. I was told that I was supposed to work no one locally but all men from Cottonwood, 30 miles away, and bar all local men which would exclude Indians. I have used at least one Indian all the time. At present I am using four Indians and 20 white men.

"During the excavation of the parking area one prehistoric stone was found. There were six inches of ashes and charcoal immediately over it which was overburdened with 50 inches of decomposed limestone. This stone was rectangular in shape being 18" by 20" and 4" thick, with a four inch round hole through the center. It was dressed on all sides.

Ranger Curry believes that it was used as a cover for a subterranean chamber in one of the living rooms where corn or trinkets might have been cached. Other theories are based on the assumption that this stone might have made the entrance to shipapu.

"Ranger Curry and I visited the area which is locally referred to as a prehistoric grave yard for the people of Montezuma Castle. This area is due south of the Castle a distance of 1/4 mile in the Coconino National Forest. It is in the center of the land formerly cultivated by the inhabitants of the Castle. The area is bounded by a prehistoric walk five feet wide with a dry stone coping on each side. The area contains about two acres and is oval in shape. In it there are many small mounds of small rocks resembling graves. Dozens of these mounds have been recently excavated but the material shows no signs of bones. It is easier to believe that this could have been some kind of an offering to the gods than the cemetery idea.

"On March 22, accompanied by Ranger Curry, I gave an illustrated lecture on "Our National Parks and Monuments" to a small group of Kiwanis Club members at their regular meeting in Clarkdale, Arizona.

"So endeth my report for the month of March, 1933."

Walter G. Attwell.

NAVAJO NATIONAL MONUMENT.

I have the following short letter from John Wetherill:

"Dear Frank:

I want to get to work on the trails in the Navajo Monument as soon as I can get my horses up from their winter pasture.

"The first party left here for the Ruins today, and they expected to walk a part of the way.

"We are looking for a lot of travel through here this summer as the roads are much improved and the Government is keeping a crew busy most of the time. We have a grader and cat at work and a crew putting in bridges.

"The Piute Strip was made Indian reservation the first of March.

"I am, sincerely,

John Wetherill.

"P.S. Mrs. Wetherill read this letter and made me add this P.S. with her best regards to yourself, children and your Mother, and she tells me not to forget your rangers."

PIPE SPRINGS NATIONAL MONUMENT.

Mr. Henton writes toward the end of March that spring has come at last and he has seen several flowers and a lot of weeds are coming up, the trees are beginning to show buds and a little green.

He says the Utah Pioneer's Trail Association is making plans to put up their marker at Pipe Spring some time in May and wants to know where we think the best place would be for it. He says some want to put it on the old fort. This will have to be put up to the Division of Design.

PETRIFIED FOREST NATIONAL MONUMENT.

Following is Mr. Smith's usual good report of the doings at the Petrified Forest for the past month:

"Dear Mr. Director:

"The following narrative report for the monthly period including March 27, 1933, is submitted.

"In general, conditions are good in the Petrified Forest National Monument. Travel is picking up and the Bank Holiday seemed to have very little effect in the number of people visiting us. The Southern California earthquake caused a slight swelling in east bound travel for a time.

"The weather has continued mild, ordinary spring weather with cold nights. The highest temperature recorded was 71, and the lowest was 21. There were 19 clear days, 6 part cloudy and 4 cloudy.

"Associate Highway Engineer, W. R. F. Wallace, of the Bureau of Public Roads, was here on the 20th and all roads were inspected with the Superintendent. Some protection work will be necessary on the island above the Rio Puerco Bridge and recommendations for this work were made by Mr. Wallace. Assistant Architect Harry Langley arrived on March 24 and much was accomplished on that afternoon. On March 25 Mr. Langley, Mr. J. H. Brannan, Associate Highway Engineer, B.P.R., and myself spent the whole day in consideration of the various problems connected with the proposed projects. The proposed line change north of the A.T. & S.F. R.R. was studied and the change approved, borrow pit locations were selected for the grading of the proposed north connecting road with U.S. Highway 66 and further study was made of the proposed rim road in the Painted Desert Section.

"Mr. Hurst R. Julian, Custodian of Chaco Canyon National Monument arrived March 16th with his party and spent the next day at the Monument leaving for Chaco Canyon on the 20th.

"Mr. A. H. Wonnack, who has been in charge of water development for the Indian Service in the southwest for many years, and Dr. H. E. Neuffer, Supervising Engineer, Fifth Irrigation District, Indian Service, Albuquerque, New Mexico, came in on the 11th to confer regarding the possible loan of a well drilling rig with crew for the completion of our water well here. This matter has been communicated to your office and proper action is being taken which should result in great benefit to the Service.

"An informational road log was prepared and mimeographed which should be of great value to the public in pointing out interesting places within the monument.

"On invitation of the Rotary Club of Holbrook, the Superintendent made a few remarks to the gathering on March 3. The subject was WHAT BENEFIT ARE NATIONAL PARKS AND MONUMENTS TO ADJACENT COMMUNITIES AND VICE VERSA?

"Our roads have been kept in first class condition throughout the month. Considerable work was necessary to fill up the shoulders where they had been washed out by the rains and melting snows last month.

"In cooperation with the A.T. & S.F. R.R. the farm grade crossing just inside our west boundary was opened up to the tourist and other travel.

Old rails were loaned by the railroad and cattle guards were installed. This is a much better crossing than at Adamana as the visibility is much better and it is a great convenience to the public as the distance to the Painted Desert Section is shortened by more than a mile and a half. Also there was a bad mudhole north of the tracks and west of our boundary in which several cars had been mired so deeply that they had to be pulled out. Then too a sign had been erected north of the tracks and east of Adamana which warned travellers that passing over was prohibited.

Complaints were received from the Pickwick stages and others who were using the Painted Desert Rim Road from U.S. 66 around the Painted Desert Inn as to the condition of this road. Consequently by cooperation with the owners of the Painted Desert Inn this road was repaired and a few changes made. The proprietor of the Inn furnished three Navajo Indians and one white man for this work while we furnished a truck and driver for eighteen days. In this manner the road was put in first class shape for the spring and summer travel. Such minor changes as were made were approved in advance by Assistant Architect Langley last fall.

"From the eleventh to the fifteenth a crew of three men were employed in the erection of the standard metal signs which were purchased last fall. These are a great improvement and a benefit to the public.

"The State, as a federal aid project, has just finished grading and graveling 33 miles of U.S. Highway 66 east and west of Holbrook, Ariz. With the oiling of these in the near future, and the finishing of one more link to the east, and the work being completed west of Williams, U.S. 66 will be in fine shape all the way to the coast.

"A small band of antelope, consisting of about ten, is seen daily about a mile west of our boundary on U.S. 260.

"The Museum is kept open daily from early to late. This is the only special educational service we are able to present at this time.

"As stated, there seems to be a steady increase in the travel through the Monument on account of the Rio Puerco Bridge and our connection with U.S. 66. Including the travel contacted at the Checking Station in the Painted Desert Section, there is more than double travel over last year. The actual increase to date of those passing through the Petrified Forest Section is 37%. The increase in the grand total, including the Painted Desert Section to date is 132%. A tabulation of this travel follows:

For the month, Petrified Forest Section,	Cars	970,	people	2,844
Previously reported	"	"	"	"
Total to date	"	"	"	"
For the month, Painted Desert Section	"	1,383	"	4,542
Previously reported	"	"	"	"
Total to date	"	"	"	"
Grand Total for March 193	"	2,353	"	7,386
Grand Total to date	"	11,414	"	35,330
Last year, same date	"	"	"	15,161

Each state, the District of Columbia, and seven foreign countries were represented in this travel. On the last day which is included in

this report, two states, Maine and New Hampshire remained unrepresented. However a car drove up which showed a Maine license with two men as passengers. On registering, one of these men was found to hail from Maine while the other was from New Hampshire. Thus these two states were saved to make our list complete. Two cars have camped in the camp ground overnight during the month.

"Noted visitors include: Major General and Mrs. J. G. Harbord, U.S.A. Miss Margaret Wubel and party, of Washington, D. C., Mrs. Mildred Schaubacker, Most Worthy Grand Matron of the Order of the Eastern Star., Mrs. B.E. Marks, Phoenix, Arizona, Worthy Grand Matron, O.E.S., Arizona.

"Foreign Countries represented were: Canada, Mexico, England, India, Denmark, South Africa, Germany, Norway and Russia.

"No official trips have been made outside the Monuments.

Very Respectfully,

Chas. J. Smith, Superintendent."

PIPE SPRING NATIONAL MONUMENT.

I have the following report from Mr. Heaton, covering the month before March 24th.

"The spring weather is here and brings as usual the spring fever of causing everybody to clean up around their farms and get their spring plowing and seeding done. It seems that something is missing this year on account of having given the water to the Indians and not having the fields to plow and prepare for some kind of crops.

"I am cleaning out the ponds and fixing up the grounds in general. I am rebuilding some of the rock walls around the ponds that have started to fall because of weather conditions.

"Dr. Farrow, of the Indian Reservation, with Mr. Lindquist, an inspector for the reservation, was here two weeks ago and we talked some about the water. The impression I get from them is that there will be no water for the meadow and the trees, but, as I wrote you on the 20th, I will try to get them to use the ponds here to store the water, and also to concede to the Monument four days out of every twelve days for the purpose of watering the meadow and trees.

"The travel has been on the increase this month. An average of five cars each day, some stopping, others going by as if in a hurry.

"I am looking forward to an interesting time when you and Bob Rose get up here for there are many questions I want to discuss with you; your visit cannot be any too soon to suit me."

TUMACACORI NATIONAL MONUMENT.

Mr. Roundoy sends in the following report:

"Our visitors for the month totalled 783.

"A number of artists were painting at the Mission during the month.

"Among those who registered were General Harbord and wife, Col. Knox and Luch Pershing. General Pershing was a Lieutenant around here during the Geronimo campaigns.

"Mr. Goodwin, of the Engineering Division, has the new parking place well under way. We are employing only heads of families and the most needy.

"As all the people in this vicinity are receiving help from the Nogales charities, the money we are spending here is very much appreciated in Nogales.

"For March there has been very little wind and if it hadn't been for the gasoline engine at the windmill we would have been badly handicapped with the cement work.

"For the eleventh year that I know of, a Say Phoebe is nesting in the same nest in the sacristy at the Mission this year. She made a number of repairs to the nest. Last year she raised two broods instead of the customary three.

"Mr. Langley, of the Landscape Division, inspected the work here last week."

George L. Boundey,
Custodian."

IN GENERAL.

The reports for the month would indicate that weather conditions were as good as usual at this time of year and that we are having about the same flow of traffic that we had last year at the same time.

At Casa Grande we have noted the reduction of Texas and southern states cars which ought to be on the road at this time and it may be that two months from now the same lack will be noted at the Petrified Forest. At least I am willing to guess it will show up there.

We have received orders that all '34 construction money is impounded, which didn't affect us very much as our '34 construction money was pretty much of a microscopic affair.

We were very happy to find that we had a new Custodian job at Bandelier National Monument after July 1, and a new Junior Park Naturalist job to be filled at the same time. These we do need the worst way and we certainly thank the Bureau of the Budget, the Appropriation Committee, and especially the Washington Office for defending these positions and getting them through. We will still be undermanned but there will only be two or three monuments where the conditions will be critical.

Mr. Julian has gone back into the Chaco Canyon National Monument and is prepared to receive visitors there for the summer months.

Mr. Rogers will go back to Bandelier during the month of April.

In general, things are going well among the Southwestern Monuments.

Cordially,

Frank Pinkley
Superintendent.

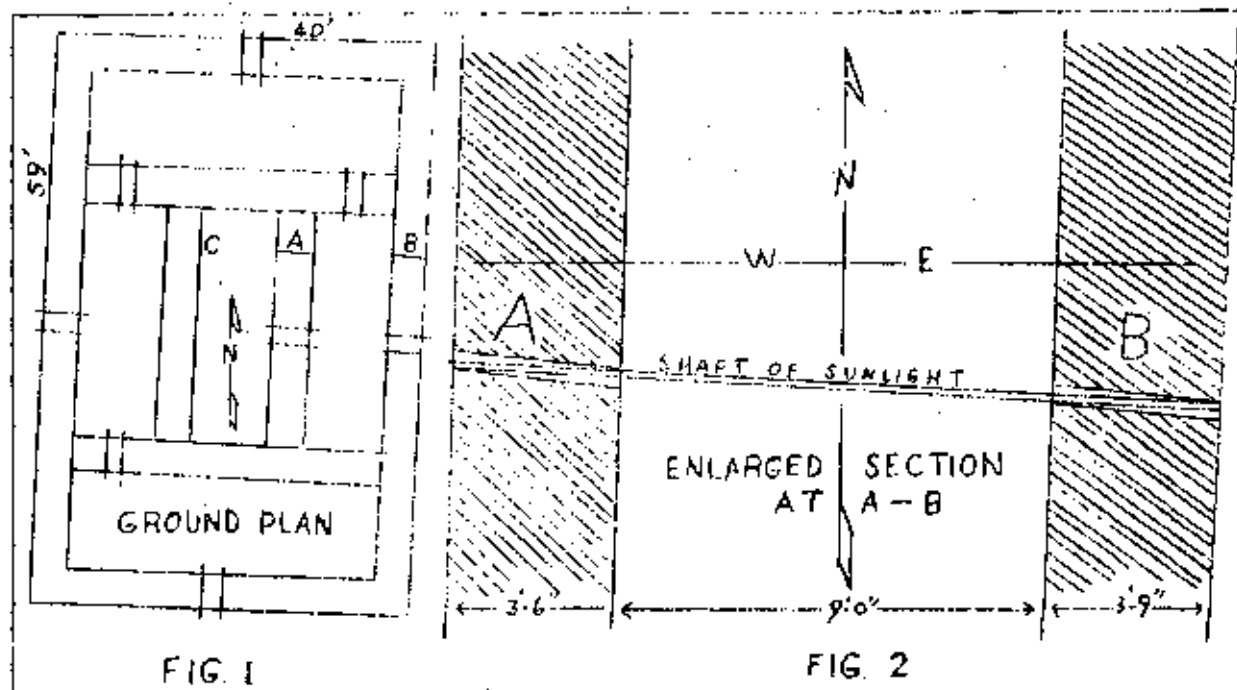
The
February Supplement
to the
Monthly Report

Interesting things which don't quite
fit into the regular report.

THE CASA GRANDE SUN-HOLES.

We have long known that there were two holes in the eastern walls of the Casa Grande Ruin so aligned that, it is probable, in the ancient days the rising sun shown through them putting a spot of light on the back wall of the center room for some two or three minutes at sunrise on about the seventh of March and the seventh of October each year.

Ed Rogers, who has been on a special detail at Casa Grande during the month, became interested in these holes and carried out much the most careful observations which have ever been made of them. His observations began on February 28th and ended on March 15th.



The Casa Grande is a prehistoric structure approximately 40 by 59 feet having the five room plan shown above and the two sun-holes are placed at A and B as shown in figure 1. The theory is that the sun in rising on about the seventh of March in the spring and the seventh of October in the fall would rise at the proper point on the horizon, which would be about south 88 degrees east, to shine through the hole B, across the room and through the hole A, casting a spot of sunlight on the back wall of the middle room of the ruin at the point C.

At the eastern end of the hole A the plaster and wall are broken back several inches, so by means of a wooden frame Ed erected a sheet of cross section paper in the plane of the original plaster surface. He then went into the middle room and, from the west end of the hole A, projected the hole on the back of his sheet of cross section paper in the plane of the original plaster surface, and cut that disc out of his paper. The hole in the paper sheet then represented, with an error of not over 1/10 of an inch, the original end of the hole in the plaster at the east end of the hole A.

We come now to an explanation of Figure 2, which is an enlarged section of the holes A and B shown in Figure 1.

It will be noted that the holes A and B in the ground plan of Figure 2 do not line up precisely, the drawing purposely showing a distortion of this effect in order to make it plain.

Ed is of the opinion that this is an accident of construction; that without instruments of precision they would have not been able to bore the holes in a precise line.

It will be noted that the effect of this distortion of the holes is to produce a smaller sun-spot at the point C, Figure 1, on the back wall of the center room.

The hole B is approximately three feet nine inches long and 1.7 inches in diameter. It is thus of sufficient size to allow the sun in its northern journey along the eastern horizon to shine through this outer hole B from the 27th of February to the 15th of March. This would have been too long a run of days to give a precise dating, and this is taken to be the reason for the second hole A, for as the sun travelled from south to north along the eastern horizon morning after morning, it would shine through the hole B first casting its spot to the north of the hole A and then, morning after morning, coming closer and closer, until about the 6th or 7th of March it would fall through the hole A and make a sun spot at C on the back wall of the middle room.

It was this effect which Ed set out to study.

We come now to a description of Figure 3, which is a reproduction in full size of that portion of Ed's chart of the sun's rising, with certain corrections, which are directly connected with the study. This chart was set, it will be remembered, over the east end of the hole A in the plane of the original plaster.

The chart was divided into inch squares. The east end of the hole A is represented by the circle XY, of which the cross hatched portion, Y, represents the actual field of the sunlight which was thus reduced from the full field by the distortion of the holes from a true line as explained in Figure 2.

It will be noted that on March 4th the sun, rising to the south of the hole B, shown through that hole and cast the spot of light underneath and to the right of the circle XY as shown in Figure 3 under March 4th. Unfortunately this was a cloudy morning and the clouds did not clear back and allow a bright spot of sun light to show until several minutes after sun-up. Thus the record of this morning was not of much value.

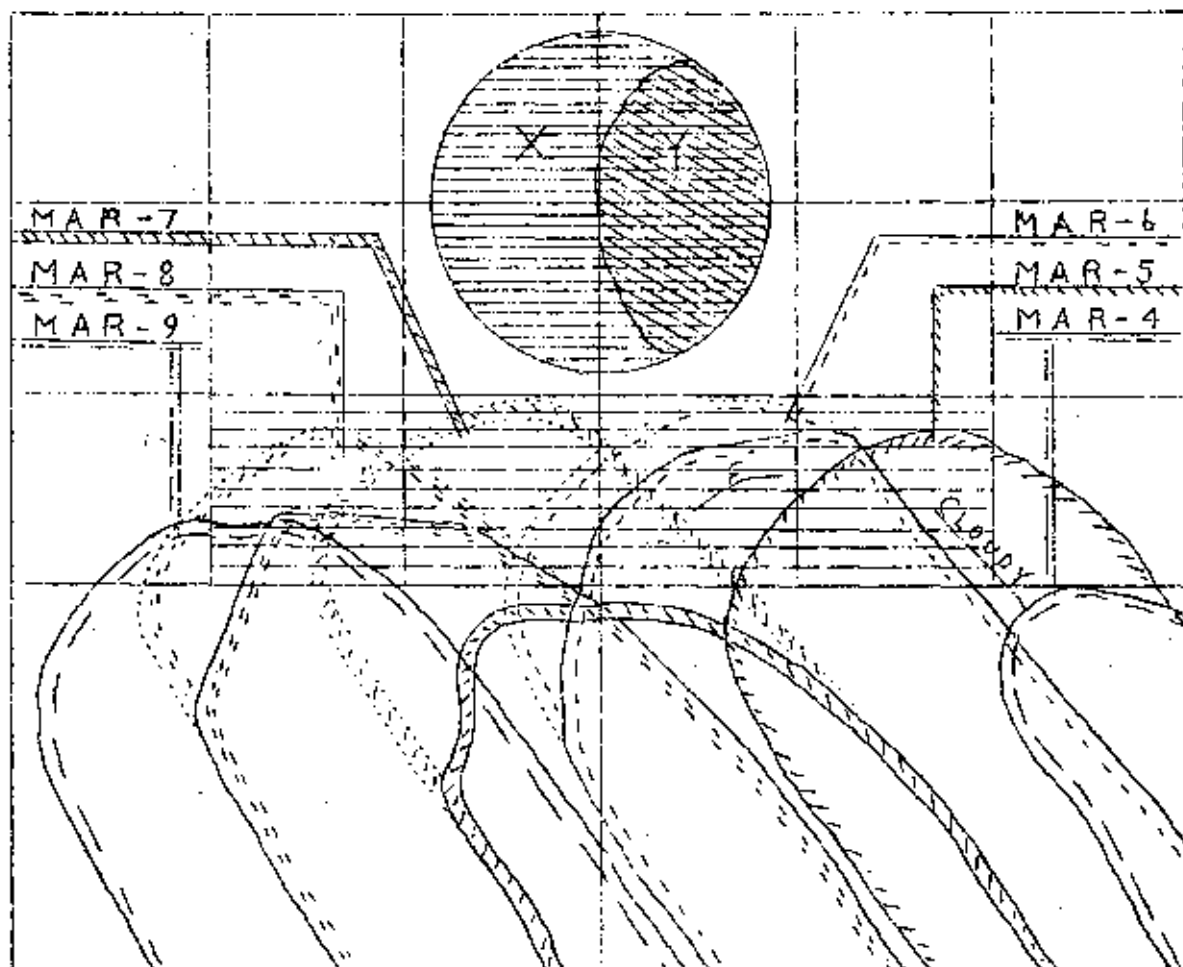


FIG 3

March 5 was clear and the spot fell at the point shown under that date and went downward and to the right.

It was here that Ed discovered that he had an interference of the Chief Clerk's residence to the east of the Casa Grande. That house had been built in the line of these holes and the top of the chimney formed an artificial horizon just that far above the true horizon over which the sun came up behind them.

The method of making allowance for this error and projecting the sun-spot upward to where it should have appeared if the residence had not interfered, was as follows: I stood to the south far enough to sight past the residence and see the true horizon and, at the moment of actual sun-rise, called the time to Ed. He, watching the chart, circled the sun-spot thereon as soon as it actually appeared and again checked his time. He then figured the elapsed time and let the sun-spot sink to the right and downward that same number of minutes, when he checked its upper limit at the point F. It was then a simple matter to project the line where the sun would have appeared as far above the line where it did appear as the

~~point F was below that line and thus we get the dotted and dashed line~~

point F was below that line and thus we get the dotted and dashed line above the solid and dashed line of March 6th. On March 7th he found further interference which dropped the actual sun-spot down to the point shown, but a similar method of projection brought it up nearly, but not quite, on a level with the spot of the 6th.

The spot of the 8th was projected in the same manner but fell a tenth below that of the 7th and far to the left of the circle XY.

The spot of the 9th was so far to the left as not to enter his problem, so it was not projected upward.

A study of Figure 3 will show that the sun-spot fell equally distant from the circle XY on the 6th and 7th but, at its nearest point as shown by its upward projection, failed by some two or three tenths to reach

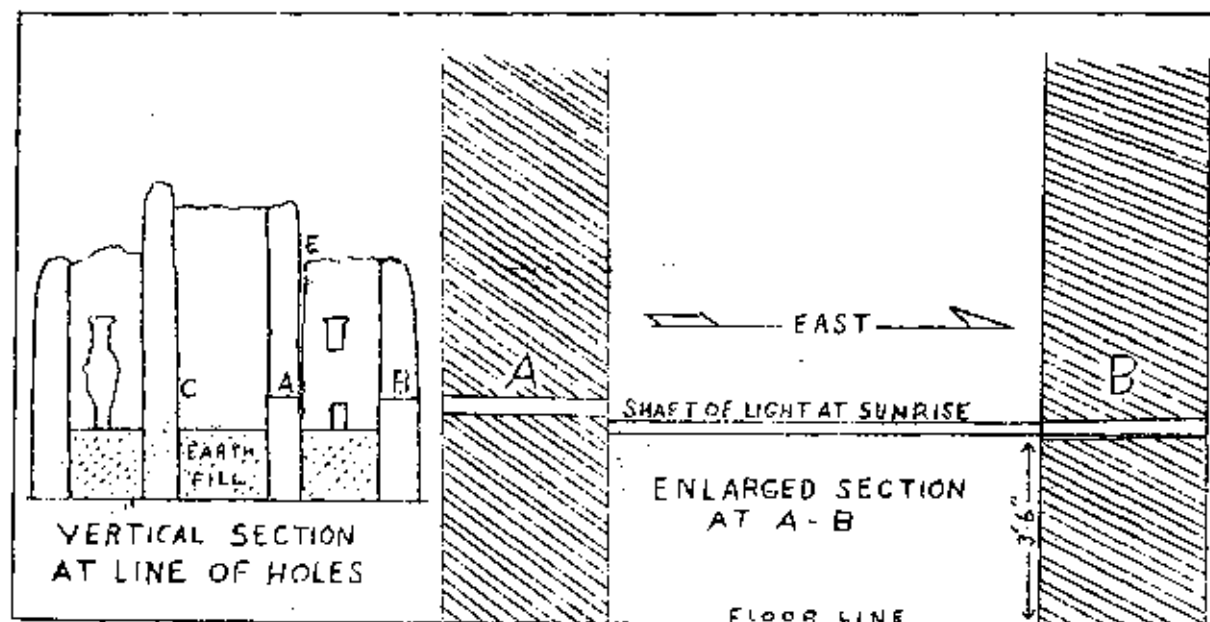


FIG. 4

FIG. 5

the circle XY. For an explanation of this failure we must study Figures 4 and 5. Figure 4 is a vertical section of the Casa Grande through the holes A and B, showing their relative position in the building on a vertical plane. It will be noted that the first story of the ruins was filled with earth at the time of construction, so the holes A and B are about three feet six inches above the floor level of the second story, or some eleven feet above the ground outside. Figure 5 is an enlarged section of the holes A and B of Figure 4 on the vertical plane just as Figure 2 is an enlargement of the holes of Figure 1 on the horizontal plane.

In the vertical plane of Figure 5 it is seen that the holes A and B are not in line in this plane any more than they were in line on the horizontal plane. This distortion is due in part to the fact that the holes were probably never drilled in a precise line and, in part at least, to the fact that the wall containing hole B has settled outward as is proven by a crack, marked E, Figure 4; at the junction of the cross wall between A and B

-----0-----

Further observations of this detailed character will be made next October and a report at that time will be rendered on the full repetition of this event.

From this event a calendar might have been dated which would have given the inhabitants a precise civil year for they would have, in effect, hung their civil year on their solar year and the sun would have checked both.

of the middle room.

From these facts the conclusion would appear that the second hole A must have been drilled to cut the sixteen or seventeen days on which the sun would shine through the outer hole B to the one definite day on which it would shine through the inner hole A and put a spot on the back wall.

On the other hand, the sun-spot of the 6th, if the wall-B were raised to its original position, would strike on the cross-hatched portion of the circle XY marked X and would have shown through to the back wall of the middle room, and this would have happened on that morning only in the northern journey of the sun.

On the other hand, the sun-spot of the 6th, if the wall-B were raised to its original position, would strike on the cross-hatched portion of the circle XY marked X and would have shown through to the back wall of the middle room, and this would have happened on that morning only in the northern journey of the sun.

On the other hand, the sun-spot of the 6th, if the wall-B were raised to its original position, would strike on the cross-hatched portion of the circle XY marked X and would have shown through to the back wall of the middle room, and this would have happened on that morning only in the northern journey of the sun.

On the other hand, the sun-spot of the 6th, if the wall-B were raised to its original position, would strike on the cross-hatched portion of the circle XY marked X and would have shown through to the back wall of the middle room, and this would have happened on that morning only in the northern journey of the sun.

On the other hand, the sun-spot of the 6th, if the wall-B were raised to its original position, would strike on the cross-hatched portion of the circle XY marked X and would have shown through to the back wall of the middle room, and this would have happened on that morning only in the northern journey of the sun.

On the other hand, the sun-spot of the 6th, if the wall-B were raised to its original position, would strike on the cross-hatched portion of the circle XY marked X and would have shown through to the back wall of the middle room, and this would have happened on that morning only in the northern journey of the sun.

On the other hand, the sun-spot of the 6th, if the wall-B were raised to its original position, would strike on the cross-hatched portion of the circle XY marked X and would have shown through to the back wall of the middle room, and this would have happened on that morning only in the northern journey of the sun.

On the other hand, the sun-spot of the 6th, if the wall-B were raised to its original position, would strike on the cross-hatched portion of the circle XY marked X and would have shown through to the back wall of the middle room, and this would have happened on that morning only in the northern journey of the sun.

On the other hand, the sun-spot of the 6th, if the wall-B were raised to its original position, would strike on the cross-hatched portion of the circle XY marked X and would have shown through to the back wall of the middle room, and this would have happened on that morning only in the northern journey of the sun.

On the other hand, the sun-spot of the 6th, if the wall-B were raised to its original position, would strike on the cross-hatched portion of the circle XY marked X and would have shown through to the back wall of the middle room, and this would have happened on that morning only in the northern journey of the sun.

On the other hand, the sun-spot of the 6th, if the wall-B were raised to its original position, would strike on the cross-hatched portion of the circle XY marked X and would have shown through to the back wall of the middle room, and this would have happened on that morning only in the northern journey of the sun.

On the other hand, the sun-spot of the 6th, if the wall-B were raised to its original position, would strike on the cross-hatched portion of the circle XY marked X and would have shown through to the back wall of the middle room, and this would have happened on that morning only in the northern journey of the sun.

On the other hand, the sun-spot of the 6th, if the wall-B were raised to its original position, would strike on the cross-hatched portion of the circle XY marked X and would have shown through to the back wall of the middle room, and this would have happened on that morning only in the northern journey of the sun.

The bound copies of the Superintendent's reports for the months of last October and November reached our desk about a week ago, coming in just 24 hours apart, one set having caught up with the other some place along the way. Well, it made a sort of deluge of reports, all the news of course being somewhat out of date. Four of us around the headquarters here read them and got them out in two or three days and then were talking about the impressions sixty or more reports at one sitting left on our otherwise blank minds.

My own impression was that you could have run a fine meshed seine through that ocean of reports and you wouldn't have brought up a handful of facts about visitors. An archaeologist five hundred years from now getting hold of those reports would guess that the Park Service was in the contracting business but he would never suspect that the main line of work was handling visitors and sending them away with as full knowledge as possible of the place they had come to visit.

In our own minds we have decided to try to correct this latter in our own reports in the future.

Bob Rose says that one of the highlights of his trip to Berkeley was his visit to the San Francisco Office of the National Park Service. The visit was very pleasant and instructive. The Division of Plans and Designs was in the midst of the preparation of Master Plans most of which were gone over together at that time. All who had worked at one time or another in the Southwest asked to be especially remembered to our Southwestern personnel. Among these were:

H. A. Kreinkamp, Architect, and Bob says on several occasions he did justice to dinner engagements with the Kreinkamps.

Chuck Richey, Architect, who, with Mrs. Chuck, who is still new to us in the Southwest, visited the preview of exhibits in Giannini Hall.

J. P. Hamilton, Engineer, the "Two pants Jim" with whom the Faris and Julian families have worked out the engineering problems of their monuments.

Francis P. Farquhar, Editor of the Sierra Club Bulletin, asked to be especially remembered to the Boss.

Mr. and Mrs. Adrey Borell visited with Bob at the laboratory on several occasions. It will be recalled that the Borells were Southwestern Monument visitors last summer.

We haven't been able to get out into our own bailiwick this month and gather the personal items of our own organization, but it won't be long until we will be going hither and yon and finding out how everybody survived the winter and the Bank Holiday and the 1937 shave, and whether there are going to be visitors enough this summer to go round and still keep us all busy.

Cordially,

The Boss -

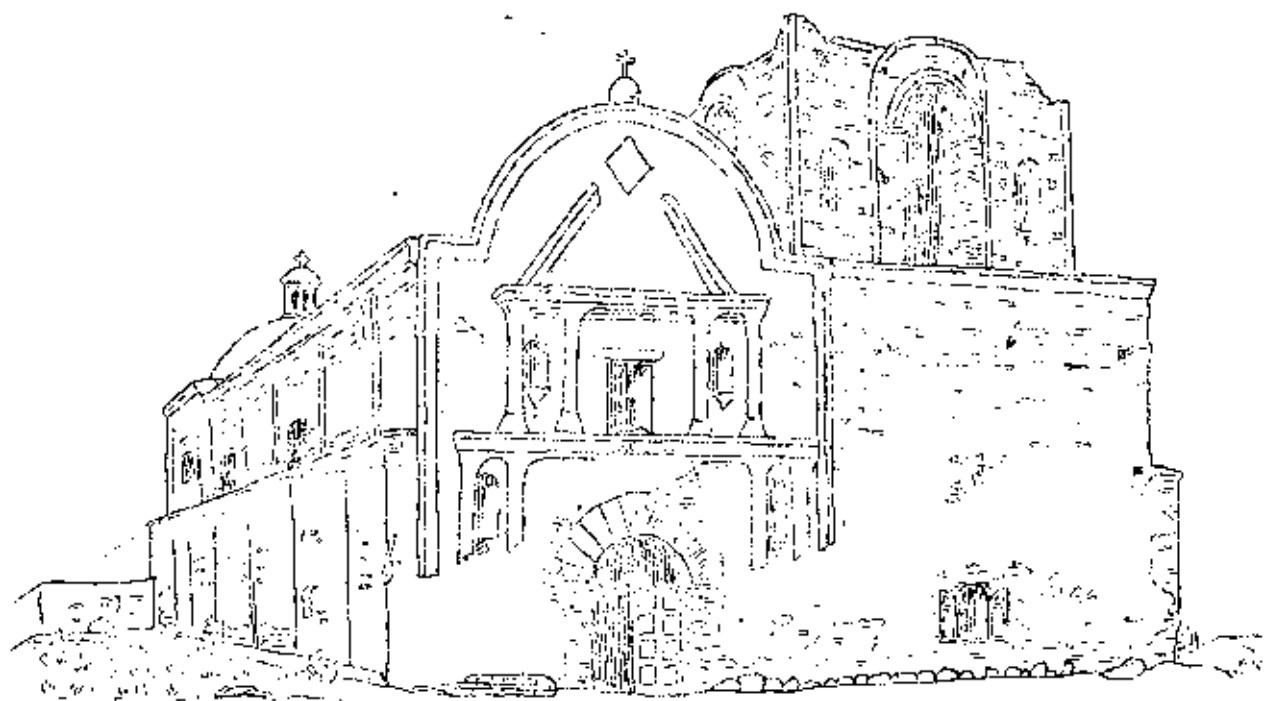
SOUTHWESTERN MONUMENTS

MONTHLY REPORT
APRIL - 1933

17 27

MAY 9 1933	
☒ LOGS	☒
☒ JOURNALS	☒
☒ EQUIPMENT	☒
☒ ACCOUNTS	☒
☒ LAND MAPS	☒
☒ MNT	☒
☒ ROAD DIARY	☒
☒ JOB DIARY	☒
☒ ANSWERED	☒
☒ FILE	☒

CAR 35 4.2



Tumacacori National Monument

NATIONAL PARK SERVICE
LIBRARY
2000 W. BAYVIEW
TUMACACORI, ARIZONA

TABLE OF CONTENTS.

Report of Assistant Supt. Bob Rose.	1
Information circulars, Sandelier and Montezuma	1
Field Naturalist, Dr. C. P. Russell	1
Rose and Russell to Tumacacori	2
Miscellaneous Contacts	2
Aztec Ruins	3
Capulin Mountain	3
Don't forget to bill Botes for space rates.	3
Chaco Canyon National Monument	3
Visitors	3
Land Exchange	4
Sheep Grazing	4
Visitors	4
Casa Grande National Monument	4
Visitors	4-5
Contacts	5
Publicity	5
~~Weather~~ Weather	5
El Morro	6
Weather	6
Visitors	6
Don't forget to bill Julian space rates	6
Sickness of Mrs. Vogt	7
Gran Quivira	7
Visitors	7
Repairs to Mission	7
Potential Discovery	7
Treasure Seekers	8
Montezuma Castle	8
Visitors	8
Recent Archaeological work	8
Engineers' Report by Attwell	9
SYZYGY	10
Navajo	10
Trail Work	10
Petrified Forest	10
Travel	10
Weather	11
Publicity Bulletin	11
Sewage Disposal	11
Registration Figures	11
Visitors	12
Death of Samuel Giragi	12
Pipe Springs	12
Attack on Indians	12
Weather	13
Tumacacori	13
Visitors	13
Eupatki.	14-15-16-17

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
SOUTHWESTERN MONUMENTS
COOLIDGE, ARIZONA.

May 1, 1933.

Dear Mr. Director:

Our calendars tell us that all too soon another month has slipped into the past and thus we are reminded to oil our typewriters, limber up the fingers, and record once more what the members of our widely scattered personnel have to say about their activities during April.

Report of the Asst. Sup't.: (By Rob Rose). "Leaving Berkeley, Calif. on March 31st. Late in the afternoon, I arrived at Casa Grande Nat'l. Monument on the evening of April 2nd. My section of the March report carried an account of the diorama style scenic models which were prepared in the Park Service laboratories at Field Educational Headquarters on the University of California Campus. Since returning to Coolidge, Mr. Hall has sent us some very fine photographs of the completed models.

"During my absence of more than a month on this work in Berkeley, a great deal of general correspondence along with papers and journals dealing with Southwestern subjects accumulated. As time has permitted, this correspondence and filing has been attended to.

"Two hundred copies of a mimeographed information circular on Montezuma Castle have been prepared and distributed. After carefully checking errors, omissions, and the general reaction of visitors to the circular, necessary corrections and revisions will be made preparatory to printing several thousands. One of these circulars is attached to this report. A similar sheet is being released for Fandelier National Monument. Ranger Edgar Rogers prepared the illustrations on both circulars and has given valuable assistance on the text material.

"Dr. C. F. Russell, Field Naturalist, arrived from Berkeley on April 17th. I have spent considerable time since his arrival on assembling information for charts and maps for the museum. Illustrative charts and maps on (1) Migration of the Salado People"; (2) Dates of Construction of Pueblos and Cliff dwellings of the Southwest and Correlation of these with important dates in history; and (4) a map and chart showing present day pueblos and Indian Reservations with key to linguistic stocks, are the archeologic and ethnologic subjects chosen for the ~~main~~ main exhibit rooms. Interesting and instructive drawings and

labels on the Rattle Snake and the Gila Monster have been prepared by Dr. Russell as a part of our natural history exhibits. In response to our request for a little sketch showing poison gland anatomy and mechanism of Heloderma, Dr. L. M. Klauber of the San Diego Zoological Society very graciously responded by having prepared for our use photostat copies of some very important reference material on the subject. We greatly appreciate the interest and cooperation Dr. Klauber has extended to our organization on many occasions. He is interested in the ideals of educational work in the National Park Service and always renders valuable assistance and cooperation whenever called upon.

On April 25th I accompanied Dr. Russell to Tumacacori National Monument to review with him the possibilities of our museum development there. I returned to Casa Grande on the 27th in time to meet a local speaking engagement while Dr. Russell stayed over until the following day. Good opportunities for museum expansion exist at that monument since the old Padres' quarters are used no more as residence for a ranger. After returning from Tumacacori I spent some time assembling all of our maps, charts and other material for framing.

"Graphic portrayal of information where brief, concise labels; vividly contrasting colors, and other visual methods are used, is very sound educational business, I believe. We have been observing these points in the material we have prepared.

"I have the following account of miscellaneous contacts to report for April: These include the Yosemite Valley groups which should have been added to last month's totals:

Illustrated talk at Ranger's Club("get-together")-----	100
" " Yosemite School-----	100
Talk without slides-Phoenix Ariz. Rotary Club-----	160
Illustrated Talk-Federal Employees Assn--Tucson, Ariz-----	100
Total-----	360

"Counting talks made by Custodian Hilding F. Palmer, Engineer Attwell, and others of our permanent and temporary personnel, miscellaneous talks since Jan. 1st have reached more than 4500 people.

AZTEC RUINS NATIONAL MONUMENT. On May 1, I received a telegram from Dorothy saying that the visitors for the month totalled four hundred sixty-eight and that a Mormon Mutual Convention for that district had been held at the Ruins during the month. She then added that she had brought Johnwill to the Farmington Hospital the previous Thursday but that he was getting along nicely and she expected to return to Aztec Monday. I wired her at once to put Tommy Thompson on if she needed him and asked if there was anything we could do, but have heard nothing more and so conclude she has everything in her very capable hands and it is just another case of the H.C.W., being on deck and taking charge when the Custodian is knocked out. We all hope Johnwill will make a speedy recovery.

CAPULIN MOUNTAIN NATIONAL MONUMENT.

Mrs. Farr reports as follows:

"Four hundred visitors this month. All surrounding roads are in good condition; have been open all winter and are in far better condition than usual. The road on the monument has been in fair condition all winter with the exception of some sloughing of lava or cinders, but this has been removed and the road kept passable at all times.

"The weather is mostly dry although there is a light rain today. We are having the usual windy weather for this time of the year.

"The Custodian and his family enjoyed a very delightful trip through the Carlsbad Cavern on the fifteenth of the month and met with a royal reception from Superintendent Boles and his Rangers. They are all certainly a splendid bunch of scouts. Although as busy as bees all the time, they were never too busy to extend every possible courtesy to us and to all others there. Undoubtedly the entire bunch at the Cavern are a loyal asset to the Park Service. Mr. Keck, Mr. Kendall and Mrs. Spencer, handling luncheon, curios, etc, were just as good and helpful as they could be. I would advise every one of our Park Family to visit the Cavern when possible."

I might warn Colonel Boles that stuff like that takes space rates in our Monthly Report and he can set aside a nice sum to cover our bill at the end of the month.

CHACO CANYON NATIONAL MONUMENT.

Mr. Hurst R. Julian, Custodian, reports as follows under date of April 24.

"Dear Boss: This monthly report is almost a six weeks report. Since there was so little to report for the month of March, and since I did not arrive at the Chaco until nearly two thirds of the month had passed, I decided to include the last ten days of March with the April report.

"We have had 295 visitors from fourteen states, Washington, D.C., and from Ireland. Rather more than we had expected from conditions associated with opening the Monument to travel for the beginning of the season.

"Perhaps the reason, or one reason, was that as soon as I arrived the surrounding gateway towns were notified of our opening and

immediately started directing tourist traffic this way.

"The construction work has not really been started, but everything is in readiness for the beginning as soon as we can get an engineer to take charge of the work. Most of the necessary preliminaries have been attended to.

"The progress of the proposed land exchanges gives us hope that some day we may eliminate much of the alienated land which is now within our boundaries.

"It appears that we will also soon be rid of the sheep which have done so much damage in the past. The arrangement with the State Institutions gives us practically complete control of the situation. The assistance of the Indian Service representatives was pledged also. They are preparing to move the Indians who have large bands of sheep, back on the reservation.

"Among the distinguished visitors to this Monument was Mr. S. F. Stacher, Superintendent of the Eastern Navajo Agency, who visited us twice during the month. On March 26 and on April 6, he brought parties of friends with him.

"Several parties of Indian Service people have spent the day here with us. We are glad they feel inclined to make this their place of recreation. Their cooperation and excellent will is appreciated.

"April 2 was an interesting day, largely due to the party which the Faris family brought with them from Aztec. Johnwill is helping boost our attendance.

"April 10 was another busy and profitable day. We had a party of University of New Mexico Visitors which included Mr. and Mrs. Reginald Fisher and Paul Walter Jr. Also a party of U.S.G.N. men who staid well into the next day. In this party was Mr. Herman Stabler, Chief of the Conservation Division. Mr. Stabler offered several profitable suggestions upon the matter of erosion control and is going to send further information at an early date. His interest is gratifying.

"Mr. Edward Lawler, of the International News Service, was a visitor on the 11th and 12th of April. He apparently is commissioned to find points of interest which can be featured in a program of, "Buy American, see America and sell American", or some such slogan which, I believe, is sponsored by the Hearst newspapers. He seemed much impressed with the Chaco and it may mean that we will be featured by that bunch of newspapers."

CASA GRANDE NATIONAL MONUMENT.

Mr. Palmer comes up smiling like the cat that swallowed the canary. He reports as follows:

"April has been a satisfactory month from every angle. First on the list of pleasing things is that our attendance increased from 2284 for April, 1932 to 2927 for this month, making April the high month to date for this travel year by several hundred. This gain of 643, or over 28% is very gratifying and may be an indication that we have at least turned that much talked of corner around which prosperity has been lurking and that things are on the up-turn.

"These visitors came from 38 States, the District of Columbia, Alaska, and three foreign countries. 1,018, or 34% were from out of state, of which California furnished 177 or 50%; Illinois was second with 60 visitors; Texas third with 53 and Colorado fourth with 41. 835 cars carried the total visitors, an average of 3 1/2 visitors per car.

"These visitors were all personally contacted on 301 trips through the ruins of Compound A and the Casa Grande, and 255 museum lectures.

"Another high light of the month is the favorable publicity the Monument has had through local agencies. On the 18th, Major M. A. Strange, who conducts a regular travelogue four times weekly over Phoenix radio station KPHO, took as his subject, the Casa Grande. The Arizona Automobile Association devoted a page in its monthly magazine to a description of the wonders to be viewed at this Monument; the Arizona Republic is running a series of articles by Prof. John Murdock, Historian of Tempe State Teachers' College, in which the Casa Grande has been mentioned several times. All of these articles and talks have done much good in inducing folk to visit the Monument, in convincing them that the Monument is an asset to the State of Arizona, and that the National Park Service is doing a great work in preserving these landmarks for future generations.

"The Custodian delivered two addresses during the month on the Casa Grande National Monument as an asset to this community and the State; one to the Coolidge Chamber of Commerce and one to the Parent Teacher's District Convention held at Coolidge.

"On Easter Sunday, April 16th, the local churches of Coolidge, Florence and Casa Grande, held a sun-rise service on Compound B at the Monument. The personnel went on duty at 5.00 a.m. to park cars and direct visitors. 88 cars brought 326 visitors to the service. This was the second such service held and was much more successful than the first one at which only 125 were present. It will be made an annual event hereafter.

"The University of Arizona Archaeological class made their yearly visit to the Monument on the 7th. There were 48 in the class this year.

"25 members of the Sierra Club of California visited the Monument on the 16th.

"L.E. Peterson, of the Truscon Co., of Los Angeles, was here on the 20th. to apply a test of Truscon's weatherproofing material, Penetex. It had rained the previous day and the walls were not in condition for applying the material so the test has been postponed to a later date. Laboratory tests on small samples seem to be satisfactory, but we have several other materials that afterward failed when applied to the walls themselves.

"The weather has been unusually cool for April. The maximum temperature for the month was 93; mean maximum, 81.7; the minimum, 31; mean minimum 41.85; Mean temperature 61.78. There was .59 inch of precipitation; 24 days were clear; 3 part cloudy; and 3 cloudy.

"Ranger Ed Rogers, who has been temporarily stationed here, left on the 18th for Tumacacori National Monument, from where he will

leave May 2nd or 3rd for Bandelier National Monument. We will miss Ed exceedingly."

EL MORRO NATIONAL MONUMENT.

A little past the middle of the month I had the following good report from Mr. Vogt:

"Dear Pink:

"Driving winds, day after day, and sometimes all night as well, have whipped us into a state of indecision and sadness.

"We had hoped that at least some moisture would come from such incessant punishment. We read of the snow on the White Mountains south of us, the heavy fall in the La Plattes to the north, and of that in the San Francisco Peaks near Flagstaff. All we get here is the bitter cold lashing of the dust laden wind.

"All this has a great deal to do with Park Service travel. Where usually in April we have daily visitors with heavier attendance on Sundays, especially Easter; now no one ventures out.

"The closing of the First National Bank at Gallup and now the appointment of a conservator of the First National Bank of Albuquerque, heretofore considered as the Gibraltar bank of the state,, has thrown a gloom over the whole State, a sort of pinch of financial hunger which discourages travel to trips of greatest need.

"Early in the month I had out one party of some thirty pupils of the Ramah School 7th and 8th grades for a day at the Monument. Notes were taken by many and themes were written afterward on what they heard and saw. Some seven of the boys, including my own, climbed the prehistoric hand and foot trail up the sheer cliff near the rincon, -- a dangerous climb which made us all uneasy.

"The copies of President Hoover's and Secretary Wilbur's letters were duly received, read, appreciated, and forwarded to Mr. Julian at Chaco Canyon.

"The book on Wild Flowers at Rocky Mountain National Park, is a treasured volume.

"A change in State Highway Engineers from Mr. Eccles to Mr. Glen Macey will help our road chances, we believe.

"Gallup has organized a Chamber of Commerce. Through this new organization, which apparently combines all Clubs, parties, and factions, we are expecting more results in road matters. I think Custodian Julian's hot-chile talks and letters have helped greatly to make Gallup business men realize the importance of unified action on roads leading to points of world unique interest.

"Coyotes are right now at their meanest period, killing pregnant ewes to carry away unborn lambs to their dens of puppies.

"An unusual number of Badgers and Porcupines have been seen and on our big lake at Atarque are 88 white pelicans, numerous herons and hundreds of ducks and small water fowl.

"Dry land farmers are about done plowing and planting. Cattle men report many new calves and sheep men are getting ready for lambing.

"The range is drying out and unless moisture comes as a final benediction from these incessant winds, the lambing results

"As all who have seen the Mission will remember, there are two places in the south wall near the east end of the Mission which are much lower than the average height of the wall. In the one to the west we found what appeared to be a window. On one side of the wall it was plainly discernable and would be a few feet ahead of the choir loft and above it. Directly above the partition wall between the Refectory and the room we have rooted for a museum, there is another depression in the walls which appears to have been a window but as this portion of the wall is in a bad state it is impossible to

that room. up a little above the places for the vigas which formed the roof of we began on the south wall of the Mission in the refectory, building. The work we did greatly improved the appearance of the walls. only had \$30 for this purpose and scaffolding to purchase out of this shortage of funds prevented us from working but a short while as we began repairs to the Mission walls on April 6th but

dilations have been fair and travel has begun to mend. 246 visitors who entered the Monument in 65 cars. The weather con-

For the month ending April 30, 1933, we have registered 246 visitors who entered the Monument in 65 cars. The weather con-

I have the following report from Mr. Smith:

"Dear Boss:

In a letter which comes to hand as I write this, E.Z. speaks indirectly of Mrs. Vogt's being at the ranch, as we will sincerely hope that, however it may be speeded, her infection is very much better.

"I have written this by hand in St. Mary's Hospital at Gallup where I am spending the day with Mrs. Vogt, who, during the night suddenly developed a badly infected wound from a slight needle cut. We left the ranch at 4:30 a.m., leaving our four children asleep and drove into Gallup, arriving here just as the sun was trying to light up the red cliffs to the east. A surgeon has opened the finger and we were stopped a few travelling streptococci * infection which will keep her here for several days. * streptococci spelling"

"I have written this by hand in St. Mary's Hospital at Gallup where I am spending the day with Mrs. Vogt, who, during the night suddenly developed a badly infected wound from a slight needle cut. We left the ranch at 4:30 a.m., leaving our four children asleep and drove into Gallup, arriving here just as the sun was trying to light up the red cliffs to the east. A surgeon has opened the finger and we were stopped a few travelling streptococci * infection which will keep her here for several days. * streptococci spelling"

"There has been no damage at Alamo except what the wind does to those badly eroded places near the point of the cliff. Con Salinas, may be developed and may not. crude water well digging going on in some of the canyons where water and horses; lakes mostly dried out, with some frantic and pretty no route suffering but an alarm over water conditions for their sheep, Navajo Grazing areas near us show considerable poverty in clothes, lambing month. A recent tour through the timbered recesses of the

"I am employing about 30 Navajos and Zunis during May, the expected a month ago. among the million and a half Navajo sheep, the thirty some thousand Zuni sheep, as well as in our own flocks, will not be as good as ex-

been are evident. Needless to say that we enjoyed Dr. Cummings' visit. Trade pottery of late date and possible trade relations with Tonto pottery was made of native clays. There is also considerable northern source of one type of black on white pottery. Excellent well fired Pueblo III sherds. Dr. Cummings believes in a probable indigenous digging early Pueblo or Pueblo I period as well as late Pueblo or "Cortez" pottery was found at various sites in aboriginal inhabitants of the Gila Valley to the South.

These structures present definite early cultural linkage with the previously been supposed; dating back to possibly the time of Christ. Cummings found definite evidence of Pit House structure which makes a On the Galkins ranch, south east of Camp Verde, Dr.

Colorado and the San Juan.

They seemed to have belonged to the northern cultures of the little significant as no kivas have yet been found south of the Mogollon rim. sunken ceremonial chamber of like nature. This point is very significant of Clear Creek, he believes he has found either a kiva or a some very interesting and worth while conclusions. At a ruin near the from surface indications and study of pot sherds, Dr. Cummings made who is studying under him. On examination of structures mostly Howard Hingfield, of Camp Verde, as guide, and my son, Earl Jackson ruins within a radius of 15 miles from the Castle, accompanied by the archaeology of this district, and made our station his base of operations. He visited a number of the large pre-historic pueblo a six day visit to the Verde Valley for the purpose of investigating head of the School of Archaeology at the University of Arizona, paid Dr. Byron Cummings, Director of the State Museum and

least a part of them showed up there.

of the wonders of the Casa Grande Ruins and I rather imagine that at bunch; we hope they see it to pay us another visit. We told them with us during the month and they proved to be a very interesting

"We had 27 members of the Sierra Club of Los Angeles

climbed up the ladders to the Castle.

month that only about one third of the visitors to the Monument only about 464 names appeared on the register book, this being the second "By actual count we had 1500 visitors for the month, while

"Dear Pink:

Mr. Jackson reports under date of April 26, as follows:

MONTEZUMA CASTLE NATIONAL MONUMENT.

as they said they would when they left."

"The treasure seekers have not yet returned to their diggings dug to drive cactus but hasn't spudded in yet.

"Mr. Huey hasn't begun drilling here yet. He has the hole be seen here.

would give the visitor an impression of the Grandeur that was once to replace these windows and the vigas replaced over the refectory, it

"If this wall could be brought up to a height sufficient to which would enable them to obtain more light with less space.

we are sure of slopes from the outside of the wall toward the inside tell for certain whether this was caused by a window or not. The one

and that it was educational, - and I believe that you will agree that we could stand a lot of that.

"Engineer Attwell and his crew finished their work here and headed for the coast. We think Walt is a real engineer and that he carried out his instructions faithfully. On leaving he told us he would likely be back in July, so we will stand by, ready to make a Paul Revere ride in case he comes back with instructions to put a coat of green paint on the outer walls of the Castle."

Walt Attwell, by the way, has sent in a report of his work at the Castle, giving some interesting details. Here it is:

"Dear Mr. Pinkley:

The general plan for handling tourist traffic at Montezuma Castle National Monument contemplates giving the lecture at the foot of the cliff in order to reach more people and reduce the amount of traffic in the ruins. This traffic in the building was reaching such a volume that it had a detrimental value.

"By giving the lecture at the foot of the cliff, the amount of traffic in the ruins is greatly decreased. This necessitated the moving of the parking area so the cars could not reach the area adjacent to the foot of the cliff and at the same time accomplishes the Park Service principle of removing the 'modern' from the immediate vicinity of the ruins.

"The construction of this parking area was commenced on Feb. 21 and completed April 17 at a cost of \$4,855, or 9% of the allotment. The cost is broken up into - Labor \$3,256.27 and material, \$1,598.73. The labor is further segregated as:

Camp Verde, 40 laborers, come with teams, averaging	\$32.96
Cottonwood, Cornville, 56 laborers	" 19.54
Clemencean, 2 laborers	" 18.50
Rim Rock, 1 laborer	" 26.12
Prescott, 1 tractor operator	" 190.63
Park Service personnel, foreman, masons, etc	" 137.57
or 103 men averaging \$31.01 each	
Camp Verde crew included 2 Indians averaging	24.67

"The material was purchased locally with the exception of culvert pipe. The nearest pipe market was Phoenix, 125 miles. A summary of material purchased by towns is:

Camp Verde	\$304.55
Cottonwood	632.62
Clarkdale	170.58
Phoenix	490.98

"This project has placed nearly \$6,000 in circulation in the immediate vicinity of Montezuma Castle within 50 days. It should have greatly relieved the tension of the depression there.

"This parking area has been greatly needed for several years. It not only adds much in orderly parking and convenience but in neatness of appearance. It gives a 'Government owned' appearance to the place. Much favorable comment from local persons and tourists proves that the new location is being favorably accepted."

I might say, incidentally, that in a later letter from Mr. Burney, one phrase about this parking ground runs as follows: "This area shows up well and no doubt will be the syzygy of the general development plan." In a footnote, however, he disclaims the scrambled letters and says Walt Attwell did it, which, we take it, shows what kind of 3,2 they put on the market over in San Francisco. The word is in the dictionary all right but we still doubt if we ought to use it in mixed company.

NAVAJO NATIONAL MONUMENT.

I have a report from Mr. Wetherill under date of the 15th, which runs as follows:

"Dear Frank: I am writing this from Kitsil ruins where we are at work on the trail. We find the trail in bad shape after the winter storms. I think we can greatly improve it in the time we have to work. I have only two Navajos with me just now, but will have Dr. Ennoch's boys with me later. I got supplies for our work from Keith Warren and told him to send the bill in to you. I also got an axe and two shovels. I had all the rest of the tools and equipment.

"I would like very much to have you come in while I am here. Mr. Jack Belmer, the Superintendent from Tuba, may be here to visit the Ruins. Mr. Belmer is our new Agent and appears to be a fine man. We can get cooperation from him that we have never had before. He is very much interested in the Navajo National Monument and in the Navajo Indians. He will do what he can to help our prospective National Park along.

"Hoping to see you here, or if you cannot come, send in one of your men, with best regards, I am

Yours truly,
John Wetherill."

PETRIFIED FOREST NATIONAL MONUMENT.

The following is the report of Superintendent Smith to you which will be of interest to all the Southwestern Monument folks and is here reproduced on that account.

"Dear Mr. Director:

Following is the narrative report for the monthly period including April 27, 1933.

"Conditions are fair in the Petrified Forest National Monument, although the travel is not what is expected according to last year's travel and considering the fact that we now have an excellent road connection with U.S. Highway 66 and of course, the fine bridge over the Puerco River. Much of this decrease is probably due to bad weather and high winds which deter people from leaving Highway 66. Also a great deal of the travel at this time of the year is east bound and we have no way of contacting this east bound travel before it gets to the Painted Desert Section of the Monument.

"The weather for the month has been variable, nice warm days for a short period, shifting to several days of wintery character and very high winds. An inch of snow was on the ground on the morning of April 19th. Highest temperature recorded was 76 on the 3rd and the lowest was 20 on the 6th. 22 clear days, 5 part cloudy and 4 cloudy.

"All work, including administrative, has been kept up to date and the road has been well maintained and is in first class condition. The monument has been periodically inspected by the Superintendent and no field representatives of the National Park Service have visited the Monument. However, Mr. Dunn, of the Field Headquarters, in San Francisco and Mrs. Dunn, with their baby, stopped in for a few hours on the 26th, on their way to the Rocky Mountain National Park.

"During the month a publicity bulletin was gotten out, entitled: 'Two Hours in the Petrified Forest National Monument.' This was in the nature of a mimeographed pamphlet with several illustrations showing points of interest along the Monument highway and contains a log of the road. Two issues of these were made, one reading north and the other south. As it is evident that we shall not be able to give any specialized field attention to the tourist, it is felt that if one of these can be handed to each car entering the Monument, either east or west bound, it will enable the traveler to get a great deal more out of the trip for himself than he otherwise would. These pamphlets have been enthusiastically received by the tourists and on checking out, the occupants of the cars many times have asked the ranger if they can keep them, saying that they wanted to take them home as a souvenir of the trip, and for the other members of their family to read.

"Construction of a sewage disposal plant was completed April 10. This was constructed in accordance with approved plans furnished by Mr. H. B. Henson of the U.S. Public Health Service. However, these plans were revised somewhat in order to more nearly come within our funds with the approval of Mr. Henson. For one thing, the catchment tank was constructed of redwood planks instead of reinforced concrete as originally planned. Chas. E. Fisk was designated foreman of construction.

"A small band of Antelope has been seen several times a short distance south of the Checking Station on U.S. 260.

"As stated, there was a slight decrease in the travel through the Monument, but the registration at the Painted Desert Section was highly satisfactory. A tabulation of the travel follows:

"For the month, Petrified Forest Section, cars,	1620	People	4610
Previously reported - - - - -	5484		15681
Total to date - - - - -	7104		20261
"For the month, Painted Desert Section cars,	3112	"	9294
Previously reported - - - - -	3930		19679
Total to date - - - - -	9042		28973
"Grand Total for April- - - - -	4732		13904
Grand Total to date - - - - -	16126		49234
Last year, same date - - - - -			5868

"The State organization of the Lions Club held a convention in Winslow, Arizona, commencing on the 21st, and about 45 came to the Petrified Forest on that date. After lunch they listened to a lecture by the Superintendent and were conducted through the Monument.

3

"Dr. and Mrs. C. L. Fenton were in the Monument on the 22nd and 23rd. Carrol Lane Fenton, Ph.D., of West Liberty, Iowa, is associate editor of the ~~West~~ American Midland Naturalist, published by the University of Notre Dame. Dr. Fenton has been lecturing at the University of California at Berkeley. He was very much interested in the Petrified Forest National Monument and said that, instead of two days here, he would rather have had two weeks. He also stated that he was going to come again as soon as possible. Among other visitors were Dr. C. H. Mayo, surgeon, of Rochester, Minn.; Mr. and Mrs. Ralph Bellamy, movie stars; Mr. George I. Collins, Grand Canyon, and Miss Gertrude Harvey, of Washington, D. C.

"I wish to report the death, in a shocking airplane accident, of a very good friend of the National Park Service, Mr. Carmel Giragi, co-publisher of the Winslow Mail, which was, up until a few months ago, the Winslow Daily Mail. Mr. Giragi started for Phoenix on the morning of the 17th, and apparently crashed within a short time of leaving Winslow. A State wide search was instituted but the plane was not found until Sunday, the 23rd. The plane apparently crashed burst into flames, and the bodies of Mr. Giragi and his pilot were largely consumed. Mr. Giragi was a very public spirited man and during our sojourn here at the Petrified Forest for nearly four years he had cooperated with the National Park Service to the fullest extent.

Respectfully submitted,
Charles J. Smith,
Superintendent."

PIPE SPRINGS NATIONAL MONUMENT.

The following report is from Mr. Heaton under date of April 24:

"I will begin my report for the month of April with the account of turning the water over to the Indian Service.

"On April 4 Mr. Haniron, with eight Indians, came down and commenced the digging of a trench for the pipe line and the next day they got it in and told us they were ready for the water. I let the ponds fill up but no water would go through the pipe and they had to dig up about half of it to find the trouble. They found that they did not get the overflow pipe set over the hole in the main pipe line and that delayed them in getting the water. It was not till the 19th that the first water ran through the pipe and now there are several leaks that they don't seem to be able to stop. The water is beginning to seep through the reservoir banks and get the road muddy.

"Albert Frank and Ray Mose, two young Indians with their wives, have moved here and are making their home just south of the Monument. They are going to do some farming with the water that comes from the Pipe Spring.

"On March 26 the fly-catcher family returned from their winter home in the southern part of the State, and have been busy every day getting their old home in shape to raise their family this year. This is the seventh year that the flycatchers have used the old Fort for their nest and the rearing of their young.

"We have several families of English Sparrows nesting in the Fort and outer buildings this spring. Also we have a family of Bumble Bees in a rafter of the upper house.

"There has been all kinds of weather this month. The first part was warm and brought up the weeds; then it took a change for the colder and on the 19th we had two inches of snow and the next night nearly a quarter of an inch of ice. It has only been the last three days that have seemed like spring. It is reported that most of the fruit has been frozen or winter killed. The trees here at Pipe Spring are sure slow in leafing out. The poplars are just getting green; the Elm, Silver leaf Cottonwood, Plum and others look as if they would be two or three weeks yet before they were leafed out.

"Our travel this month amounts to about 160 coming from the nearby states and from Illinois, Kansas, Texas and Nebraska. In talking with a gentleman from Kansas about the settlement of the West and the Mormon people with their leader, Brigham Young, he said just before he got into his car: "Do you know that if we had a Brigham Young at the head of this Nation today, this depression would be history!" I answered him by saying: "Maybe we have, who can tell?"

"In reading the reports of the other Monuments and the sketches regarding construction and history, all of which I enjoy very much and I get to wishing that I could get away to see them for I know that they are interesting. But did you ever stop to think that Pipe Spring National Monument is the only Monument created in honor of the sturdy men and women who conquered our great Western America. All the rest of the Monuments deal with things beginning back hundreds of years ago, all of which have been preserved for us to study and enjoy; to let our minds wander back and try to picture just what took place and what caused these places to be to be which have been set aside as National Monuments. So I think it is no more than right that we have one or more Monuments created to the memory of the pioneers who gave their all that we might enjoy things they did not dream of."

TUMACACORI NATIONAL MONUMENT.

I have the following letter from Mr. Boundey, dated April 28:

"We had 1204 visitors for April.

"The month has been unusually cold and there has been lots of wind.

"Since last month's report, Engineer Goodwin has finished the parking place and it is a big addition to the Monument, creating a great deal of favorable comment.

"I spent ten days the latter part of the month on a trip to the coast. I did not get warm from the time I left until I returned and I traveled for half a day in the vicinity of Riverside in two inches of snow. California is a wonderful State -- viewed from Arizona.

"The deck on the tower supporting our water tank collapsed, causing considerable repair to the tank, but is now back in good repair again.

"I am very sorry to have missed Bob Rose and Dr. Russell on their visit to Tumacacori.

"Ranger Rogers and wife, who looked after the Monument during my absence leave tomorrow for Bandelier."

WUPATKI NATIONAL MONUMENT.

Quite frankly, we are lifting bodily and article on Wupatki, the Tall House, from the current number of Museum Notes of the Museum of Northern Arizona. The article itself is so well worth while that we want to put it in our files in this manner for permanent reference, and the work that the Museum of Northern Arizona will do there this summer under its permit, will bring the monument into prominence among those under our charge in the Southwest.

"Wupatki is unique. For almost a hundred yards along a red sandstone outcrop extend the partially collapsed walls of dwellings. Behind rises a tall, black mesa with stunted junipers peeping over the rim. Before spreads the painted desert in soft reds and greens. Few sites in the Southwest have such a glorious setting. Wupatki is unique because, for a ruin in the open, exposed to the weather for over seven hundred years, it is remarkable well preserved. In its rooms and trash piles perishable material such as wooden beams, bits of textiles and wooden objects are nearly as well preserved as if they had been buried in a dry cave.

"Wupatki lies thirty-five miles northeast of Flagstaff in the red rock country called the Wupatki basin. It is a region of low mesas and shallow canyons carved out of red sandstones and shales of the Moencopi formation, and half buried in black volcanic sands. Several miles east the muddy Little Colorado River ripples over the surface of a lava flow which forms the Black Falls. To the west lies an escarpment formed of an outlying lava flow of the great San Francisco Mountain volcanic field. About 5000 feet above sea level, this region is treeless and almost bare of vegetation. Dunes of black volcanic sand support clumps of grayish-green Chisos bushes. This sand was ejected some twelve hundred years ago from a volcano called Sunset Crater which lies about thirteen miles to the southwest. It was in this region of little rainfall that the ancient Wupatkians lived.

"Wupatki is unusually well preserved for a site in the open. Some walls are standing three stories high; they were once much higher. Archaeologists estimate that the building once contained from seventy-five to one hundred rooms. Only a small number of these are now visible above the surface. The fallen walls of red sandstone and other debris form a mound of considerable depth hiding the room outlines. Hidden under the fallen walls some of the history of northern Arizona await, the trowel and whisk of the trained archaeologist. The spade and pick of the pot hunter and relic seeker have destroyed much of the evidence out of which the early history of our State is being compiled. The evidence, once destroyed, can never be regained. It behoves those who are interested in our ancient history to finance the trained archaeologist and discourage the destructive pot hunter.

"A hundred yards north of Wupatki, on the valley floor, lies a large reservoir with masonry walls. Four other bowls, not so well preserved, are known in the region about Flagstaff. It is assumed that this is a rainfall catch basin, but it may have been a well such as the Hopis now build. The spade of the archaeologist will settle this point. West of the ruins, surrounded by tall weeds, lies the old Wupatki spring, which probably furnished the main water supply for the pueblo.

"White men first saw Wupatki in 1851, when Lieutenant Sitgreaves, of the U.S. expedition to explore the Little Colorado Valley passed this way. A good picture of Wupatki appears in his report. Fortunately Wupatki lies in a region remote from travel. Great dunes of black volcanic sand make its approach difficult even with horse drawn vehicles, so until a few years ago the ruins were little visited. Then the U.S. Forest Service built a passable road to the ruins, which has made it accessible to motor travel.

"In the 1880's C.M. Schulz, a pioneer sheep man, is said to have cleared out a room or two in the ruin to provide shelter for his herders. It is said also, that he built, as a shelter for his sheep, the wall that joins the two ruins.

"Wupatki early felt the spade of the pot hunter. In the early 1890's the late Ben Doney, the veteran prospector, made a notable collection from the ruin. It is reported also that one of the large curio dealers employed some Mexicans one winter to collect material. In 1900, guided by Ben Doney, Dr. Fewkes visited the ruins, and described them briefly in three publications. The subject matter in all three are the same. In 1924, through the efforts of Mr. J. C. Clarke of Flagstaff, and the author, President Coolidge set aside the ruins as the Wupatki National Monument which is administered under the National Park Service of the United States Department of the Interior. For many years Mr. J. C. Clarke was Custodian of the National Monument. It was a dollar a year job but one in which he took a great interest up to the time of his death in 1937. Mr. Clarke placed the articles which he found in the ruins in the Museum of Northern Arizona at Flagstaff, of which he was a life member and trustee. There they can now be seen.

"In 1937 the Museum of Northern Arizona received a permit from the Secretary of the Interior to excavate and restore parts of the ruins. The work has been begun. Archaeology nowadays is a highly technical science. It does not consist, as many believe of digging for relics and putting them in a museum. It is a study of history. Everything must be studied, remains of bones, pottery fragments, and even bits of wood and charcoal. The latter must be painstakingly preserved so that the tree rings can be studied. By the tree ring methods Dr. A. E. Douglass and his students have made the prehistory of the Southwest into history. We know that Wupatki was occupied in the eleven and twelve hundreds, A.D.

"In the Hopi legends of the Hopi Snake Clan at Walpi a site called Wukoki, or the Big House, plays a prominent part. It was the stopping place of the clan on their long trek from Tokonabé, near Navajo Mountain, to the Hopi mesas. Dr. Fewkes considered Wupatki to be the Wukoki of the legends. So that as it may, the Hopis have long called the ruin Wupakikuh which means Tall House Ruins. This has been corrupted into Wupatki and gives the name to the National Monument. Thus far the Museum of Northern Arizona has been unable to find a Hopi legend connected with this site, although a Hopi informant reported that it was the traditional stopping place of the Parrot Clan of the Zuni Indians on their way from the Grand Canyon to the Zuni Valley in New Mexico.

Dr. Fewkes, after his visit in 1900, states that he saw in Ben

149

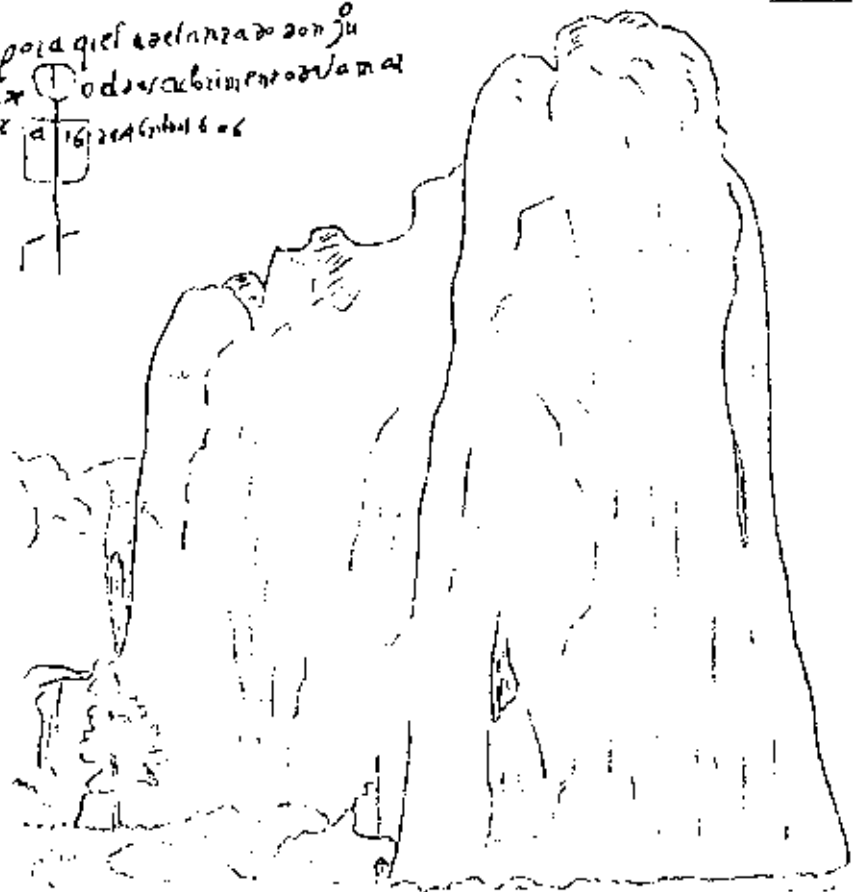
Engineers Special Marked Copy - Southwestern Monuments

Monthly Report
July 1933

Mr. [unclear]
g.72

AUG 3 1933	
☒ RITTREDGE	☒
☒ BURNEY	☒
☐ EQUIPMENT	☐
☐ ACCOUNTS	☐
☐ LANDSCAPE	☐
☒ VINT	☐
☒ ROAD, UTILITY	☐
☒ 100 LITERS	☐
☐ ANSWERED	☐
☐ FILE	☐

pasopola qiel aoclnnza 2on ju
xofax 0 dswabimentozvama
2 el Ar a 162246hul 6 06



FOREWORD

Dear Chief:

I suppose this is the last report which we of the Southwestern Monuments will make to you as Director of the National Park Service.

It is not easy to say goodbye after fifteen or sixteen years of service together, for we always felt we were working with you and not under you.

The only thing that reconciles us to the parting is that your going will prove to the world what we have always known,--sooner or later Business would offer you twice what the Government could.

We who remain will miss you and will think and speak often of you: we will be wishing you all success in your new venture; may you have health, wealth and happiness !

ADIOS.

TABLE OF CONTENTS

Superintendent's Report	
"Say, Chief....."	1
Field Trip of Miss Story	1
Bandelier and Santa Fe	1
Laguna and Acoma	2
Canyon de Chelly	2
Monument Valley	2
Kayenta and the Wetherills	3
Rainbow Bridge	3
Mud	3
Montezuma Castle	3-4
Chaco Canyon	4
De Chelly and Del Muerto	4
Meeting with Chuck and Mrs. Richey	4
"Auf Wiedersehen" to Miss Story	4
Some V-8 figures	4
Aztec Ruins National Monument	
Visitors	5
Visit of Dr. Bryant	5
Regrets and "S.O.S."	5
Bandelier National Monument	
Visitors	5
Heat	5
Obscure Bandelier turn-off from U.S. 64	6
Postman's Holiday	6
Special and Official visitors	6
Ladders and Signs Improvement	6
Wrecks and fires	7
El Merro National Monument	
Weather and General	7
Encouraging prospects on roads	7-8
Congratulations	8
News from Camp	8
"Beyond the Rainbow"	9
Ranger's Report from the Shadow of the Rock	9
Travel and Roads	9
El Merro on Horseback	10
Woe hours and Mud Holes	10
Observations by Prof. and Mrs. Winton	10
"Pete" adopts Novel Companion	11

Gran Quivira National Monument	
Visitors-----	11
Some Weather Records Broken-----	11
Needed Highway Markers Erected-----	11
Ruey-----	12
Treasure Diggers-----	12
Casa Grande National Monument	
Weather Statistics-----	12
Travel-----	12
Officials Absent-----	12
Visitors of Note-----	12
Bird Life-----	12
Chaco Canyon National Monument	
Travel-----	13
Special Groups-----	13
Observations on "Threatening Rock"-----	14
Montezuma Castle National Monument	
Visitorially Speaking-----	14
Assistant Director Bryant's Visit-----	15
Natural Bridges National Monument	
Flowers and Visitors-----	15
Zeke's Farewell to the Chief-----	16
Pipe Spring National Monument	
Weather and Travel-----	16
Utah Pioneer Day-----	17
Tumacacori National Monument	
Visitors-----	17
Assistant Director Bryant and Party-----	17
Petrified Forest National Monument	
Superintendent Smith's Report to Director-----	18-22

SUPPLEMENT

Discussion "Introductory Remarks, Nat. Ex. Serv."-----	A-F
"Adequate - Vs - Inadequate Museum Cases"-----	C-L
Personal Notes-----	L
Some Questions and Answers Regarding Guided Trips-----	M-F
Museum Objectives-----	Q-S
Wild Life Division Report on Bandelier-----	S-T
"Wind from Wind Cave"-----	U
Dr. Rogers Pinch Hits-----	U
Historical Background of El Morro Inscription-----	V

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
SOUTHWESTERN MONUMENTS

Coolidge Arizona, August 1, 1933.

The Director,
National Park Service,
Washington, D. C.

Dear Mr. Director:

Say, Chief, could you ride 1907 miles over every kind of roads, including none at all, in a Ford car which needed an overhauling pretty badly, in all kinds of weather, at most of the hours of the day and night, and get stuck in one mud hole five hours and in another thrity minutes, and miss a meal now and then and get thirsty as the dickens -,- could you do all this and then put a dab of powder on your nose and come up smiling the next morning for another day of the same?

Well, two Park Service women in the persons of Miss Story and Mrs. White Mountain Smith did just that to the everlasting astonishment of my son, Addison, and myself and we have never yet figured out where they got so much powder nor how they always came up smiling.

The month of July, so far as the Superintendent's report is concerned, was built around a trip through some of the Southwestern Monuments with the Editor of the Park Service and the editorial 'we' hereinafter used refers in general to the persons mentioned above.

Leaving my headquarters on the morning of July 1, I went to the Petrified Forest National Monument that night; to Albuquerque, New Mexico, the night of the second and on the afternoon of the third we met Miss Story at Lamy, New Mexico, where she left the usual cares of office behind her and acquired an entirely new set of worries about weather, roads, etc., for the next three weeks or more.

We drove through Santa Fe and out to the Bandelier National Monument the afternoon of the third and walked down that five-eighths mile of trail, arriving at the Lodge just in time for dinner.

We remained at Bandelier over the fourth, having a restful day as far as the noise and crowd of a celebration was concerned. Our visitor got a pretty good understanding of the good and bad points of handling visitors through the Bandelier National Monument and got pretty well around over the floor of the Canyon, which, of course, is a very small part of the Monument itself. The Canyon was beautiful in its summer aspect with the cool shade and the running water and our visitor seemed to enjoy it very much. Ed Rogers and the Honorary Custodian Without Pay did everything they could to make the trip a successful one and we had time enough to talk everything over even to small details.

Leaving Bandelier on the morning of the fifth, we went into Santa Fe where we spent part of the day looking over the town and paying our respects to Jess Nusbaum at the Laboratory of Anthropology and his charming wife at her

beautiful home and then drove on down to Albuquerque for the night.

The next day we had our work cut out for us and, getting a fairly early start, we stopped at Isleta, Laguna and went out to Acoma. Isleta and Acoma, I think, are the only two of the New Mexico pueblos which remain on the same spot where the Coronado Expedition first discovered them.

We went through the Church at Isleta. It is pretty well spoiled with restoration and modernization, but, in going through it, we met the Padre who is in charge and had a mighty pleasant half hour with him. We found common ground in Gran Quivira mission history and he seemed glad to find some one who wasn't simply curious about his Church.

Laguna has one of the most interesting of the Churches which are now in use and some time you must make it a point to stop there and look it over. It is a gem.

At Acoma the Indians have commercialized the village until it loses a great part of its interest. They charge a dollar a head admission to which no one would object if they would then go away and let you alone; but about twenty of them, big, little, old and young, gather around you with pottery and gimcracks and stay under foot and in your way all the time you are on the mesa. There is an extra charge to enter the Church, an extra charge to take pictures, etc., all of which is more or less of a nuisance. As a result, it is hard to get into the feel of the old things and one comes away more or less dissatisfied. Acoma could be made a lovely place to visit and I have long wanted to make a National Monument out of it, but it would require some pretty sharp changes in its operation and it will not take long at the present rate to spoil it past redemption.

Getting back on the highway from our visit to Acoma, we went on to Gallup and out from there to Canyon de Chelly National Monument where we pulled in at Cozy's place at 10.30 that night. Cozy was not only up but he came ten miles or so down the road to meet us and see that we got in safely over a new piece of road and over the new bridge which had recently been completed over the Nazalina Wash, near Chinle. This new bridge at Chinle and the one at Canado will be a wonderful help in keeping that road to Canyon de Chelly open, for those two washes were bad ones before they were bridged; six inches of water in them was a serious matter and sixteen inches might mean the loss of a car if you didn't have sense enough to stay out.

The next day there was water in the Canyon and we could only go up de Chelly to the White House and could not go up del Muerto at all. We laid over the seventh but the water did not go down and then we spent the eighth with no better results. It rained on the eighth and we feared for our roads ahead, but the desert gods were with us and on the ninth we went through from Canyon de Chelly to Kayenta with only about twenty minutes delay in one wash where the banks had cut out. We stopped for an hour with the Wetherills and then went on up to Harry Goulding's for the night.

Harry and Mrs. Goulding are just as much in love with that country as ever and Harry spent the greater part of the tenth in taking us around over the sand hills and showing us the sights. He has a car equipped with air wheels now and can go places that he couldn't make when we were there with you last year. Incidentally, when it comes to driving dry sand where you have to get the last ounce of energy out of your engine about sixty times an hour, commend me to Harry Goulding; if it is picking the hard spots between quick-sand pockets on a sandy canyon floor, where you have to make decisions

at the rate of thirty to the minute and the first time you fail to guess right you go in up to the running boards, give me Cozy McSparron; if it is just a case of having to buck all around bad roads, mud, sand, washouts, and everybody else says it can't be done, then go and get Frank Allen, and, barring an act of Providence, he will take you through. I have seen these three fellows at different times get fifty per cent more power out of a car than the maker ever put in.

Well, after seeing Monument Valley we reluctantly parted from the Gouldings and went back to the Wetherills the evening of the tenth.

I needn't tell you what a pleasure it was to visit with the Wetherills again and of course they sent their regards to you and recalled the details of our trip last year as did all these folks we visited.

On the 11th we went up to Marsh Pass in the car and then took saddle mules and went in to Betatakin Ruin and returned to Kayenta for the night.

That ruin still continues to be one of the Class A sights of the southwest. The beautiful setting of course is what brings it out to the fullest extent, but it is a mighty interesting ruin aside from the setting.

On the 12th we drove from Kayenta to the Petrified Forest National Monument thinking we would catch Dr. Bryant who was scheduled in there that day but we found that he had gained a couple of days on his schedule and was headed for southern Arizona.

On the 14th we drove from Petrified Forest to Rainbow Lodge on the south slope of Navajo Mountain. On the 15th we went in to the Rainbow Bridge, remained the night of the 15th and came out on the 16th. I need not describe the trip to you because you have made it and know the beauties of the country. The Rainbow Bridge itself is only a small part of the trip in and out.

We found that country pretty well infested with Ansel Hall's scientific expedition, a large number of whom, for scientific reasons no doubt since we could imagine no common sense ones, were running around about half naked.

They had carried a line of levels down to the bridge and surveyed the trail in; finding it about twelve miles long; and were finishing a topographic map of the immediate vicinity of the bridge the day we left.

On the 17th we left Rainbow Lodge intending to get down into the Oak Creek Canyon south of Flagstaff, but the desert gods willed otherwise and we spent five hours of the day in a mud hole and wound up at Inscription House Lodge, thirty-odd miles from our starting place. Some brilliant Indian Service employee hatched the idea of building a dam just below where the road crossed a low place, reasoning that if any rain fell the water would back up over the road and stick cars. He did and it did and we did.

Next morning the very courteous guide at the Inscription House Lodge took us out through the sage brush and showed us a crossing half a mile below the dam where we were able, after a few trials and a little work with the shovel, to buck through the wash. It will probably break that Indian Service man's heart when he finds there is a possible way of getting around that mud-hole he has made.

On the 18th we pulled into the Oak Creek Lodge, which is on Oak Creek south of Flagstaff and spent the night in what we agreed was one of the loveliest places of the whole trip. There is a beautiful Federal Aid Highway running the full length of Oak Creek now and you can go down and back on high.

On the 20th we visited the Montezuma Castle National Monument and spent

a couple of very pleasant hours with Mr. and Mrs. Jackson. Here was one place where we did not have enough time and Miss Story promised to come back again on her next trip west and see things more thoroughly. We had planned to spend the whole day but car repairs cut us down to two or three hours.

We went back into Flagstaff that night, had dinner with Mr. and Mrs. Tillotson, of the Grand Canyon National Park and left Miss Story with them for two days at the Canyon, we going to the Petrified Forest for the night.

We remained at the Petrified Forest on the 20th and 21st, leaving the morning of the 22nd for Chaco Canyon National Monument, where we arrived that night.

I remained at the Chaco on the 23rd and 24th. The Archaeological students were at work and have developed some very interesting things in this summer's job. There have been about eight students this summer.

We had a big rain in the Chaco on the 24th and it looked for a while like we would not leave on the 25th, but Mr. Paul Walter, leader of the expedition, put some of his laborers on the rock hill and the big wash at the bottom of it, and, after building a couple of hundred yards of road, we got out without further trouble. We drove into Canyon de Chelly that night, arriving about nine o'clock, where we again met Miss Story and Mrs. Smith.

This second trip into de Chelly was a gamble with the weather and the desert gods proved to be in our favor. This monument is going to be one of our foremost monuments one of these days and I wanted Miss Story to know what it was all about when we really begin development there. We were fortunate this time in catching the water out of the Canyon and so were able, on the 26th to go the 17 miles up del Muerto to Mummy Cave, spending the whole day on the trip and seeing the many ruins along the way.

Chuck and Mrs. Richey, of Tom Vint's forces, met us at Cozy McSparron's by appointment. Chuck wrestled again with the problems of location of buildings and roads and trails and I think he will agree with me that we have there about the hardest problems along those lines that we have any place among the Southwestern Monuments.

We all left Cozy's place the afternoon of the 27th and went into Gallup for the night. The next day we put Miss Story on the train at Albuquerque and, if it is any consolation to her, we have been lonesome ever since.

The 29th we went into Bandelier where Mr. Richey looked over the staked line of the proposed road to the floor of the Canyon and he will give us a report on it from his standpoint a little later.

On the 30th we left Bandelier and stopped for the night at New Laguna. We came on to the Petrified Forest on the 31st and from there home to my headquarters on the first of August.

The total mileage run up this month was 3,716 on 253 gallons of gasoline or an average of 14.6 miles per gallon, which is of course a poor record and was due to the fact that the car was due for an overhaul. We had the block changed in it at Albuquerque and will turn out better mileage from now on.

In general, things in the Southwestern District are moving along in good shape. Roads are, generally speaking, in good condition but not so many cars are using them as last year according to the best reports I can gather.

The individual reports from various monuments follow.

AZTEC RUINS NATIONAL MONUMENT
(FARIS)

"For July we have 1314 visitors to report. This is still a drop of 100 compared with July of last year. We have been unable to find a just reason for the drop other than to point to the fact that people just aren't coming through.

"Several visitors of note have come to Aztec during the last month. We were especially pleased to have Dr. Bryant and family as our guests for a few minutes. Although they were here but a short time, we enjoyed every minute of their stay. We hope their next visit will find them able to stay longer.

"Mr. and Mrs. Carl B. Livingston of Santa Fe, were with us for a time and gave us some interesting ideas upon which to work. Mr. Fred B. Hill with the Bureau of Public Roads at Mesa Verde was also among our welcome visitors. In glancing over the register we note six foreign countries represented. One visitor from Colorado writes in the comment that this is his 29th visit.

"We regret very much that the Director has chosen to leave us but are happy in the thought that all down the line we have the men we have. It is a pleasure to continue working under a group having the policies and ideals of the Service so well in mind and have seen to their execution so well in past years.

"We are still hoping that you will make it up this way soon. We hear of you every once in awhile all around us but never see you here. Don't forget us completely, Boss for since financial aid has been cut so low, we need your help more than ever before."

BANDELIER NATIONAL MONUMENT
(ROGERS)

"Visitors for July number ~~225~~²³⁷. This is 281 less than reported for July, 1932. For the first time now, we have comparative figures and the comparison isn't very favorable.

"We have had some very hot weather this month especially during two ~~###~~ periods of four to six days duration. One lady fainted while visiting Group D. However, she rested until late afternoon and then made it out of the Canyon on her own power. The hottest place in the Canyon is along the cliff where the ruins are found. Many light rains have occurred during the month. A very hard rain occurred the night of the 21st which did a lot of damage to trails and roads. However, the approach road is in very good condition.

(Bandelier, Cont'd)

re-

"U.S. Highway 64 has been located in such a way that the turn-off at Pojoaque is blind. The new highway is about 100 yards east of the old one at Pojoaque and the turn-off is about three quarters of a mile back toward Santa Fe. This turn is unmarked and is easily missed. The State Highway Department promises a sign there soon.

"It would seem that visiting Bandelier is considered a postman's holiday. Ninety six letter carriers from New Mexico had a picnic here July 2nd. They were attending a state convention in Santa Fe of the National Association of Letter Carriers.

"A group of 52 from Seton's Village visited us during the month. This is the School Camp conducted by Earnest Thompson Seton and is accredited by the State Normal. This school is located five miles out of Santa Fe.

"Mrs. Martin who conducts a girls' camp near Taos was in Wednesday with 16 girls. She will bring a group in each Wednesday for about a month.

"Park Service visitors for the month were Sup't. Pinkley, Miss Isabelle Story, Mrs. Chas. J. Smith and Mrs. Tom Vint. We were especially glad that Miss Story could visit Bandelier this summer. Fire control problems brought us a visit from Chief Forester Ansel F. Hall on June 30th.

"The last few days in June I had the first ladder to the Sarcenial Cave replaced, two trail bridges repaired, the camp and parking ground thoroughly cleaned up and most of the brush cut off Tyuonyi. You may remember that this ruin is pretty badly neglected and overgrown. I managed to get most of the brush cut out which permits the walls to be seen somewhat better.

"I have erected a neat sign on the parking ground on the rim calling attention to the fact that the Monument is now administered by the National Park Service and giving date of transfer from the Forest Service. This explains the use of Forest Service signs everywhere. Most people have continued to believe the Monument is still under the Forest Service. We have also placed a sign on the entrance trail announcing that; "A Park Ranger will explain interesting features of the Ruins. Look for him at the foot of the trail". You may have noticed that ~~many~~ many visitors try to avoid a Ranger here. I think

this is less noticeable since this sign is up. It is a 7 by 10 inch zinc sign set like an easel beside the trail. It is painted white, lettered in India Ink and varnished.

"A wreck occurred Friday the 21st at the last curve, about 400 yards from the parking ground. A Miss McKee from Boston driving a 1927 Chevrolet sedan hit this curve too fast and turned over. There were four people in the car but all escaped serious injury. Two were able to come into the Canyon but the other two were bruised rather badly and were taken directly to Santa Fe.

"Two fires have been reported on the Monument this month according to the District Ranger. Another occurred about the boundary of the Grant and the Monument. This must be more carefully checked to be exact. As you know, our boundaries are not exactly surveyed. Apparently all were caused by lightning. One was a snag above the Ceremonial Cave about a half mile. The other strike was a snag somewhere between the crossing of Alamo Canyon and the Stone Lions. Mr. Frey looked for two days but was unable to find it. It was either extinguished by rain or went out of its own accord."

EL MORRO NATIONAL MONUMENT.

The spirit moves both Vogt and Alfred Peterson to write in from El Morro. We'll start off by telling what EZ has to say:

"We're having a hot summer with frequent rains but they are hardly as heavy as we have experienced in average years. We're having a great many interesting and interested visitors but the number is hardly up to par.

"We have high hopes of getting the approach roads to El Morro built with the money allotted us and I'm hoping to hear from you regarding action in this matter.

"We were surprised at the sudden resignation of Director Albright but are glad the new Director, Mr. Cammerer, knows our country and our monument.

"We have sent an invitation to the Commanding Officer of the C.C.C. Camp located in the Zuni Mountains 25 miles from the Monument to bring his young men over to see El Morro offering to make special efforts to give them pleasant and intelligent impressions of our attractions.

"A recent rain washed out one of our bridges late Saturday night near my ranch completely stopping traffic with no hopes of getting quick

aid from the county road department. I undertook to haul plank from my own lumber and repair the bridge before the Sun came up to make it hot. As I was shoveling dirt against the approach the first cars came by enroute to El Morro.

"We have learned that State Highway Commissioner P.L. Rapkoeh of Las Cruces is greatly interested in the Ice Caves,--El Morro road from Grants as well as extending this road ~~from~~ to Atarque and Salt Lake. While in Las Cruces on a combined pleasure and business trip I called on Commissioner Rapkoeh and I know that he will be very helpful to this part of the country.

"Enroute to Las Cruces I travelled from Ramah to St. Johns, Springerville then over the Coronado Trail. This is a beautiful drive through the White Mountains past Hannigan Meadows to Clifton. This should be a fine feeder road to our monuments although talking with store and filling station operators their interests in travel seem to lie mostly toward California and ~~and~~ Phoenix or to El Paso and on East. The mountain country seemed a real barrier rather than an inviting region leading to an entirely different land.

"The promising pinon crop impressed me in many places and this will mean much in return to gatherers this Fall".

"With best regards, E.Z.V.

In another letter to Bob Rose we have much of interest regarding El Morro matters. We follow with this letter of July 22nd.:

"This is a tardy letter to congratulate you and Mrs. Rose on your interesting adventure and to wish you the greatest happiness in the world. We thank you for remembering us and hope you will feel free ~~to~~ & welcome come and visit us on your next trip to El Morro. We will be glad to have you and we will look forward to an early visit.

"This letter is written in one of our sheep camps near which is a new dam built for impounding flood waters. We came near losing it but 5 days work with 4 teams and Fresno and 2 slip scrapers combined with an assortment of 4 Mexicans, one Zuni, a Navajo, beans, mutton, chile, spuds, eggs, wrenches, chains, double and triple trees, and a leaky tent all spiced with plenty of cuss words in Spanish--we think is going to get the best of power of repeated rains and save the water. We will need it badly in a part of our ranch where we have never been able to graze except by using snow watering for the sheep.

"I plan to get away in time on Saturday to spend a half day with Pate at El Morro. We are very much elated over the allotment for El Morro under the Industrial Recovery Act and hope to make the most of it under the guidance and advice of Mr. Pinkley.

"While writing I wish to mention the 27th of July which is "Delegation Day" before the State Highway Commission when efforts are to be made by persons from Ramah, El Morro, Ice Caves and Atarque to get something definite in the way of a road past our monument.

"No doubt we will hear from the Boss by that time concerning the way we can use the portion of allotment on approach roads. At any rate we are looking forward to a visit from you or him or a letter about this matter".

Twice during the recent field trip we attempted to go down to El Morro for I was very much interested in having Miss Story gain first hand information on this monument. Both times threatening weather prevailed to the south and it was advisable not to risk impassable roads that might result from heavy rains.

In an addenda to the above letter "EZ" writes of a new book: "Clyde Kluckhohn's book "Beyond the Rainbow" is off the Press and I find it very interesting. He has some high descriptions of his adventures through the Rainbow Bridge and Wild Horse Mesa country which region he has penetrated with pack outfits on several occasions. His photos are fine and I believe from reading the book that the author is as conversant as any living man of that wild and beautiful country".

EL MORRO-RANGER'S REPORT

Pete happens to think to bring his pencil from the cabin to the shade of the Rock and writes the following on conditions at El Morro:

"I am sorry to have to report that this has been the dulllest month of my experience at this Monument as far as the number of visitors is concerned. The people who have been at El Morro during the past month number 293 and hail from 14 states and France. This is about 25% less than for July 1932 and about 50% less than for July 1931. The decrease this year is probably due to several reasons: The World's Fair is probably keeping a great many easterners from coming further west than Chicago, since I learn that travel even on the main highways is lighter this year than last, but the chief reason for the decrease lies in the fact that the roads leading into El Morro are in uncertain condition. The old road from Grants on U. S. 66 through San Rafael is notorious for its roughness even when dry, to say nothing of mud when wet. The newer, shorter road from Grant through Zuni Canyon is not posted, is little known, and, according to reports, has been closed for construction part of the time.

"The road in from Gallup, just at present, is about as good as I have ever seen it, but the general reputation of these roads after a rain frightens people from attempting a trip which might end up in a mud hole. As an example, a young Frenchman rode in on horseback the other day. I learned that he had been with a party that arrived in Gallup

just when they were having a flood as a result of a heavy, sudden shower on the surrounding hills, said flood doing about \$100,000 damage. Naturally these people thought that all secondary roads were impassable but this young man determined to get out here anyhow and took the mail truck from Gallup. When he arrived in Ramah, he phoned back to his party informing them that the roads were in fair condition and to come on. In the meantime, he made his trip on horseback.

"Four nights ago I was awakened at 1:00 A.M. to be told by a boy who had just walked seven miles that his father and mother were in their car bogged down in the mud and wanted me to come and get them. It developed that in a misguided moment they had taken an old trail, thinking it the better road, and had got themselves into an awful mess - plus car trouble. In trying to aid them I also got myself stuck for two or three hours but finally got out and took the people home. They live sixteen miles from the mud hole they were stuck in. The thanks I got was "I hope I find you stuck some time so I can help you out." You can figure out from that the mental quirk which got that man on the wrong road and into the mud.

"Dr. C.C. Seltzer, anthropologist, who is making cranial measurements of Zuni Indians, brought the personal regards to the ranger of Mr. Jesse Nusbaum of the Laboratory of Anthropology, Santa Fe, New Mexico, and about the next day a friend of Deris Nusbaum, from Harvard College, arrived.

"Mr. and Mrs. A. M. Winton, professors of the Texas Christian University, Fort Worth, arrived in June and camped here until July 10th. The 'family' gathering which we had each evening for dinner, either at the Winton camp or at the Ranger cabin, is much missed by the ranger; but, according to a note just received from Mr. Winton, they plan to return about the middle of August. At that time we plan to visit some of the ice caves, including some of the later discoveries, where Mr. Winton will take moving pictures. Later at the Gallup Ceremonial Mr. Winton plans to make sound reproductions of the Indian songs and chants. Boss you better come in about that time and join us on a trip to the Kaipais Ice Caves.

"Mr. Winton remarked that he has noticed a decided difference in the amount of wild life on the monument since there has been summer-time protection. Mr. and Mrs. Winton have camped here three times, missing the summer of 1932, and have noted that birds, squirrels, etc., are more numerous and tame. The ranger has endeavored to educate the local people against the use of fire arms within the monument area, and has frequently had to keep tourists from having target practice. The Rock is scarred in many places by bullet marks, and one of the neighbors told me that, on a Sunday morning especially, it used to sound like an army was turned loose at Inscription Rock. The elimination of that practice naturally would be conducive to the propagation of wild life. That same neighbor told me that articles of Government property, such as lumber,

etc., located on the Monument, were certainly being treated with lots more respect than they would have been before I was stationed here. Witness the little pile of lumber which laid in plain sight all winter and spring. At one time it would have been a race to see which of the local settlers would get it first.

"The 'water dogs' in the cove (really the tadpole stage of the salamander) attract quite a bit of attention. The prehistoric peoples who used water from the cove quite certainly were familiar with the same animals. This is evidenced by the pictograph on Pictograph Point which quite plainly shows a 'water dog' gills and all. Mr. Winton photographed the pictograph and plans to write a short article for the Science News Letter on this subject.

"The rattlesnake the ranger captured on June 15th has only eaten six mice. Had his last mouse on July 6th and refused several in the following weeks. On July 24th he was restless and I suspected he was going to moult - and he did but had the job almost completed before I saw any of the action. He now has a new and brighter colored coat, and the old, skin measured 31 inches. He is now acting hungry, so guess I better rustle some grub for him.

"Again I shall have to postpone a discussion of boards for protection of translation signs."

We can well understand Pete would get lonesome out there but taking in rattlesnakes for company is something new.

GRAN QUIVIRA NATIONAL MONUMENT
(W.H.SMITH)

"Report time has again rolled around. Last month brought the highest temperature in 49 years with the thermometer standing about three degrees higher than during the same month on average years. This would be expected in view of the extremely severe cold during the past several winter seasons.

"Travel has held up as well as could be expected considering the bad road conditions. Our monument is not on a main throughfare. The World's Fair is doubtless the factor causing people to hasten through on the transcontinental roads.

"We have registered 436 visitors entering the Monument in 69 cars. This is a decline of average visitors per car but several truck loads of picknickers have helped bolster the average.

"We were glad to have on July 19th a gentleman who was distributing State Highway markers for our monument. This will be a great help since so many visitors pass through not knowing of the Monument.

"We have had some of the heaviest rains in this section of the country that have fallen since 1921. The lake down near the store and Post Office filled this year for the first time in 12 years. These rains have certainly spurred vegetation on to terrific rate of growth. Grass conditions are better than for many seasons while wild flowers are blooming in profusion.

"Mr. Huey moved his well rig $2\frac{1}{2}$ miles East and 1 mile south to a well he started some years ago. He had this well down to a depth of 440' and he drilled 200' more making the well 640' when water was struck. The water came in sandstone formation and is reported to be good water which is better than the average for this country.

"Mr. Yrsirro who has been sinking the shaft for the treasure here, is contemplating returning to the diggings soon. Mr. Yrsirro and company were out immediately after they were notified of the damage done by the rain and repaired it to a safe state."

CASA GRANDE NATIONAL MONUMENT
(Reported by F.L. Fish)

In the absence of Custodian Palmer, Mr. Fish reports as follows:

WEATHER:- "Mean maximum-----106.1 for this year(July)

Mean max. last year---104.9

Mean minimum, July 1933-----77

Mean minimum, July, 1932-----74.7

Precipitation, July, '33-----0.83

Precipitation, July, '32-----2.21

"These figures reveal a drier July, with consistently higher temperatures than for July, 1932.

TRAVEL:- Visitors for the month of July guided through the Ruins and the Museum number 944 as compared with 1,058 for July, 1932. This does not include late parties or people driving in and turning around and going directly out without stopping.

Visitors came from 31 states, D.C., Hawaii, Panama, England and Japan.

The 944 guests were shown through the Ruins in 198 parties while the Museum parties numbered 183 different tours.

OFFICIALS ABSENT:- Custodian Palmer left July 10th on annual leave visiting friends and relatives and also the World's Fair in the Middle West. From cards received by the personnel, he and Mrs. Palmer are having a good vacation in cooler surroundings.

VISITORS OF NOTE:- Assistant Director Bryant and family on the 15th.
10 students of Geology from University of
Texas on July 29th.

BIRD LIFE:- One of the young Western Horned Owls (*Bubo virginianus* *pallasescens*) that made his home in the Casa Grande had to be killed during the month. In some unknown manner it lost control of its legs and was killed as an act of mercy."

(S.W. MONUMENTS).

CHACO CANYON NATIONAL MONUMENT
(Hurst R. Julian.)

Mr. Julian comes in with one of his usual good reports:

"Dear Boss:

"The 2056 visitors who came to the Chaco this month came from nineteen states and the District of Columbia. I hope that I will be pardoned for having predicted an increase of a mere one hundred per cent in the number of visitors that were expected at the Chaco this year. There were more people in the Chaco Canyon this month than there were during all of last year.

"Some of the visitors came to witness the Navajo Dances and the Chaco Rodeo, yet there were members of the faculties of nine universities who came with a professional interest in archaeology.

"Mr. Paul S. Martin was here with the Field Museum Archaeological Expedition and they seemed impressed with the ruins of the Chaco.

"Two institutions of (alleged) higher learning have included my lectures in their regular course of study. I mention this not to discredit the educational institutions but to do a little plain and fancy bragging on myself. Possibly though they feel that the ruins of the Chaco are worth while for their students in spite of the fact that I am here, ready to give them information liberally spiced with misinformation.

"For several days at a time the place was overrun with visitors that received no attention or service. There were times when the whole staff of assistants were busy. Since you perhaps are wondering where I got a staff of assistants I will explain. My staff consists wholly of Custodians Without Pay. Dr. Keur has been a constant and reliable guide; in fact he is relieving me at the present moment in order that I may get this report written in time for the mail. Mrs. Keur has, on occasion, demonstrated her worth and there is the ever-present and always reliable Mrs. Julian. Dr. Hewitt relieved the holiday rush by delivering a lecture at Chetro Ketl and has on numerous occasions loaned students for emergency guide work, and Prof. Paul Walter, of the University of New Mexico, helped haul water to the visitors.

"Furthermore, every one seemed to enjoy helping handle visitors. When I attempt to express gratitude they act as though it was unnecessary that I feel indebted to them. A party of visitors evidently were pleased with the brand of service which Winnie puts out as they sent her an ice cream freezer in token of their appreciation. We now have ice cream at the Chaco.

"Prof. Clyde Kluckhohn, of the University of New Mexico, gave a series of camp fire lectures on the Navajo. Every one enjoyed them immensely. You see that I (and the neighbors) have had quite an unusual month.

"During the odd moments Mrs. Keur and I have catalogued some of the material in the museum. Probably we will not get around to this work again before fall unless the roads become impassable for a few days.

"Since the so-called 'Irish potato' is supposed to have originated in Peru, and since wild potatoes were discovered by Frank Fish during

the road building operations on the Smith ranch, there has been established at the Chaco an experimental potato patch. Dr. Keur, of the Biology Department of the Long Island University, is furnishing the more intellectual requirements of the experiment and I help in my own poor way.

"Another interesting, even if ominous, development is reported by Dr. Keur with reference to Threatening Rock. He has spent many days under the Rock making observations in connection with his permit for the investigation of the engineering of the Bonitons. He has recorded the appearance in the last week of cracks in the base of the stone. His attention was directed to them by an intermittent cracking and popping noise which, when investigated, turned out to be due to the shifting and settling of the rock. Dr. Keur is of the opinion that there is danger of the rock falling upon Pueblo Bonito. He has determined the amount of stone that is in danger of falling and has given the amount as being approximately twenty-five thousand tons.

"We have set twelve copper rods in cement on the rock and on the cliff at convenient places and are making an accurate survey which will connect them with reference to distance, relative levels, and angles of direction. Next month we will be able to report just what, if any, motion has taken place together with the direction of the motion.

"I feel that I must apologize for the undue length of this report, but there were so many things which seemed to be in need of reporting that the letter ran well over into the second page before I became aware of it."

Mr. Julian's rhetorical apology is accepted, but he of course knows that we are always anxious to get a full report on what goes on at the various monuments and the longer they are the better, so long as they are interesting like this one of his. We wish he had gone further and told something about those interesting cysts Mrs. Keur has been opening, but suppose he has reserved that until next month when the work will be further along.

MONTEZUMA CASTLE NATIONAL MONUMENT.

(M.L.Jackson)

"I have the following report to make for this monument for the month of July, 1933.

"Have had 1361 visitors for the month as against 1995 for the same month last year, which is a loss of a little better than one third. Have had only two parties to camp over night during the month. In the follow up of my last month's report you explained that some of the other monuments were off in their number of visitors and that you thought 'it was due to the fact that gasoline is high priced and the people are so hard run that they do not run their cars as much as heretofore.' Which explanation I accepted in part at the time, but I have just telephoned Bill Back, who is in charge at Montezuma's Well, which is situated seven miles north and east of here, and he reported that his visitors are off about nine percent compared with last year. As you probably

know, an admission of fifty cents per person is charged at the Well. He also reported a fairly good number of campers, but not quite as many as last year. He also charges 25 cents for camping on the grounds, and more if they use a cabin. I am also informed on very good authority that the local people are not as hard run as they were a year ago, which, I suspect, is because one of the two near-by mines are running that were closed down last year. Much Federal Aid money is also being spent in this section.

"Dr. H. C. Bryant, Chief Naturalist of the National Park Service, and family paid us a short visit on the 14th of the month. We enjoyed the visit a lot and hope they will call again.

"Superintendent Pinkley, his son Addison, Miss Story of the Washington Office, and Mrs. Smith of the Petrified Forest, spent an hour with us on the 19th. We enjoyed their visit and were sorry that they could not spend more time with us.

"We are having about the usual run of weather here for the month of July.

"We are all worked up here into thinking conditions are getting better with two thirds as many visitors this year as compared with last year we find that the Madam's curio business is a little better than last year."

Mr. Jackson is a little confused in what we were talking about last month. Reference to that report will show that we were trying to explain a dropping off of his Sunday peak, - not a general dropping off of all visitors. A local reason, such as he gave, would not fit Casa Grande where we show the same falling off of the Sunday peak. A general reason, such as I gave will account for the facts. Last month he was running about the same total as the year before but he was higher in 'outside' traffic and lower in local traffic than the previous June. In July he is one third off the previous July and he seems to assume it all comes off his local traffic, whereas he might be getting a loss in outside traffic.

These figures on attendance, weighted and balanced for errors, make an interesting study.

NATURAL BRIDGES NATIONAL MONUMENT.

Zeks writes, under date of July 27th, as follows:

"Dear Frank:

Seems like report days come quite often now days. Everything is lovely out here; grass and flowers have grown and bloomed better than ever this year and the Monument never was so green and beautiful before in July. We have had some fine showers and the floods from them have raised some trouble for me. However I was still healthy and strong and the pick and shovel did not hurt me very much and everything is all right again. There are still quite a lot of cars coming out to see me; two yesterday and three today. They average about one car per day. I still think we will have more visitors this year than ever before and I never was more in love with my little job.

"I am still in hopes for better days for the Monument, but we will just have to wait and see what happens in the future.

"I am just sick about our Captain leaving us but I know we will all wish him the very best of luck and we also feel that our new Chief will be just as kind and agreeable and efficient as was Mr. Albright."

I looked longingly over at the Bear's Ears from the Monument Valley country and told Miss Story all about you and your bridges and the country you live in, Zeke, but we just had to leave that for another year and so we turned back south from Gouldings place.

NAVAJO NATIONAL MONUMENT.

Horton John Wetherill writes on July 27th as follows:

"Dear Frank:

"We are having no visitors to the ruins since the party that made the two day trip when you were here.

"The ruin about which so much recently manifest interest was aroused by an exploring expedition up in this country and which was supposed to have been found last spring, was Guernsey's Poncho House. It was found first by Jackson in 1875; was visited later by Richard Wetherill in '94; by Lang and Allen in '95 and '96 and by Guernsey in 1922. You will find a map of the part of the Chinle where the ruin was found and a ground plan of the ruin in Guernsey's 1923 Bulletin of the ruins of the Southwest.

"Mr. Hargrave and his party have just finished mapping the ruin and gathering potsherds. They found the ruin interesting on account of the Pueblo 4 culture to be found there.

"Mr. Hargrave and his party are now on the way to Bluff to carry on the study of the Pueblo 4 culture to be found at that place.

"Hoping you and your party arrived home in good shape, and with best wishes for all, I am

Yours truly,
John Wetherill."

PIPE SPRING NATIONAL MONUMENT.

Mr. Horton writes on July 26th:

"Our travel has made a sharp increase over last month. This is due, I think to it being so hot and dry in this section of the country, that the local people are taking advantage of the cool water and shade we have at this Monument for gatherings such as picnics, dances, chicken roasts and swimming parties. There have been eight such parties held here this month with a total attendance of 171.

"Then we have had twelve camping parties, some staying two or three days, total of 33.

"And there is our travel that comes and goes in a hurry, not stopping to see very much of the place. Of this class I have shown about 65 through the Fort giving them the history of the place. The total number of visitors for the month I place at 320, quite an increase over last month.

"We are still trying to enjoy our hot summer and wishing that it would rain. We have not had much rain and the vegetation is suffering very much in the mountains and deserts of this section.

"The temperature has been around the hundred mark the biggest

part of the month throughout the day time and only a few degrees lower at night.

"The reason the temperature stays up at night here at the Fort is, being located on the point of the hill and to the west is a large cove surrounded by high cliffs of red sandstone and there is usually a western breeze at night. The heat that is collected by those red cliffs and stored in that cove comes out with the breeze through the night, keeping the temperature around 85 or 90 all night.

"On the 24th I took the Mrs. and the children to the head of Duck Creek for the Utah Pioneer Day celebration. There were more than 1,300 people there and we sure had a good time."

PEMBACORI NATIONAL MONUMENT.

Mr. Bunday has the following report:

"Dear Boss:

"We had 725 visitors for the month of July; a great many of them being eastern visitors who were out to see the sights in spite of the heat.

"The summer rains have made the Valley quite green and the cattle are looking very much better.

"Owing to the open shallow wells in the vicinity we have been having an epidemic of typhoid. We have had two deaths so far, one of them David Casanaga who has helped us here at the Mission many times and who recently installed our lights.

"Assistant Director, Dr. Bryant spent Sunday afternoon with us. With him was his wife and children and Dr. Taylor and family of the University of Arizona.

"On the way home from a recent trip to the Casa Grande Ruins I located about 100 shrubs of the Crucifixion Thorn tree. They may be seen from the highway on both sides of the road from the viaduct north going toward Coolidge."

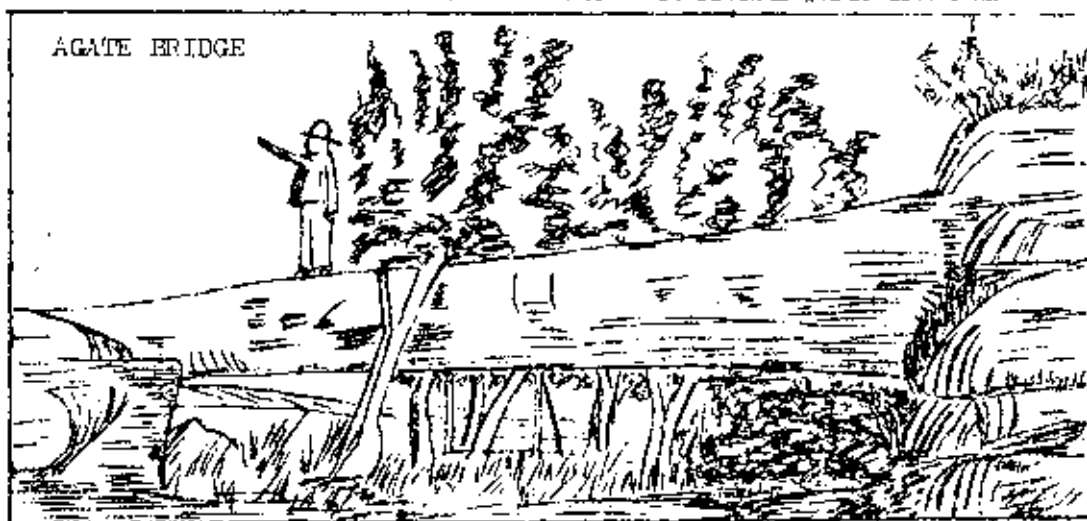
IN GENERAL

Business is picking up over this district. Travel is not quite where it was a year ago as far as the automobile tourist is concerned but the train travel is much better. Roads in general are in good condition. We have not had quite as much rain as usual over the district as a whole and the range will not go into the winter in very good shape; cattle men are worried.

Cordially,

Frank P. Bunday
Superintendent.

U. S. DEPARTMENT OF THE INTERIOR - NATIONAL PARK SERVICE



Petrified Forest National Monument, Holbrook, Arizona

August 1, 1933.

The Director
National Park Service,
Washington, D. C.

Dear Mr. Director:

Following is the narrative report on activities in the Petrified Forest National Monument for the month of July, 1933.

At the close of November, 1932, I reported to you in part as follows: "With the addition of 53,300 acres of the Painted Desert to the Petrified Forest National Monument September 23, 1932, it was naturally assumed that this act carried with it a mandate to protect, administer, and give as adequate service to the people who visit this section as our facilities will consistently permit, at the same time not neglecting any other equally part of the Monument. Much thought was given to this. Consequently, on October 2 a greeting station was established at the rim of the Painted Desert on U. S. Highway No. 66.

Neat signs were erected requesting all cars to stop and register. To date not a party has made the slightest objection to this, but all recognize the measure as an additional service to the people. In a day or so all local or through traffic plying between Arizona and New Mexico learned to keep right on with a wave of the hand or sound of the horn. These contacts have been so numerous that it has taken the services of two rangers most of the time throughout the month. However, from now on through the winter it is planned to station one ranger at this point.

The rangers are instructed to cordially invite all parties to visit the Petrified Forest or the Painted Desert section, or both. No undue persuasion has been used to induce people to pass through the Forest at the expense of parties on U. S. 66. However, this service has resulted in increasing travel through the Forest proper, has caused a great many people to view the Painted Desert from various points who would not otherwise have done so, and has given us a new and valuable contact with the traveling public."

This policy, as outlined, has been consistently followed, and so far as I know, not a single party of tourists has objected to this, but on the other hand a great majority of them go out of their way to express their thanks for the service rendered. In this manner, in nine months, we have contacted almost 100,000 tourists at the Painted Desert, in addition to some 55,000 people who have passed through the Petrified Forest proper.

We are doing this with a maximum ranger force consisting at this time of three permanent rangers, four temporary rangers, and one ranger naturalist. We have a protection problem here every day from daylight until dark. The museum is opened at six o'clock or earlier in the morning and is kept open until seven or later in the evening. It will be seen that hard work and long hours are necessary to accomplish this. Every member of the force has performed his duties in a very efficient manner. Vandalism has been kept down to the minimum, and very little petrified wood has left the Monument. No complaints from tourists have been received.

Warm days, torrential showers, and cool nights have been the rule. The precipitation for the month was considerably more than last year and a new high temperature of 100 degrees was registered the 11th. The record for the month follows: Low was 57 degrees on the 3rd. Total precipitation was 1.50 inches. Mean maximum temperature was 93.6, and mean minimum was 60.6. There were 19 clear days, 10 partly cloudy, and 2 cloudy days.

Dr. H. C. Bryant, Assistant Director of the National Park Service, and family arrived at the Forest on the afternoon of July 9, and spent the night and the morning of the next day, leaving about noon for the Grand Canyon.

Frank Pinkley, Superintendent of the Southwestern Monuments, and party arrived on the night of the 13th. Miss Isabelle Story, Editor, National Park Service, and Mrs. Smith were in the party, Mrs. Smith having gone to Lamy, New Mexico, for the purpose of meeting Miss Story. They visited many points of interest in the Southwest together.

Mr. Harry Langley, Assistant Architect of the Branch of Plans and Design, arrived here on the 10th from Grand Canyon. Mr. W. B. F. Wallace, Associate Engineer of the Bureau of Public Roads and Mr. F. N. Grant, Resident Engineer of the State Highway Department, also arrived on the 10th. Matters concerning U. S. 66, the Painted Desert proposed road, etc., were discussed with the State Engineer, and a full discussion of Monument road matters was had with Mr. Langley and Mr. Wallace. About two hours was spent in reviewing Monument matters with Dr. Bryant and Mr. Langley on the 10th also.

Other distinguished visitors include Dr. James H. Breasted, Director of the Oriental Institute of Research, University of Chicago, on the 1st, and Major General E. B. Winans of the United States Army on the 19th.

Three educational tours consisting of the Eastern Collegiate Tour, New England, with 135 in the party, the Omnibus College of Kansas with 300 in the party, and the Transylvania University Tour with 28 in the party, were contacted during the month. Lectures in the Museum and nature tours through the Forest were features of the service rendered them.

Preliminary plans for checking stations and various other new buildings for the Monument are being received from the Chief Architect's office, and all of them are fine pieces of work.

A 400 gallon iron tank was buried outside of the ranger station at Agate Bridge and a pump inside the building attached. Water is hauled from Headquarters about every two weeks. The ranger there now no longer has to carry water from the spring a half mile away, except for drinking purposes.

On the evening of the 6th a real cloudburst centered over the area drained by Dry Creek for about three hours. At headquarters, 6 to 10 miles away, on the fringe of this storm, .78 inches of rain fell. Culverts were not able to take care of the volume of water and the shoulders of the road near some of them were cut back six feet or more in many places. On the north side of Agate Bridge, Dry Creek overflowed its banks and washed away some twenty five feet of fill to a depth of over ten feet. An early inspection on the morning of the 7th disclosed the damage. Neighbors, visitors, and rangers cooperated in filling the washout so that it was passable. The Superintendent discovered that the rangers here are artists with the pick and shovel. Three hours after the washout was found cars were going through. No complaints were heard on the slight delay to the tourists, rather, they regarded it as a fine time. Damage to the road is estimated at \$1,500 and additional culverts will have to be installed in several places.

A smaller cloudburst came down on the 23rd, and water again ran over the road in one place, taking out the repair work just completed. However, the road was at all times passable and rangers were constantly patrolling it to guard against any accidents. Gallup, New Mexico, was badly hit by a flood the same day with damage estimated at \$100,000, and highways east from the Forest were badly washed.

Fortunately in answer to my wires for help you made available \$500 for emergency construction and most of the damage has now been repaired with the exception of replacing the culvert which is a job for the Bureau of Public Roads. Travel was held up for a few hours, only, on the 7th.

We don't like to brag, but we think that the view of the Painted Desert from the rim south towards the Black Forest is one of the most interesting sights in the world, and all of the visitors that have come by it say the same. The main color is an angry red, the capping beds of lava at the rim are black and down through the Desert proper are so

many pastel shades that they can't be counted. Tourists every day say they are greatly indebted to the rangers at the checking station on Highway No. 56, since they would have passed the Desert without giving it a second glance if they were not told about it. Then too, they like to come through the Forest on the way west if they have any time at all to spare, as it is only fifteen miles farther, and in the opinion of all who have been contacted, well worth the time.

Several young horned larks, evidently from the hill northwest of the Museum, have been seen around the living quarters with their parents the last two weeks. The old birds pick up small scraps of food and quickly thrust them into the open mouths of the young ones. One of the rangers recently captured a horned lark that had become entangled in the revelings of a large rag. The bird was unable to get more than three feet off the ground and the strings were so tightly wound around its leg that the office scissors were brought into play and the revelings cut away.

The Petrified Forest has recently provided a most interesting feeding ground. A short time ago a crescent court was leveled off and a flood light installed to permit night playing. The bright light attracts swarms of insects and these in turn attract a large number of toads. The toads have surely taken advantage of the opportunity and as many as six have been seen at the "feeding ground" at one time. Most of them have been identified as spade feet, "Scaphiophrys", with an occasional common toad, "Bufo." The insects captured are small night flying moths and lace wing flies, bugs, a few beetles, and some grasshoppers. The largest ones taken by the toads were a white lined Sphinx Moth and a Lubber Grasshopper.

A peculiar condition in the pupil of the eyes of the Spade feet was noticed. Under the electric light at night the pupil appears perfectly round, but when observed by daylight the pupil is a vertical slit as it should be. This is an interesting diagnostic character among the "Spade feet."

One horned toad, "Phrynosoma douglassii arnatiissimum", (try that on your radio!) was collected recently. The feces of this individual was examined and proved to be almost entirely the undigested mandibles of a species of large black ant.

The recent rains near Agate Bridge have brought out many new flowers. The most conspicuous are the Paint Brushes and the Clocos. The mat Verbenas have grown very rapidly during the past few days and should be flowering soon.

Nighty cars and ten busses camped at the Forest during the month, and eighty cars took advantage of the shade ramadas at noon. The ramadas are very popular with the N. C. T. boys as they provide the only shade between Holbrook and the White Mountains, a distance of about 95 miles.

Travel for the month through the Petrified Forest is as follows:

For the month, Petrified Forest section, cars,	4,164	13,558	17,722	"	34,588
Previously reported					40,748
Total to date					
For the month, Painted Desert section,	8,216	22,170	30,385	"	101,760
Previously reported					72,997
Total to date					
For the month, Grand total	cars, 12,369	people, 42,611			
Grand total to date	"	48,097	"		156,356
Last year, Grand total same date	58,103 people.				

These visitors registered from the District of Columbia and every state in the Union, and from Hawaii, Canada, Mexico, England, Belgium, Argentina, Canal Zone, Cuba, India, Germany, Colombia, Holland, and the Philippine Islands.

This table shows clearly that we are not getting any undue percentage of the U. S. 66 travel through the Monument. There is always a large portion of the travel which takes the shortest route and they do not care to go even 15 miles farther in order to visit such an outstanding attraction as the Petrified Forest. Our travel through the Forest proper is not 3,545 less than at this date last year.

On the evening of July 5 an item of great interest to us all came through over the radio. Harold L. Ickes, Secretary of the Interior, was quoted as announcing, "with deep regret", the resignation of Horace M. Albright as Director of the National Park Service, and that he had named Arno B. Cammerer Director and Arthur E. Demaray Associate Director, all effective August 9, 1935.

There isn't much we can say about this; - except, HAIL and WELCOME!!!
and-HAPPY BIRTHDAYS!

Very truly yours,
Chas. J. Smith,
Superintendent.

Chas. J. Smith

SUPPLEMENT
MONTHLY REPORT
SOUTHWESTERN MONUMENTS

August 1, 1933.

The Washington Office has issued Office Orders from time to time on the subject of "INTRODUCTORY STATEMENT REGARDING THE NATIONAL PARK SERVICE TO BE USED AT THE BEGINNING OF ALL OFFICIAL LECTURE AND GUIDE TOURS". This month's Supplement will contain reprints of all of these Orders. These should be read carefully by all of our Southwestern personnel in order that we might, in the course of our field and museum trips, comply with their spirit as closely as possible.

Examination of the Orders reveal that they were designed for the personnel of the national parks. With slight revisions, which I shall indicate at the close of this discussion, most of the provisions can be changed to fit our situation in the national monuments. These Orders in full follow:

"NATIONAL PARK SERVICE,
WASHINGTON.

May 20/1931.

OFFICE ORDER NO. 230.

"INTRODUCTORY STATEMENT REGARDING THE NATIONAL PARK
SERVICE TO BE USED AT BEGINNING OF ALL OFFICIAL LECTURE
AND GUIDE TOURS.

"Attention has already been called to the need for including in every guided trip a statement regarding the aims, extent, and activities of the National Park Service.

"Among worth-while statements that should be included are the following:

1. The national park system first began with the creation of Yellowstone in 1872, now comprises 22 national parks and 34 monuments, with a total of 16,262.33 square miles.
2. The national parks have been set aside for the benefit and enjoyment of the people.
3. The national parks contain the finest natural phenomena of the Nation. Therefore every visitor should gain increased knowledge and inspiration.

4. To help the visitor understand and interpret the principal features, the National Park Service has established an educational branch. Rangers and ranger naturalists in uniform are at hand to answer questions, take you on a nature walk, furnish you illustrated lectures and explain museum exhibits.
5. The roads, trails, bridges, camp grounds, telephone lines, etc., within these parks are built and maintained at the expense of the Federal Government. A park superintendent is in direct charge of all governmental activities.
6. Hotels, stores, transportation service, and similar public utilities are owned by private individuals or corporations and are operated under a permit or contract from the Department of the Interior. Such facilities are closely regulated by the Government as to rates and service.
7. Every effort is being made by the National Park Service to make your stay in this park enjoyable and profitable.

"A statement used in Yellowstone that has been found satisfactory is as follows:

"As an introduction to my lecture you will be interested to learn that this Yellowstone National Park was created in 1872, the first of 22 parks now in the national park system. Each park has an individuality of its own and has been established in recognition of that peculiar characteristic, so there is no duplication of the parks in the series. You will find the Yellowstone different from the Grand Canyon, and both again different from the Yosemite. There are also 34 national monuments, which were created because of some outstanding scientific and historic features and not primarily as great recreational centers for the enjoyment of the visitors.

"In these national parks the government provides roads and trails and a policing and patrolling force, as well as a staff of scientists who are specially trained to see that you enjoy your visit in a most profitable and safe way.

"In order to provide safe and convenient transportation and sleeping accommodations for you, the Government has contracted with responsible concerns for the installation of transportation, hotels, public camps and the like.

"The representative of the Government in charge of the park is Superintendent Roger W. Toll, whose headquarters are at Mammoth

Hot Springs. He will be glad to receive any criticisms that may be offered to better the service anywhere along the line and to receive such compliments as the service furnished in this park may merit."

"HORACE M. ALBRIGHT, Director.

Examining these seven statements carefully, we find only the first specifically mentions national monuments. This reference is clouded in the indefinite words "34 national monuments" with their area mixed in with that of the total for national parks. The remainder of the points of the Office Order show clearly that the instructions were made with national parks in mind. However, perhaps in examining them point by point, certain revisions suggest themselves--revisions by which the information desired according to the spirit of the order can be given in our guided tours and lectures. Let us consider possible revisions, point by point:

- (1) In substance it will interest visitors to know that your particular monument is "one of 20 in a regional organization known as Southwestern Monuments, with headquarters at Coolidge, Arizona. While the National monuments date back to the passage of the Antiquities Act of Congress in 1906, the 22 national parks had their beginning with the creation of Yellowstone National Park by Act of Congress in 1872".
 - a. Most of the members of our personnel do include this information somewhere along the line in the tours and lectures. However, it would be a good thing to take stock of information on our service we give during our tours and find just how much information of this kind we are giving. This will give something to work upon.
- (2) To state merely that "national parks have been set aside for the benefit and enjoyment of the people would certainly not be sufficient for us among Southwestern Monuments. In our situation it appears that we should explain that the Antiquities Act of Congress in 1906 gave the President the power to create national monuments by proclamation and that the Nation's outstanding features of historic, prehistoric and scientific interest have been so preserved. We might go further in explaining that the appeals of far-sighted and public-spirited leaders in the Southwest were directly responsible for bringing about this legislation. In short, we should familiarize ourselves with the interesting history of the National Monuments Act and acquaint ourselves with the circumstances that brought it about. Then, of course, in explaining the difference between national monuments and national parks, it will prove necessary to be familiar with the history and ideals of the entire organization. At any rate, to merely inform national monuments visitors on why national parks alone were created, and no more, would be very weak without explaining why national monuments were created.

- (3) It suffices to say that a brief characterization of the national monuments as "the Nation's outstanding features of HISTORIC, PREHISTORIC AND SCIENTIFIC INTEREST" are included among the national monuments, would serve our purpose in Southwestern Monuments. A NATIONAL MONUMENT IS NOT A "SMALL NATIONAL PARK". Consider (1) the difference in definition and (2) the difference in method of creation and the error of such assumption is very clear, indeed.
- (4) To quote the statements of No. 4 of the Order verbatim seems much too formal for our purpose. Yet, we can bring out this bit of information to the visitor in a fine way just as we are bidding him goodbye. In effect, we can say "Don't fail to join the guided parties and hear the lectures at the other monuments and parks you happen to visit. Rangers and ranger naturalists of our Service are there to help you gain the most from your visit. You'll find their guide and lecture services most interesting.
- (5) Monuments visitors so often ask why they are admitted to monuments without entrance fees to pay, whereas they paid so many dollars to get into various national parks. Here is an excellent opportunity for monument personnel to explain that the extra personnel, packing stations, etc. would absorb most of the collections when the books are finally balanced and that very little would remain for these improvements. It can be further explained that for that reason the Government has held the desire to keep admission to monuments free.
- (6) In monuments having concessions it will prove necessary to explain this point to visitors. In our monuments where concessions are lacking, it would be pointless to include this information voluntarily except as an answer to a direct question.
- (2) Since in most of our monuments visitors average about 1½ hours with us, it's best to demonstrate this point by our alertness and courteousness in giving service.
- a. This point can also be expressed in the invitation to the visitors to visit all of the monuments and parks they can as they tour the country.

On June 13, 1932, another Memorandum to Park and Monument Superintendents and Custodians ~~was~~ was issued again emphasizing the former order to include mention of the National Park Service as a bureau of the Department of the Interior.

Members of our Southwestern personnel know how often we are asked by visitors the question "Are you fellows the same as Forest Rangers, or are you different?" This question justifies the mention of the National Park Service as a part of the Department of the Interior to all parties of visitors. However, we find it drives the point home better to explain the difference between the National Park Service and the U.S. Forest Service in answer to a definite query on the part of the visitor rather than giving this information arbitrarily at the start of the trip. At any rate, there are many opportunities to give this fact in the course of a tour where it will be very interesting to the visitor to do so. For that reason we should study our ruins and museum lectures to find where best this information can be inserted.

This Memorandum stresses the mention of concessions, hotels, and camps. Doubtless, there is little point in our monuments to bringing this up unless (1) our monument happens to have a concession; or (2) our visitors happen to ask about concessions. Concessions just aren't an important item to about 99% of our monuments visitors whereas in the parks concessioners contact almost 100% of the visitors in one way or another.

MEMORANDUM FOR PARK AND MONUMENT Superintendents, Custodians, Naturalists and Historians reiterates compliance with Office Order 230 of May 20, 1931, and Mimeograph No. 63913 of June 13, 1932. Instructions in Memorandum No. 7 of May 19, 1933 to Park Naturalists and Historians deals with the same subject and emphasizes the importance of public contact men familiarizing themselves with the history, aims and ideals of the National Park Service.

Further study of literature along lines of our work is one of the most effective ways of refreshing our outlook on our work and is a very good antidote to growing "stale". Read Park Service literature on the history, aims and ideals of the National Park Service; look up more information on the variety of activities of the Department of the Interior; Re-read the basic reference books on your particular park or monument; sit down awhile and reflect how you can include some of these interesting things in your tour or lecture in a new way not tried before. You will be astonished with the results. Not only will you take renewed hold on your work and profit personally, but you will find reward for your efforts reflected in the greater appreciation your audiences and guided parties will have for the services you are giving.

Among Southwestern Monuments it appears that the best method of getting these points on the aims, ideals and policies of the National Park Service across is to (a) give some of the points in the introduction of the talk or tour and weave the remainder into the general fabric of the entire museum-field trips circuit in response to direct queries from visitors; and (2) to give a revised form of information to suit our situation in the monuments. We should certainly tell visitors when our particular monument was first set aside and why; circumstances leading up to the passage of the Antiquities Act by Congress in 1906; the difference between national monuments and national parks; and that these guide and lecture services are maintained by rangers, ranger naturalists and custodians at the other monuments and parks they may happen to visit on their tour. In making sure that we explain these general points along with the particular history of our own monument, we can best comply with the spirit of the Office Orders and at the same time be giving visitors information they usually want.

Judging from observations made during my visits to a few of the national monuments during the heavy travel season, any my visits to the remaining ones after the season was practically over, I can say that in Southwestern Monuments this information is usually completely given before the tours are finished. However, it is suggested that you examine your tours and lectures and the information you put out and if you are not giving as much on the history, aims ideals, etc. of the monuments and parks system as has been outlined above, and as you can give consistently to your short-stay visitors, see what can be done to improve the situation.

(R.H.Rose).

A great deal has been said about museums and museum cases in sections of the monthly report in the past. However, not enough has been said in any ~~case~~ instance to make a completed logical argument one way or the other. Certainly, with two new Administration and Exhibit Buildings (including Petrified Forest) at some \$10,000 each and prospects of a few more within the next few years, it's about time a rational outlook on this museum case problem be reached. In the next few pages this problem is going to be tackled. I'm going to attempt to reach some definite conclusions with reasons to support them. The conclusions as they apply to any particular monument presupposes that there is a building of adequate space and high quality at that monument. Bearing that in mind, as you read the account the statements and conclusions will be perhaps clearer.

ADEQUATE - VS - INADEQUATE MUSEUM CASES.
(R. H. R.)

INTRODUCTION

In the Supplement for June some ideas were expressed relative to what constitutes a National Park Service museum. The gist of the discussion lay in the importance attached to personally conducted tours through our museums. In the remarks there was sounded a warning that bronze and plate glass museum cases should not supplant our practice of personally conducted museum trips. It was further urged that groupings of related materials, artistic arrangements of exhibits, maps and labels should not replace our guides who give visitors the highlights of exhibit materials in the form of conducted museum tours.

PERSONALLY CONDUCTED MUSEUM TRIPS SOUND EDUCATIONAL POLICY

The fact that we may have, or may not have, plate glass and bronze museum cases should have little to do with the question of whether or not personally conducting our visitors through our museums is sound educational policy. I believe, in Southwestern Monuments, should we be able to afford ten miles of plate glass and bronze, we will continue to be sold on the value of personally conducted museum trips. Such talks will stimulate the visitor to greater interest in the collection and will be of great value in orienting the various groups of material in the story of that particular prehistoric culture. The same would hold for historical or geological collections. Now, if we're careful not to confuse conducted museum trips with "plate glass and bronze cases", we'll attack this problem from a somewhat different angle. Let us consider the problem of ADEQUATE - VS - INADEQUATE MUSEUM CASES.

ADEQUATE - VS - INADEQUATE MUSEUM CASES

After all is said and done, we can afford no better cases than we can procure through donations or appropriations, or both. Also we are quite sure here in Southwestern Monuments that we'll have to keep plugging along in many of our museums with cramped space and open front wooden cases. However, as has been amply illustrated through monies allotted to other projects by virtue of recent special legislation, it isn't hard to see that funds for museum cases may come from unexpected sources and at unexpected times. If and when, you have an opportunity to receive and use such funds for ADEQUATE cases, whether these be wood, bronze or what not, what is going to be your reaction? Is it going to be a half-hearted conviction that the best modern cases are extravagant and that the open-front or loosely constructed cases

YOU NOW HAVE ARE sufficient for all time to come, or are you going to feel like enthusiastically jumping at the first opportunity you might have to replace such inadequate cases as you might now have with new, carefully constructed modern ones?

In the Southwest what may be considered an over enthusiasm for the advantages of open front cases. I hasten to state that such enthusiasm is well-founded when considered from the standpoint of greater appeal to the visitor which comes from being able to examine closely the exhibit materials by hefting, lifting, moving it about, turning it around, and otherwise getting that peculiar appeal that comes through the sense of touch. That has led some of our personnel, apparently, to think that this particular superiority of open front cases makes them suitable from other standpoints also, for all time to come. I'd like to analyze this viewpoint carefully. It has strong points, but within it seem to be hidden serious weaknesses which we should know and consider.

QUESTIONING THE ENDURING VALUE OF OPEN FRONT AND LOOSELY CONSTRUCTED MUSEUM CASES

Practically all of the material exhibited in open front and loosely constructed cases is replaceable. Nevertheless, the total amount of first class material in existence from any particular culture is more or less limited. Thus, we as guides handle, and permit visitors to handle, a great deal of our very valuable, though replaceable, material. What will be the results of such practices on this material if permitted over an indefinitely long time?

We should strive to make our National Park Service museums into PERMANENT and ENDURING institutions, both from the standpoint of physical equipment and maintaining a spirit of giving the very best of personal services to visiting groups. We must realize that our policies of service are not designed for the crowds that will come next Sunday, or even during the next five years. These broader principles of service should be designed to hold over an INDEFINITELY long time. With this idea in mind, let us consider what is going to happen in the museum of open front or loosely constructed cases in the next 100, or even 500, years, under present operating conditions. Some rather startling ideas are developed:

1. At Casa Grande, for example, steplage is considered negligible. Yet, despite the constant presence of a guide with his eagle eye, about 4 objects of considerable museum value are stolen each year, never to return. This would mean 400 objects in 100 years, or 2,000

objects in 500 years, will be stolen if this rate continues to hold. We've little reason to think it will improve.

2. The guide, or ranger, handles approximately 10 rather valuable objects on every trip. This is done on an average of about 8 times daily through the year by the guide staff. In one year, guides will handle these objects about 3,000 times. This would be about 300,000 times in 100 years, or 1,500,000 times in 500 years! Thinking in terms of such long periods of time may perchance seem foolish until we stop to consider that if somebody 500 or 1,000 years ago had not done some thinking along these lines, we'd today be far poorer in relics of the past.

a. Ten guides making ten trips each daily would have to work about 8 years to handle the objects as much as our guides will have to handle them in 100 years. These guides would have to work for 40 years to handle them as much as they will be disturbed in 500 years. Think of the accidents by dropping, wear, niching of corners, etc. for which guides alone will be accountable!

b. Lest someone feel the ideas are too theoretical, consider that in an ordinary household where folk are too proud of their dishes to be throwing them at one another, the family finds itself eating from a new set of dishes on an average of about once in every ten years. Some do better, others do worse. Similarly, our museums will differ in amounts of exhibit materials damaged or destroyed by handling. Is it too much to expect that the valuable material in our museums today should be intact centuries into the future?

3. About 2,400,000 people will pass through the Casa Grande Museum during the next 100 years; 12,000,000 will come in 500 years. Other S.W. Monuments museums will have totals as impressive, or even more so.

a. Let these people, 1000 of them daily, come in upon us, beginning tomorrow. Let them examine this, drop that, tip something else over- in fact let them behave just like average parties do. It will take 6 years for our 2,400,000 to get through, or 30 years for our 500 years travel to be served.

b. With a lot of valuable, though replacable, material around in the open, granting that guides will be about constantly, what will this material look like after 2,400,000, or 12,000,000 people have passed through? We'll all agree that a lot of damage will be noted. We will probably differ somewhat as to the amount.

4. Open front or loosely constructed cases always seem to look dusty despite weekly cleanings. Suppose the janitor dusts open front cases once weekly. This would be 50 times annually, or 5000 times in 100 years. In 500 years this would be 25,000 times. This requires moving the materials from the shelves and replacing it.

a. Suppose janitors started taking down and putting up the material 100 times daily. In 8 months they would move the material as it will be moved in about 500 years. Think of accidents, wear, niching, etc. that will be done even with utmost care taken.

5. Add to these factors, the more rapid rate of discoloration and disintegration that will occur to materials in open front or loosely constructed cases. These factors will operate to much higher degree on materials in loose or open cases than with tightly constructed, dust-proof modern cases.

When I think of our best materials now on display and which are at best replaceable by materials 'not quite as high class', I'm moved to remark that practically all existing materials in our archeological collections are worthy of adequate permanent protection from the disturbing factors listed above. Granting that we have fine housing facilities, if the best cases are of plate glass and bronze or aluminum alloy frames as they seem to be, then our materials subjected to these damaging factors are worthy of plate glass and aluminum or bronze cases. Every large class that are being constantly tugged at, leaned or scratched, are deserving of a railing, rope or other protection.

Most of us would rejoice if someone were to discover a successful protective coating that would preserve indefinitely the walls of our ruins from weathering and other disturbances. People like to clamor over our ruins walls constantly damaging them and we pass rules prohibiting such practices. Yet, proportionately, we've as many ruins walls as we have quantity of museum materials. Personally, I can see little difference between damaging ruins walls by clamoring over them and the damage wrought on valuable museum materials by any one, or all, of the factors discussed above.

DISCUSSION OF SOME EDUCATIONAL PRINCIPLES ABOUT MUSEUMS

A. The superior educational advantage of materials in the open has been discussed and recognized from one standpoint, that of appealing to visitors through sense of touch in addition to sight and hearing (guide's talk). However, if we wish the exhibit materials to last indefinitely and contribute their all important part to our

MUSEUMS as PERMANENT and ENDURING institutions, keeping material open that's liable to damage would be hard to justify. There are heavier, more massive objects like metates and mortars which would last indefinitely without dust-proof protection. However, a metate of unusual nature or stone axe of unusual design and finish, along with pottery, scraping tools, skulls, cremation burials, etc., would certainly seem deserving of best protection.

- B. Materials behind glass cases of fine manufacture like those of the Petrified Forest, Heard and other museums, by no means lose all of their educational appeal. Artistic arrangements, groupings, and the like lend a preciousness to such materials that impresses the visitor with a feeling of respect. Such signifies that we regard the material of high value or we would not so preserve it. More permanent, undisturbed, arrangements are possible in closed cases that do not need frequent disturbing to clean, dust and etc.
- C. With the most adequate personnel possible, there are many instances where but one guide can be on duty. In fact we have a majority of instances of one guide today in S.W. Monuments. When this one guide finishes a museum trip and starts afield with a new party, he must lock the museum door behind him despite the fact that if invited to do so those he has just taken on the museum tour would like to remain and do more study. It seems visitors are entitled to this privilege even under conditions of limited guide service. Yet, I do not see how this practice of allowing "museum browsing" could be adopted as permanent policy with so much open, valuable material.
- a. It cannot be assumed that where about 40 minutes are taken for a museum tour, the guide has told everything about all of the material. As a matter of fact we are always having to judge our crowd and more or less adjust length of tour accordingly. Consequently, we cannot assume that all have seen everything to their entire satisfaction.
 - b. We shouldn't overlook the fact that some people feel like I have felt dozens of times in visiting museums; that is, after guides have given ~~good~~ good highlights in a very interesting way, many visitors prefer a great deal more looking about alone. With materials behind glass, logical groups, labels, maps, etc., such 'museum browsing' can be allowed and welcomed. To perfect a museum to this stage requires careful planning and considerable time for there's a successful way to many unsuccessful ways of reaching this goal.

The writer wishes to emphasize that we are sold on the idea of conducted museum trips in Southwestern Monuments. Therefore this discussion is not one of "Plate Glass-vs-Guided Museum Trips". It is a discussion of "Adequate-vs-Adequate Museum Cases" and was prompted by the writer's conviction that the best cases money can buy are none too good for our valuable material regardless of the fact that we might be able to replace it a half dozen times with material "almost as good". My whole object in outlining this subject lies in the hope that if, and when, good housing space is provided, we will not hesitate to get behind and push any scheme that will result in adequate cases for our museum materials. With present inadequate quarters for some of our museums, home constructed cases with closely fitted glass fronts may be adequate for the time being. BUT UPON PUTTING SOME \$10,000.00 INTO A FINE MUSEUM AND EXHIBIT BUILDING, AT LEAST \$1,000.00 CERTAINLY DOESN'T SEEM TOO MUCH TO ASK FOR ADEQUATE CASES TO PROTECT THE MATERIALS SUCH TEN THOUSAND DOLLAR BUILDINGS WERE DESIGNED TO ACCOMODATE.

(Robert H. Rose).

Frank Fish, Ranger, returned June 30th from annual leave in New Mexico. The remainder of the family are still in the cooler, higher altitudes of New Mexico.

This report has about three days to go before it will be stapled together and sent out. Coming to the end of the month we find all our artists are on other sections of our domain and unless someone voluntarily sends in a cover page creation, this report will look like a college term paper.

Bob and Mrs. Rose returned July 9th from annual leave. Custodian and Mrs. Palmer left early the next morning for Illinois to visit relatives. They are reporting a good time and have attended the Century of Progress in Chicago.

Mrs. Evenstad and Norene left early in the month for North Dakota where they will be all summer.

From all appearances, funds provided under the National Recovery Act will give most of us something to think about for a long time to come. Projects calling for 80% labor in total cost were those favored in the distribution of allotments.

SOME PROBLEMS IN GUIDED TRIPS.

From the number of times I have been asked about guided trips and the characteristics of a good guide, I believe some ideas along these lines will be of interest to others in our organization. Often after accompanying guided trips with rangers and others in the monuments I have been asked for suggestions on how to generally improve the service. Some ideas along this line will also follow.

Do I expect all to whole-heartedly agree with the ideas I'll express in the following paragraphs? I should say not; If as you read the ideas your 'temper begins to rise' it will indicate that you are doing some lively thinking as you read. And if you've differences to express, come out with them with as much argument to support them as possible.

For sake of clarity, these ideas will be set forth in a series of questions and answers:

QUESTION:* "What would you consider to be characteristics of a successfully guided trip?"

ANSWER:- Beginning with "I don't know," we'll work from there.

This is like trying to describe the taste of a good apple. About the only proof lies in the eating of it. Similarly, most of us know some guides give splendid results and others find difficulty in holding attention, interest, etc.

- a. Of course, there must be ~~some~~ enthusiasm, tact, loyalty and interest on the part of the guide to start with. Without these, there's nothing upon which to build.
- b. Another requirement is that the brand of service we give must please our visitors. With half getting 'bored' and walking away from you before you've scarcely started, there's no escaping the fact that something is wrong somewhere. This will be considered later.
- c. A second requirement is that certain fundamental points should be gotten across to all groups. Just sit down with paper and pencil and suppose you were paying for a personal telegram to someone in the east and in this telegram you were going to include the essential facts of your monument's story. You'll surprise yourself how briefly (especially if you pay the telegram at day rates) you can do this. These facts will in all probability ~~be~~ constitute the "minimum essentials" of what visiting parties should be told. Outside of these 'minimum essentials', the remaining information can be greatly varied to suit (1) the interests and enthusiasm of the parties; (2) the time available for each tour, if the day is a busy one; (3) actual time the visitors can themselves stay; and (4) conditions as to temperature and other weather conditions.

QUESTION:- "Is it good policy to adhere strictly to a rigid minimum time requirement under all conditions for all parties?"

ANSWER:- I believe the answers of all of us would be that such policy would be unwise. However, there are points bearing upon the question that are worthy of note.

- a. First of all, we all realize that "just because it takes 3-hours to tell all we know about a given ruin or culture" should not impose the requirement that we must take 3-hours or haven't been a success. The time factor will be very flexible, depending upon (1) the ability of the guide to talk interestingly and hold attention beyond the 'minimum essentials'; (2) the guide's knowledge and enthusiasm for the particular story he is putting across; (3) the guide's tact in holding interest through his skill in presentation, which method for instance should be vastly different for a group of children than for adults; (4) the length of time visitors can stay; and (5) the length of time possible for each party during rush days.
- b. I've seen instances, I believe, of where the guide felt the parties were "dumb", lacked response and appreciation, and etc, when the fault lay almost wholly in the guide himself. Sometimes the guide "gets up on the wrong side of the bed", has been up 2/3 of the night, or has grown 'stale', or in some other way is not up to 'par' in energy and enthusiasm. It's a good idea to take inventory of one's self for to constantly shift the blame for dull, listless trips to something else besides one's self is the quickest way I know of for blocking improvement in your services. Come right out and admit that there's something wrong with you when a great number of your trips are dull and listless, then you'll have something to work upon. You can't change the mill run of visitors; they'll continue to be bankers, cotton choppers, school teachers, steel workers, etc. with about the same variety and intensity of interests.

If you feel yourself 'slipping' thru staleness, the best thing in the world is to buckle down and read and re-read all you can find on your job and read something good about other regions, etc.

- c. We might again briefly state that additional reading is the surest tonic for 'staleness' you can find.

QUESTION:- "To get down to brass tacks, what are a few tangible things upon which I can work to improve my trips and make them more interesting?"

ANSWER:- One or more, of several things might be improved; (1) Maybe you are talking scientific 'lingo' to laymen; (2) you may be keeping people unduly long against their will, especially where they gave you excellent reasons why at the start of the trip that they could

STAY only a certain length of time. Sometimes visitors do this as a "stall" and after getting interested, have no limit to time. This isn't always the case, however, and if the entire party must go soon, then we should give them as good service in the time they have as possible. Of course, in the short time you can't tell them 'all you know' about your ruin; nor could you in a 50 word telegram. It's surprising how much you can say in a few words if you just have to.

- a. Sometimes guides repeat themselves in the same language too often. The same idea driven home in several different ways is good psychology, but not in repeated words.
- b. A general fault of so many guides is that they'll keep a crowd of visitors standing too long in one spot. A man you would stand in one spot and listen to for 20 minutes without at least walking a few steps, would have to be a "whiz" to hold the interest of a crowd without many getting restless and standing on first one foot and then the other, or leaving you flat.
- c. If you'll analyze your tours, you'll find perhaps a half dozen places where you can break a long stop into two or three short ones. Try it; there are few better ways of improving than this.
- d. Did you ever attend a lantern slide lecture where the speaker had about 50 slides from which to talk, and yet he seemed to almost wear you out by keeping one slide on and talking about it for a long time? A successful illustrated lecturer among other things, to be successful, MUST "keep the ball rolling" by good prompt, snappy changing of slides. These slides MUST be arranged so that in developing the lecture ~~and~~ the idea in one slide seems to MELT into the idea of the next slide. This must be done with minimum delay on any one slide. In our guided tours, there's a lesson in this. For example, you don't have to keep visitors standing out in front while you give a 20 minute dissertation on four types of masonry, or the re-occupation by Mesa Verde Peoples and proof therefor, or the full story of building the coursed mud walls. There are a dozen places along the line to illustrate and build up those points gradually. I daresay, not one of us has been without a fault of this kind at some time and to sit back and think we're perfect guides and that restless people are "dumb", just won't get us anyplace.
- e. Read and re-read can be ^{not} emphasized too much as a tonic for ~~growing stale~~. Whatever we do, we should not be too hasty in fastening the blame on "dumb" visitors when they leave us, get restless, show no response or seem not to appreciate our services. Something is wrong-certainly- but it is 10-to-1 a fault, or faults, of us as guides rather than of the visitors.

QUESTION:- "In archeological parks and monuments like many of South-western Monuments and Mesa Verde, what are some specific ideas on subject matter improvement that might be worth while?"

ANSWER: There's nothing quite so good as having an entirely new individual come in who knows nothing of your monument but who is interested in learning about it, and getting his reactions. Many of us get into a "rut" and instead of applying more "power" to get out, we just get deeper.

a. Well, in some instances our guides talk "solid mud wall construction", "four types of masonry", "sequence of construction" of rooms and sections of buildings without touching much upon the broader problems of (1) theories of how ancestors of these cliff dwellers and pueblo builders came to this continent; (2) touching carefully on theories as to where the peoples have gone and where they might be represented today; or (3) the community of spirit possessed by these people who cooperated to build homes as contrasted with the great edifices of the ancient Old World build by thousands of slaves driven to their work, etc.

- B. Building up certain broader facts and relationships furnishes a perspective which cannot be build up without careful study and thought on presentation. I'd like to be so bold as to say that building up a fine perspective, showing people just where your particular ruins and ancient peoples fit in with the whole scheme of Southwestern Archeology is just as important as an array of academic facts about pottery, stone and mud mortar, or caliche, or other narrower subjects.
- c. To be taken on a tour without this perspective being efficiently built up would be comparable to studying the history of the World War as a series of 'battles' and omitting reference to (1) military and economic rivalries dating back several decades; (2) former territorial divisions; etc. which, after all, must be understood in order to really know much about the World War. I believe the comparison of these points with our guide trip and lecture organization contains a worth while lesson.

When thinking over problems such as those above, we become keenly aware of the need for a meeting, or call it a conference, every so often in which we would talk over these ideas and discuss their application to individual monuments problems. Lacking in these meetings, perhaps dealing now and then with problems in this section of the Report may be of benefit to some of you. You may not agree with me on all points. I'd say "GOOD" if as you read along your 'blood pressure' would rise and you concluded about every ten lines that my ideas are "haywire". That'd indicate you were thinking which is the first requirement to getting places along these lines.

MUSEUM OBJECTIVES.

Some time ago Dr. C. P. Russell, Field Naturalist, kindly allowed us to examine an outline of his on a talk he gave at the American Association of Museums meeting in Chicago. Reading these points over, The Boss felt that they should be reprinted here for what they will be worth to us. In Southwestern Monuments, if we know nothing about museums in a broader sense, it's getting time that we did because before the program of projects under special recent legislation some of us will be faced with equipping exhibit buildings. I quote the outline in full:

SOME FACTS DEVELOPED IN NATIONAL PARKS MUSEUM WORK

First seven points-----C. P. Russell, Field Naturalist.
Eight to twelve, Inc.-----R. H. Rose, upon Dr. Russell's request.

1. In the national parks the real museum is the out-of-doors. Man-made museums, here, are to be regarded as a species of elaborate label.
2. Focal point museums and trailside shrines, if wisely located, will reach the park visitors and make intelligible the natural phenomena in which they are interested. These museum and shrine sites become interrogation and exclamation points along the line of travel.
3. Publication of Trailside Notes, freely distributed to the automobile driving visitor, will weave into a common fabric what he reads in park literature, what he picks up from fellow tourists, and what he sees in park museums.
4. Park Museums, like other museums, are not sufficient unto themselves. They are no stronger than the staff that mans them. Park Naturalists(Directors) and Assistant Park Naturalists(Curators) should be scholars, not technologists, if the museums are to be real "Nurseries of Living Thought". The problem of adequate personnel in national park educational work remains to be solved.
5. In addition to "trailside" or subsidiary museums each park and monument requires a central or headquarters museum properly equipped with a library and facilities for office and laboratory work. This central museum is required as a "hub" for the general educational work(field trips and lectures) of the park.
6. Each park or monument museum project should assume the duty of securing representative study collections from its immediate locality.

7. Desirability of research by park museum staff members does not now receive due official recognition. Training of temporary ranger-naturalists and permanent staff members, preservation of data, and the promotion of conservation cannot be done efficiently unless investigations are pursued.

(additional points---R.H.R.)

8. The same high degree of competency and familiarity with methods of scientific investigation should be expected of staff members doing research work in national parks and monuments as are required in scientific research in universities and other research institutions. Unless research work in parks and monuments is of a quality to insure recognition, rather than disapproval, of scientific leaders in various fields, such work had best be left undone.
9. In order to educate the lay public, Park Service museums must go a step further than research museums. Their climax is our beginning. We must go then one better by taking their neatly labeled and technically classified materials, arrange them artistically and attractively into logical groupings, and by means of graphic portrayal through labels, maps, charts, pictures, control labels connected with subsidiary labels; and other popularization methods, make all of these materials fit into the general scheme of telling or interpreting the main story about which the materials were associated or had their origin.
10. Designs, sizes and shapes and shelf arrangements of exhibit cases in Park Service museums should be dictated wholly by the types of case designs required for most efficient popularization and graphic portrayal of the auxilliary stories and main story. (The more thought given this statement, apparently the more significant it becomes).
11. Park Service museums should be so constructed and so equipped with cases and other furnishings as to make them PERMANENT and ENDURING institutions. This demands the same high quality and efficiency be considered in equipment as were put into the design of the museum edifice itself.
12. Educational staff members including Park Naturalists, ranger naturalists and ranger historians, as trained interpreters of scientific truths and theories, should keep informed in current developments along the frontiers of the several ~~several~~ fields of science with which their park or monument is concerned. This can be done by establishing harmonious relations with research staffs of leading universities and other scientific institutions, and by studying current periodicals in several branches of science. When the technologist, alert

To the happenings in science and himself a trained investigator, is also an inspiring leader, teacher and guide, he then becomes a scholar. We should keep these facts in mind in selecting the staff that runs our museums and general educational work.

While we're on this matter of Education and Conservation, here is a Report of Wild Life Conditions in Bandelier National Monument, submitted to the Director by George M. Wright, Chief of the Wild Life Division. Bandelier is among the newest in the monuments group and the information in this report will give some of you greater acquaintance with this newer of the monuments. There's nothing cloudy in these facts that got right to the point on problems there. The report follows:

"On June 20 Ben Thompson and I made an inspection of Bandelier Monument. We were accompanied on this trip by Mr. Pinkley and Mr. Vint. We were guided by Ranger in Charge Ed Rogers.

"The following observations bear on the development of this Monument:

1. Bandelier has greater wild life potentialities than any other monument of the Southwest.
2. In developing the whole ethnological story of the Southwest as it is exemplified in our monuments and parks here will be found the best opportunity to show living examples of the animal and bird species that were part of all the early cultures.
3. The luxuriant growth of box elder, cottonwood, alder, willow, and other ~~many~~ trees and shrubs which fairly buries the clear stream of cool water in Frijoles Canyon is perhaps the greatest charm of Bandelier and certainly the factor which will contribute to the comfort and pleasurable relaxation of visitors above all else.
4. Though there are many species represented in the wild life of the Monument, the fact that wild turkey are present in winter is so important as to overshadow all others. North America's great game bird is scarcely represented in our parks today, and a good exhibit of the famed Mexican turkey of the Southwest is particularly desirable.
5. Cattle range in the Monument and are reported to be very destructive to the living when they seek shelter close to the cliffs during storms.
6. The concessioner wages a steady warfare on hawks.

7. There is a strong suspicion of poaching in winter. There is no ranger assigned to the Monument during that season.

A.

In view of the conditions enumerated in the above seven points, we strongly urge the following for immediate administrative action:

- (1) It is most important that a ranger be on duty at the Monument throughout the year. Another winter should not pass without this step being taken.

Some of the benefits that would accrue would be:

- (a) A year-round observational record of wild life and particularly of wild turkeys will then be available.
- (b) Cattle damage to the fast perishing ruins will be eliminated.
- (c) Poaching and disregard of other park rules governing birds and animals will be stopped, whereas at present the ranger in charge can have little effect. Knowing that during the critical season when protection most needs enforcement there will be no one there, what can the ranger do to stop abuses even while he is on hand?
- (d) No attempts to make reintroductions seem advisable until there shall be year-round protection of the Monument, until existing forms are put on a satisfactory basis, and until the development plans ~~#####~~ for the Monument are fully understood.

In a single season beavers might do irreparable damage to the stand of mature broad-leaf trees that is one of the glories of the Monument.

All these matters were thoroughly discussed with Mr. Pinkley and Mr. Vint, and this report as written is intended to embody our mutual conclusions.

Respectfully submitted,

George M. Wright"

Walt Atwell has visited most of the Monuments of the Southwest. A letter that follows was received a few days ago which The Boss releases for purposes of this section. Perhaps someone can come forward with a guess as to what is the matter with Walt. Probably Julian is the most competent in our circle to diagnose the case:

(S.W. MONUMENTS)

T.

(JULY SUPPLEMENT)

Walt writes from Wind Cave as follows: "Dear Pinkley:

"I arrived at Wind Cave July 2 in a somewhat psychoneurotic state though upon cursory examination the medical students on the seasonal ranger force suggested the possibility of schizophrenia, psychochromaesthesia and psittacosis. The Studebaker got me up here with no special trouble. There were, it is true, frequent sounds of internal dissension which only the most delicately shaded anapa-topoetic language could describe. My Mnemotechny is, in fact, inadequate to bring them all to mind. I was also so alarmed at times by the weakness of one of the tires that Freeland suggested the possibility of suspending a quantity of paradichlorobenzene from the upholstery to counteract the unfortunate impression one received on entering the car. I myself felt that the same ~~purpose~~ purpose would be served, and more esthetically, by introducing into the compartment bouquets of iris and lilies, beautiful monocotyledonous flowers which bloom profusely in the Black Hills.

"I met Mr. Gable from the Washington Office, while at Wind Cave. While there are those who feel that the President speaks disestablishmentarianismatically and acts accordingly, Mr. Gable believes that the Park Service will not suffer thereby and that we may all dismiss the fear of ending our days in eleemosynary institutions." "S. Leaving for Devils Tower in the Morning." Walt"

AND NOW the Boss is moved to remark that Bob has done a good job down to here and then turned the Supplement over to me to finish on a hot afternoon when it is over a hundred in the shade and I am just in off a field trip and as dry as a powder horn as far as interesting facts are concerned.

ANYWAY, Bob slipped up one time when he was worrying about a cover page. He might have known old Ed Rogers would come pinch hitting along with a first class job like he always does. And so we have an El Morro front cover this month, showing the Inscription Rock itself and a couple of the old inscriptions.

The inscription in Spanish is known as the Onate inscription and dates from 1606. It runs as follows:

Pase por aqui adelantado don J^o
de Onate del descubrimiento de la mar
del sur a 16 de Abril de 1606.

Translation: Passed by here the Governor Don Juan
de Onate from the discovery of the sea
of the south on the 16 of April of 1606.

This inscription needs a little back-ground before it can make the proper impression on you; as it stands, it is just a plain statement of

FACTS, but there is a world of romance behind these facts which can only be understood with a little explanation.

Here, on the 16th of April, 1606, while your friend Shakespeare was still very much alive and hardly known outside his little circle of immediate companions, came a bunch of hard riding, weather beaten men who had straddled their horses and left the Rio Grande behind them the previous year. They rode west and south where folk tales said there was much water. They came by way of Acoma, where they climbed that same trail we climbed a few weeks ago; by way of El Morro and Zuni going on to the Hopi Villages, and then jumping off into the unknown they crossed the Little Colorado and went down through the Prescott country; struck the Colorado and followed it to the Gulf of California. Here they began re-tracing their steps and on the 16th of April arrived at El Morro, saddle sore, worn and weary. About sixteen hundred miles of hard riding behind them, about two hundred more to go. they stop and take the worn and broken gear off their animals and turn them out to graze and rest. Camp was made near the pool which was 'round like an orange' and which Mr. Vogt cleaned out and restored a few years ago. One of the men, more educated than his fellows for he could write and most of them could not, wandered along the cliff a hundred yards or so from camp and, taking out his steel stillette he cut his story on the rock. How simple it sounds: "Passed by here the Governor Don Juan de Onate from the discovery of the sea of the south on the 16 of April of 1606." Sixteen hundred miles in the saddle and that is all he has to say about it! And today you can hear at any gas station along the highway thirty miles to the north how terrible the roads are and how the tourist has to suffer in traversing this forsaken country. So your tourist speeds through a country filled with romance and grows enthusiastic over the missions of California which were founded 163 years after this inscription was placed on El Morro.

I spoke of a couple of inscriptions in Ed's drawing. The other is the pictograph over which the Spanish inscription was carved. It was probably put on there a hundred years or so before your friend Columbus was born. There are some ruins up on top of the rock which are at least that old and before we get through with our researches at that monument I feel sure we will find evidences of something really old; way back of the large ruins which are so evident.

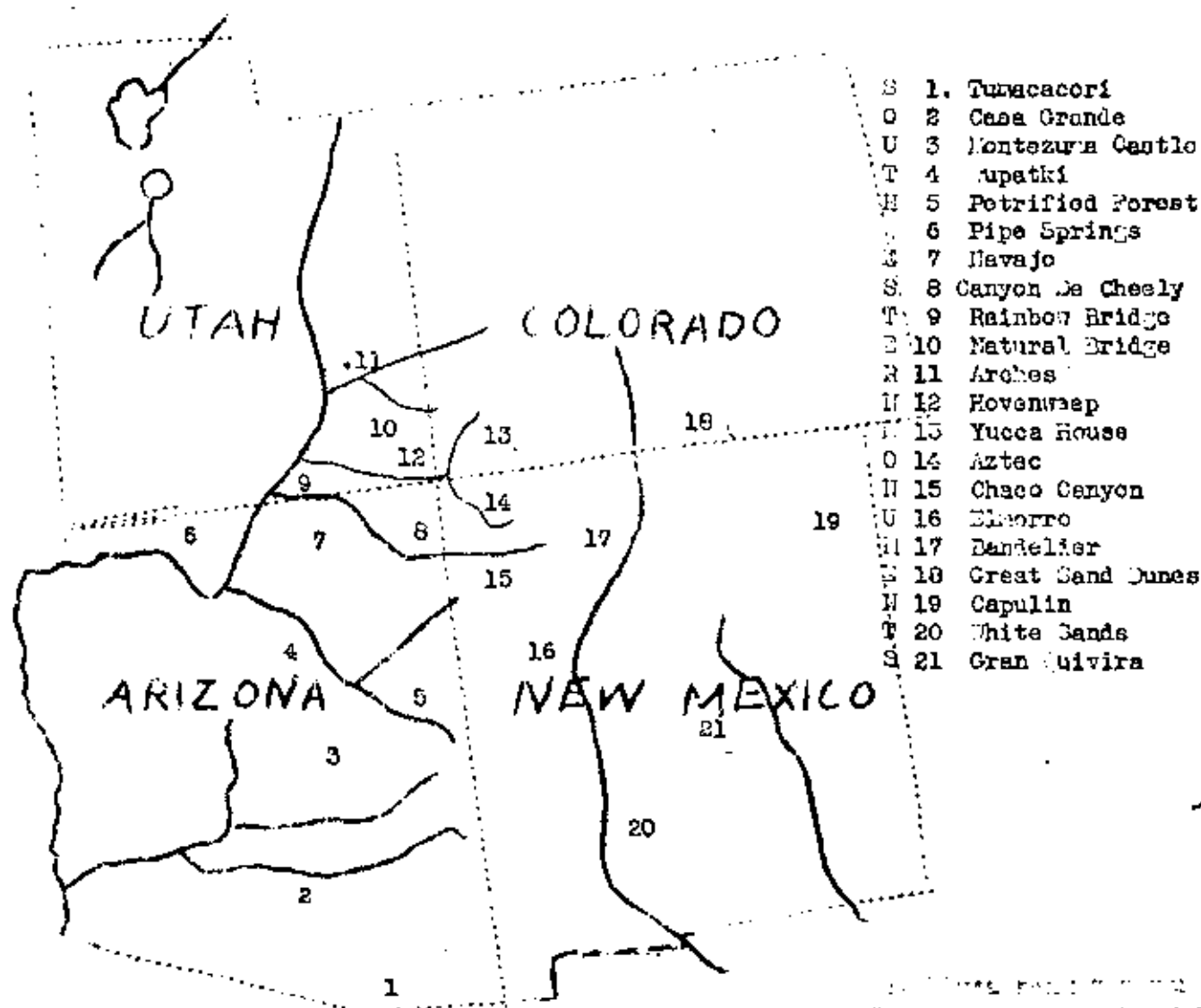
Note how Ed has conformed to the old style of Spanish lettering in his title. Pretty good work, I call it. Thanks, Ed.

And so we come to the end of this report and the end of the month of July, 1933. It has been a good month; we have had a lot of work and a lot of fun; now for the big changes of August and may both the work and the fun continue.

Cordially,

The Boss

SOUTHWESTERN MONUMENTS



UNITED STATE

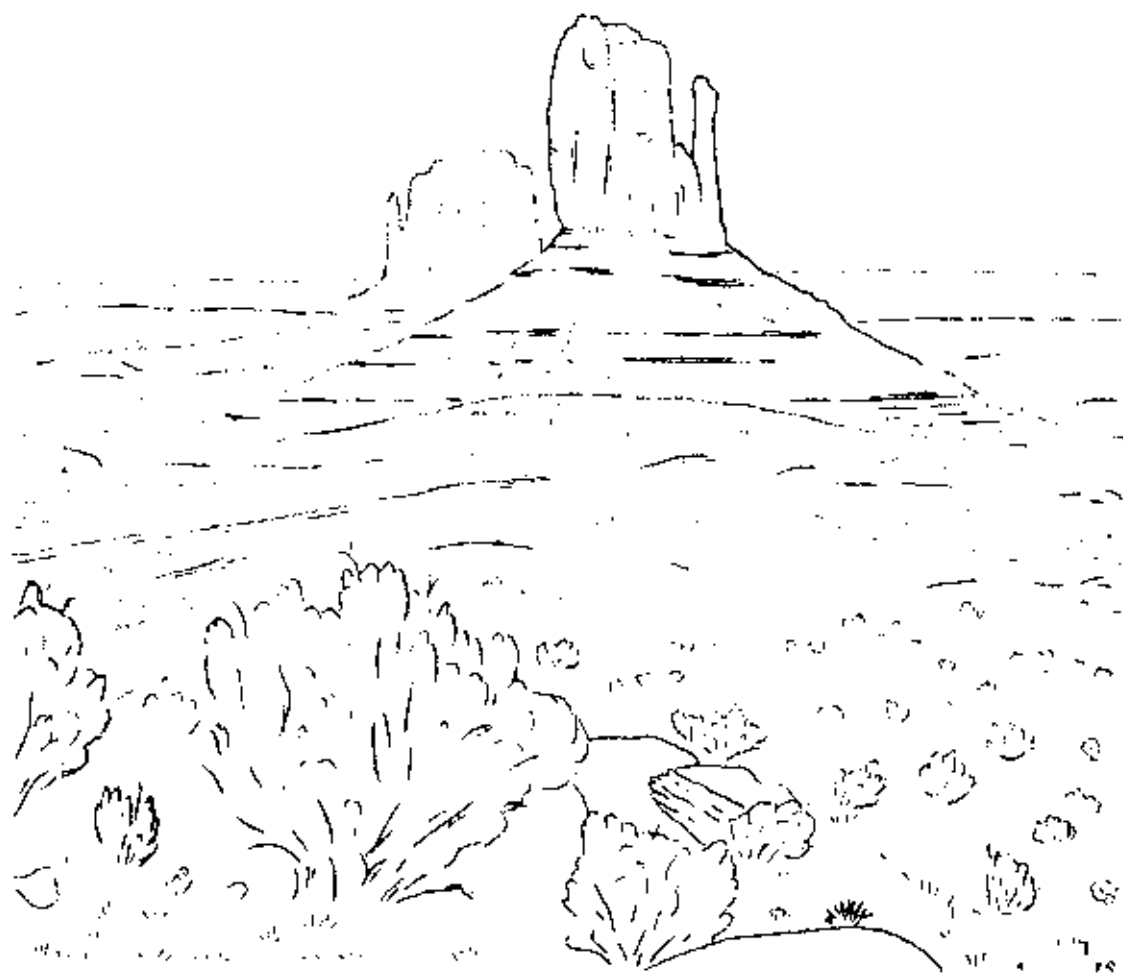
DEPARTMENT OF THE
NATIONAL PARKS

File Copy

SOUTHWESTERN MONUMENTS

MONTHLY REPORT
SEPTEMBER 1933

OCT 7 1933	
☒	RECEIVED
☒	BURNEY
☐	EQUIPMENT
☐	ACCOUNTS
☒	LANDSCAPE
☒	VINT
☐	ROAD DIARY
☐	JOB DIARY
☐	ANSWERED
☐	FILE



MONUMENT VALLEY ARIZONA

TABLE OF CONTENTS.

THE REPORT.

Weather and Roads-----	1
Asst. Supt. Rose-----	1
Bandelier National Monument-----	2
Casa Grande-----	2,3,4
Capulin-----	5
Chaco Canyon-----	6
El Morro, E.Z.Vogt-----	7
Alfred Peterson-----	8
Gran Quivira-----	9
Montezuma Castle-----	10
Natural Bridges-----	10
Pipe Springs-----	11
Tumacacori-----	12
White Sands-----	12- 14
Aztec Ruins-----	14

THE SUPPLEMENT.

Chaco Canyon Cavities Report-----	A - K
Pipe Springs History-----	L
Attendance record for the year-----	M
Personnel matters-----	N - O

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF NATIONAL PARKS
BUILDINGS AND RESERVATIONS
SOUTHWESTERN MONUMENTS

Coolidge, Arizona, October 1, '33.

The Director,
Office of National Parks,
Buildings, and Reservations,
Washington, D. C.

Dear Mr. Director:

September has passed and, while the thermometer at our headquarters is still playing around a hundred, there is a fall feeling in the air and in the course of another two or three weeks we will be able to wear a coat to work.

Weather for the month over this district as a whole has been good and the roads have remained in good shape for travel.

In the northern part of the district visitors will decrease and where we have men in charge of monuments they will begin to lay out the winter work and prepare to do those things which were left undone in the rush of the summer visitors. In the southern part we will begin to key up and get ready for the busy season of the year.

Over the district as a whole we could handle more visitors than we are getting but if they don't come to us we have enough other work to keep us busy.

REPORT OF ASST. SUPT. ROSE.

"Early in the month we were able to comply with the request of Dr. Chas. B. Lipman, Dean of the Graduate Division, University of California, for a sample of earthen wall from a prehistoric ruin. Accompanied by Benny Lee, laborer from time to time at Casa Grande National Monument, I drove to a place between Casa Grande and Florence known as Adamsville. Here were standing walls of the type that met Dr. Lipman's requirements. We were glad that we were able to carry out this request and yet not damage our ruin walls on the Monument in any way.

"Dr. Lipman, plant physiologist, has found colonies of living bacteria in old adobe bricks taken from the walls of the California Missions. He was anxious to obtain samples of prehistoric ruins walls for the purpose of applying his studies to more ancient materials.

"Considerable time was spent in organizing some notes on Petrified Forest for the resources edition of the Arizona Republic.

"This month's report carries an historical sketch of the Pipe Spring National Monument written by Leonard Heaton, Acting Custodian. Leaving headquarters on September 11, Mrs. Rose and I visited Pipe Spring and spent four days there. Measurements of the rates of flow of all sizeable springs on the monument were made.

"While there I met Harry Langley, of the Branch of Plans and Designs.

We went into problems of future development and maintenance of that Monument.
"Pipe Spring is our only Monument to early pioneers in the Southwest System."

BANDOLIER NATIONAL MONUMENT. EDGAR ROGERS, CUSTODIAN.

"Dear Boss:

"September shows 634 visitors, an increase of 16% over the same period as last year. The weather has been favorable to travel, although showers have been frequent. Frost has not yet occurred but cool nights and falling leaves show that fall is near.

"The roof of the quarters was re-covered during the month and it is to be hoped that the leaks are stopped for a while. The old roofing paper was quite rotten; cracks occurred faster than they could be patched.

"Mr. and Mrs. John Will Faris, and Mr. and Mrs. Charles Ansdon were among the visitors this month."

At the end of the month word comes to us that we will have a winter camp of the E.O.W. at Bandolier. Thus E. will go from one busy season into another. Sixty or eighty miles of trails to be rebuilt and a general clean-up of the dead and down stuff on the floor of Frijoles Canyon ought to keep a 200 man camp fairly busy during the winter season. We also hope that this camp will mean the release of some of our Public Works money which had been set up for trails on the floor of Frijoles Canyon and down the Rio Grande so we can use it in some much needed construction and thus advance our six year program at Bandolier materially.

CASA GRANDE NATIONAL MONUMENT. HILDING P. PRIMER, CUSTODIAN.

"Dear Mr. Pixley:

"Once again the time has arrived for reporting the activities of the Casa Grande National Monument.

"The most important thing of course is our visitors record and once again we have to report a decrease from the preceding year. In September, 1932, there were 1,286 visitors and in September, 1933, only 1070, a decrease of 216 or about 17%. Our visitors record for the coming year will more truly reflect actual travel conditions, for this year we changed the method and only counted those who were actually conducted through the ruins or museum. Always before, everyone entering the Monument had been counted. During the coming year we will keep a separate record of those who drive in but do not visit the ruins under a guide.

"The 1070 visiting the Monument this month came in 317 cars, an average of between three and four persons to the car. 703, or 65%, were from Arizona and the remaining 35% from 37 other states and Washington D.C., as well as four foreign countries. The whole 1070 were personally contacted on 198 trips through the ruins of Compound A and 182 museum tours. October should see a decided increase in visitors as we go into cooler weather.

"Our yearly travel record shows some interesting statistics: We reported 21,771 visitors for the year, a decrease of only 124 over the preceding year. Had we used the same method of counting as last year we would have shown a decided increase. These 21,771 visitors represented every

State in the Union, the District of Columbia, Alaska, Hawaii, and 22 foreign countries. Arizona, of course, furnished the most with a record of 13,663 or 63% of the total. California was second with 3,114, or 14 %; Texas was third with 607; Illinois fourth with 432; and New York fifth with 370.

"During the year 2,777 trips were conducted through the ruins, an average of over $7\frac{1}{2}$ trips every day of the year. 2,504 lectures were delivered in the museum, or an average of seven lectures per day.

"A table showing the geographical distribution of visitors at Casa Grande for the travel year is attached.

"The month has been unseasonably hot. Mean Maximum was 101.8; mean minimum was 67.2; the mean temperature was 84.5. The maximum temperature for the month was 112 on the 5th; the minimum was 54 on the 25th and again on the 27th. The total precipitation was .74 inch. There were 24 clear, four part cloudy and two cloudy days.

"Three projects under the Public Works program were started during the month. \$900 had been allotted for camp ground development. 210 feet of new ramadas in accordance with the plans of the Branch of Plans and Designs were erected and twenty new picnic tables were constructed. This work has been completed and during the coming month the new and old tables will be painted and five fire places will be constructed. A crew of four men were given a total of 19 six hour days of labor each and two men and a team of mules were employed for seven six hour days.

"\$900 had been allotted for water extensions and a crew of two men have been changing all $3/4$ inch water lines to $1\frac{1}{2}$ inch and installing new utility faucets so that it will be possible to water all shrubbery with a maximum of 50 feet of hose. These two men have worked ten six hour days.

"The third project is the repair of two quarters; quarters 3, now occupied by Robt. M. Rose, Asst. Supt., is being given a coat of stucco on the outside to prevent weathering of the adobe walls. Quarters 2, occupied by Ranger Frank Fish, is being remodelled throughout and is also receiving a coat of stucco on the outside to prevent weathering of the adobe. A completely new built up roof is being built on quarters 2; new floors will replace the worn cement floors; hardwall plaster on the inside will replace the sand plaster, and new built in kitchen conveniences will add to the pleasure of the occupants. Ten men have been used on this project for a total of 53 $\frac{1}{2}$ ~~64~~ six ~~44~~ hour days.

"Labor on all these projects is being obtained, according to the President's instructions, through the National Re-employment Service and it has been found to be a mighty satisfactory method of handling employment. All men furnished thus far have been excellent workmen. Common labor is being paid 50¢ per hour, Senior Laborers, 65¢ per hour, skilled labor helper's 85¢ per hour and skilled labor \$1.00 per hour. We work six hours per day and five days per week.

"All projects are going along satisfactorily. Two projects remain to be started yet; a new residence and walls around the administration building.

"Ranger Fish is occupying the old Superintendent's quarters during the remodeling of quarters 2. Assistant Superintendent, Rose, moved into his permanent quarters during the month. This is Quarters 3 which had been used by Mr. Evenstad. After Mr. Evenstad moved down to Tusasacori and before Mr. Rose moved in, the quarters were given a complete overhauling and were repainted and redecorated.

"Much good to the community has resulted from the labor employed on and the supplies and materials purchased for these projects. So far, these are the only projects under way under the Public Works Program in Southern Arizona.

"Last month I reported the construction and installation of a new water cooler for visitors use together with a few remarks about Landscapers. Under date of September 21st, I received the following from Assistant Architect, Harry Langley: 'Copies of monthly and yearly reports of Southwestern Monuments received, read and enjoyed with special attention given to the write-up on the water cooler. I feel quite gratified that I am almost as famous as Herb Kreinkamp with his out-swinging door.' 'Yesterday I received the photograph of the revised installation and, judging from the tilt of the camera, there must have been something stronger than ice water in the cooler; possibly some form of christening liquid.' In that last paragraph Harry must be waxing facetious; I am sure he knows everyone at Casa Grande is a teetotaler.

"Anyway, the new cooler is a dandy and we admit that its location is much better according to Harry's idea than according to ours.

"And last, but not least, stray cats are not as safe at Casa Grande since the arrival of the new Chief Clerk.

H.F. Palmer, Custodian."

DISTRIBUTION OF CASA GRANDE VISITORS.

Ala.-----	2 cars	15visitors.	North Car.-----	5	13
Ariz.-----	3652	13663 "	N.D.-----	2	9
Ark-----	6	44	Ohio-----	67	279
Calif.-----	1156	3114	Okla.-----	52	225
Colo.-----	87	265	Ore.-----	21	77
Conn.-----	7	26	Penna.-----	31	189
Del.-----	2	5	R.I.-----	8	24
Florida-----	5	21	S.C.-----	1	6
Georgia-----	5	17	S.D.-----	4	21
Ida-----	8	45	Tenn.-----	6	45
Ill.-----	100	432	Tex.-----	170	607
Ind.-----	30	156	Utah-----	83	98
Iowa-----	27	120	Vermont-----	0	2
Kan.-----	37	117	Vt.-----	3	25
Ky.-----	6	40	Wash.-----	52	170
Louisiana-----	2	18	W. Va.-----	4	24
Mo.-----	4	17	Wisc.-----	26	127
Maryland-----	5	26	Wyo.-----	12	42
Mass.-----	18	107	D. C. Columbia--	13	60
Mich.-----	62	219	Alaska-----	0	9
Minn.-----	25	96	Hawaii-----	0	4
Miss.-----	1	16	P.H.-----	0	3
Mo.-----	54	242	Argentina, 3; Australia, 1; Chile, 3; China, 2		
Neb.-----	7	32	Canada, 52; England, 3; France, 4; French Indo		
Nev.-----	29	104	China, 1; Germany, 7; Guatemala, 1; Haiti, 1;		
N.H.-----	10	35	Ireland, 3; Italy, 1; Japan, 4; Luxemburg, 1;		
N.J.-----	1	5	Mexico, 7, 31; Norway, 2; Panama, 2; Porto		
New Mex.-----	16	57	Rico, 1; Scotland, 1; Siam, 1.		
New York-----	69	180			
	76	370			
Total; 7,226 cars, 21,771 persons.					

CAPULIN MOUNTAIN NATIONAL MONUMENT. HOMER FARR, CUSTOMER.

"My dear Mr. Pinkley:

"I am sorry to report that just a little over fourteen thousand visitors have called upon the Capulin Mountain National Monument during the past twelve months. This is a considerable decrease from the total of the previous year, but I might add that I was unable to control the depression, which I believe was partly the cause of the drop and another large factor was the fact that the latter part of this summer the road up the mountain has been in pretty bad condition. We have not had a cent this summer to repair the road and this gave the traveling public a very bad impression. Of course news like this spreads rapidly to others who will not then drive up over the bad road.

"Here's hoping that we can still find a few dimes to repair the road this fall."

And, speaking of poems; here is a poem on Capulin by Elizabeth H. Emerson which ought to be preserved, so we will just file it here in the monthly report:

Oh! Capulin!
You stand majestic on the plains;
Silent and cold and proudly calm,
Your sides grass-grown and wound about
By circling paths whereby men scale your height
And look below to checkerboards of green.
Upon your rim one gazes into space,
Far over meadows to mountains clad with snow,
Or turning, walks within your hollow heart
And treads on the cinders lost to glow and die.

Oh, Capulin!
In these years long since gone,
What secret passion burned within your breast?
Did some wild rage of hatred smoulder there,
The fruit of envy, jealousy or strife,
Until, one day, you could no longer chain
Its mighty forces, and in one upward heave
Cast forth the evil thing, leaving when done,
Only a hollow where had stood a graceful peak?

Or may it be that deep within your heart
There glowed some nobler, warmer fire,
An unrequited love which burned by night and day--
Became a pain you could no longer hide?
Perhaps you could no longer hold your head
Proudly above your neighbor sister peaks,
And with one sudden spasm of despair
Your sorrow burst from its green-clad cage
And your great heart broke,
Casting its remnants far and near upon the plain.

CHACO CANYON NATIONAL MONUMENT. HURST R. JULLIAN, CUSTODIAN.

"Dear Boss:

"The 662 Chaco visitors for this month came from 19 states, Italy, Germany, England, and Washington D. C.

"The activities of the month have been concerned with catching up on many little things that I did not have time to do during the rush of summer. As you remember, the water ran through the museum in torrents on the occasion of your last visit. It seems to me that we must have carried tons of earth up to the roof to repair it and to prevent the occurrence again. The office roof and the roof of the tool shed have also had a recovering of earth.

"There are several other places that need attention too. These, we hope, will be attended to this month.

"I do not think that I have reported the completion of a small ramada at the back door of the residence. This is for shade for the water barrel. The sun shining on the drinking water made it a little too hot for drinking.

"The report on the matter of the cliff cavity excavation has been completed. A copy is inclosed for your use, and copies have been sent to the various scientific institutions requesting them.

"A group of very interesting visitors came to the Chaco this month, perhaps I should add, as usual. Among them were the following persons:

"General Wood and the staff of National Guard Officers.

"Mr. and Mrs. Clifford Wight. Mr. Wight is a prominent English Sculptor.

"Charles Collier, Assistant Indian Commissioner, came with his staff of builders, to get ideas and plans for construction on the Indian Reservations, so the ancient Chaco architects have at last been recognized.

"Dr. and Mrs. Alexander Goetz, of Germany and Pasadena, spent several days with us. Dr. Goetz has been working at Cal-Tech with Millikan and Einstein.

"Dr. and Mrs. Lee E. Deets, of the Department of Sociology of the University of South Dakota stayed several days. Dr. Deets will return next summer in order that he may complete a sociological study of the Chacoqueños for publication.

"Mr. and Mrs. Hemen were also visitors. Mr. Hemen is here on the matter of conservation with the Interior Department.

"Dr. and Mrs. Seltzer, on research work for the National Research Council paid us a visit. Dr. Seltzer will publish his studies on Physical Anthropology as quickly as he has had the opportunity to get back to the National Museum and complete his studies on the skeletons which were taken from Bonito by the National Geographic Society Expedition.

"I was asked to attend a conference at Santa Fe which was to arrange the details of the construction on the road to Chaco. The Highway Commission met with the various Superintendents of Indian Reservations, Governor Seligman and interested parties. They came after me and I joined the procession. The sum of the deliberations were about as follows:

"The State is to start immediately on the road from Thoreau to Crownpoint. This road is to be oiled. The Indian Service will have, by the time you receive this, started a gravelled highway from Crownpoint to Chaco."

Hurst.

If this road goes through as it is planned, Chief, we are going to be badly undermanned at the Chaco by the latter part of the summer next year. Visitors will flock in there as soon as they are assured of a good road.

EL MORRO NATIONAL MONUMENT. E.Z. VOGT, CUSTODIAN.

Mr. Vogt writes, under date of September 22, as follows:

"Dear Pink:

"A heavy lift on a pump weighing several hundred pounds proved too much for me. I loaded the pump onto a truck but crippled my torso for a few days. I managed to drive home forty miles by myself but ever since arriving I have been in bed. It's a great rest for I am getting time to read, write and enjoy the luxury of having my good wife wait on me and serve me with good meals in which she joins me by my bedside. Such rest and treatment will relieve me in three days more, so it's hardly worth while even to make a claim on my life insurance policy.

"I think the most notable news of the month is covered in the enclosed clipping from the Albuquerque Journal in which you will read of the final approval of the Grants-El Morro-Matque road project. In addition to what I send from the press, I have a letter from Mr. Glen O. Macy, State Highway Engineer, in which he tells me the survey will start at once.

"The short ten mile link from the El Morro and Department of Commerce Air Port to Ramah, is, we understand, to be approved a little later.

"This will be the final outcome of a fifteen years effort to get El Morro on a road which will bring us many visitors as well as provide an outlet to the railway both to Gallup and Grants for a rich region of agriculture and stock interests. The cooperation of the people in signing petitions and writing letters to Governors and Highway Commissions over so many years is highly appreciated.

"On the eighth I met Mr. Glenn O. Macy, State Highway Engineer, at Grants by appointment and brought him over the new road which the Forest Service and the CCC boys have completed for 30 miles from Grants, leaving but 20 miles to build to Ramah. Mr. Macy and I met Ranger Peterson at El Morro and had a short visit there before making the balance of the 200 mile trip I guided him over that day.

"A strong demand for the protection of the perpetual ice Cave and other ice caves further in the lava beds led Mr. Macy to wire me to meet engineer of the Park Service, Col. Elwood and engineer Geo. Bawl of the State Engineer's force at the ice cave for a reconnaissance of the region. Unfortunately my isolation at our sheep ranch resulted in my not receiving the wire in time to meet them, though I hurriedly threw together an outfit of surveying instruments, field glasses, gun, bed and chuck and drove from our home ranch to the rendezvous - the Ice Cave, only to learn the party had been there and gone back to Santa Fe. However sorry I am not to have met them, I feel that they have started a fresh movement for the protection of that interesting area either by Federal or State means.

"Mr. Peterson is greatly missed at the Monument. I had a final conference with him the day he pulled out to re-enter the University of Arizona and was able to thus take over the responsibilities of caring for El Morro with a good understanding of the latest status of all things out there.

"The Monument has been visited recently by numerous members of the National Guard on strike duty at Gallup.

"Col. Staples, of Coolidge, New Mexico, had a party of Vermont friends out recently.

"We regretted not to be able to entertain Mrs. Ickes, wife of the Secretary of the Interior, as we had planned to do, but she left this country

shortly after the Inter Tribal Ceremonial and went to her home in Chicago and Washington.

"Frost still holds off and grass and flowers look fine both in wild and cultivated areas. Wild ducks are arriving at our lakes. Several bears have raided Indian corn fields not far off. Deer are increasing.

Even Z. Vogt."

From Mr. Alfred Petersen, Temporary Ranger at El Morro, who went off duty the middle of September, we have the following report which is the last one from him this season.

"Dear Boss:

"I expect to be ready to leave for Tucson tomorrow, therefore this is my final report for the season. As anticipated, visitors have not been numerous since schools opened, but there have been about 120 at El Morro for the first half of September despite the fact that we have had several days of rain.

"The rains, incidentally, have filled the reservoir in the water cove to the point of overflowing without quite doing that.

"The inscriptions have been gone over with an application of DRIWALL to preserve them against weathering. The housings for translation cards are in a rather incomplete stage as the 'roofs' of wood have not been added. We should have seasoned and planed 1 by 4 stuff for this job; however I tried doing it myself with rough lumber which we had at hand. I found the lumber almost water-logged from rain. It was out of the question to use in this condition, and I doubt if it is yet dried sufficiently to do the work. This is one job I shall do the first thing next season, - if and when I come to this station. The housings, however, are adequately protected with heavy roofing paper as a temporary arrangement. Nearly all the translation cards show water stain, due to having been wet before being adequately protected, and I do not have new ones to replace them. All cards are readable, however. A weak spot in the housings is the joint between the side pieces of the frame and the top piece -- just a little crack about two inches long which was tight at first but opened up due to weathering and lots water in from driving rains. I have plugged up the cracks.

"I too had an invitation to attend the Inter Tribal Ceremony, sent me by the Association, but I thought it more than a polite reminder not to miss the show. After reading the monthly report and learning of Hurst's three-day sojourn in Gallup at the expense of the Association, I see what a chance I missed. But I doubt if I would have spent more than one day anyhow, because El Morro has some of its best visitors during the Ceremonial and they are entitled to some service.

"Say, Boss, Frank Fish and Hurst Julian are not the only ones that can find potatoes under mild or questionable conditions. A badger has been doing some excavating in a corner of the large ruin on top of the mesa and dug out some pieces of charcoal. Having taken Dr. Douglass' course in tree ring interpretation, and having been requested by him to do some work of this nature, I was immediately passing around the opening of the badger's hole, with the result that I have a large number of small pieces of charcoal some of which may be workable, and - two little potatoes which were growing at the mouth of the hole on top of the ruin. Also there are some eight or ten charred small corn cobs, an Ollivella shell, some bones and a tooth, probably of some animal.

"I certainly was flabbergasted to see the reprint of the letter written to you by one of my campers, but it makes a fellow feel good all over to have such fine people express such flattering opinions of him. These particular campers, as you no doubt know, have done a lot to make this my most satisfactory summer on this job.

"Regarding the write-up of my remarks about deserts, this was a little more than I expected but it is all right with me. Just recently I had a local man tell me that sheep had run over and grazed a field until it absolutely had no more grass on it than a cement floor, to use his own simile. Then he took the sheep off for three months, rain came, and that field now has the best grass he knows of. This incident illustrates several things, (1) what happens when a field is over-grazed, (2) what happens when over-grazing is stopped, which supports Hurst's contention; but if there had not been sufficient rainfall the grass would not have come back, and (3) that this particular field was level, whereas ground on a slope would very likely have been cut by gullies with the first heavy rain, and, after all, it would appear that a great deal depends on the nature of the rainfall.

Alfred Petersen!"

Under the heading: "Some Chiseling Gets U. S. Oked", we picked the following story regarding El Morro out of the press reports this month.

El Morro, N.M., Sept 21.-- Chiseling, both plain and fancy, was given the hearty approval of the U. S. Government here today.

And the chiseling was done by 38 members of the Civilian Conservation Corps. "A

"Returning several days ago from a brief visit to Zuni, the El Morro National Monument Custodian found that in his absence the forestry workers had covered a large area of the famed inscription rock - bearing carved messages dating back to 1609 -- with their initials.

"A report to their commanding officers brought the corps members back to the famed rock in double quick time.

"They spent a day chiseling more earnestly than this section of New Mexico had believed it could be done, until there wasn't a sign of an extraneous initial on the gleaming sandstone surfaces.

"The army sergeant whose initials led all the rest lost his rank."

GRAN CIVILIAN NATIONAL MONUMENT, MR. W. H. SMITH, CUSTODIAN,

Mr. Smith says, under date of September 22 that he has had 395 visitors enter the monument during the month past, and that they came in 96 cars.

"This shows a decrease in travel as against the same month last year and also as against the previous month this year. Some of this loss can be laid to the fact that our local people are very busy with the bean harvest and cannot spare time to visit.

"Weather conditions were favorable for travel the greater part of the month with but very little rain and comparatively cool, clear days.

"With the rainy season nearing a close we expect to spend the few dollars we have left in repairing the approach road. I hardly think there will be any more heavy rains that would be likely to do any damage.

"Late last Sunday afternoon a nice new shiny coupe rushed up to the mission with two occupants; an elderly lady and gentleman. I walked up to open the museum and show them around but they declined my invitation saying

they were in a rush as they drove 140 miles to visit the ruins not knowing the roads were so bad and now they had no time left to look at the ruins that afternoon as they must go back home to get their parrot in out of the cold. They promised to come back some day soon and spend the day.

F. H. Smith.

MONTEZUMA CASTLE NATIONAL MONUMENT, MARTIN L. JACKSON, CUSTODIAN.

Mr. Jackson reports as follows:

"For the month of September Montezuma Castle had a total attendance of 1,735, with 718 registrants in the building, making the second largest month for attendance this year. Weather conditions up to the last week have been unsettled with two or three very heavy rains in the Valley. Roads have been rough for two or three days at a stretch, but the road workers are keeping them as a whole in better condition than usual. The Government road signs have proven to be a considerable help in guiding visitors.

"I have just learned that two of the Federal Aid projects at the Castle have been approved, so it looks like some more of the Walter Attwell days may come again soon. We will be glad to see him again if he comes.

"The C. C. C. camps have paid us several visits this month, and seem to be a pretty well-behaved and interested bunch of boys. One group of 129 came in the party, and while they were present Ranger Curry lectured to 173 people at one time.

"Zeke Johnson, Custodian of the Natural Bridges National Monument, paid us a visit and we enjoyed his stay. Among other interested visitors was Dr. H. P. Poston, grandson of the first southwestern Indian Commissioner of that name, and who made the old Mexican village of Tubac a town. Dr. E. W. Mitton, of Enid, Oklahoma, who camped with us for three weeks last year, and is greatly interested in our parks and monuments, came again this month from Enid to camp here for a week. Said he just couldn't forget the Castle.

"Mrs. Curry has been visiting friends for the past three weeks in Los Angeles, and has just returned on a single drive trip from the coast. The Mrs. and myself were unable to make our proposed Castle publicity trip from here to Phoenix by boat on account of storms and floods, but intend to do it later.

Martin L. Jackson."

NATURAL BRIDGES NATIONAL MONUMENT, ZEKE JOHNSON, CUSTODIAN.

Zeke lost his notch stick or something last month. At any rate he didn't keep track of the days right and his report got in too late to put in our monthly report. He really did send one and here are such parts of it as are not yet obsolete: "All is well with us out here. It seems that we are getting our share of tourists. There were 27 out this last week in one bunch from Florida. Three big cars went out today from California with 11 people. We about average one car per day and they all seem to enjoy their trip. The roads are in fair shape and the water at the Monument never was as good this time of the year, we have more than had our share of showers out there this year, and every flower in the Canyons has sure done its share to improve the looks of the country. I am sure happy when people come to see me and I try to do my best to make their trip a pleasant one.

On September 27th, Zeke writes as follows: "This has been a pretty slow month -- too much rain, and bad roads. However there have been 161 visitors register and I can count 46 that did not. Most of them were out early before I put the register out, and I am sure there will be at least 40 register before the roads close, making a total of 247.

"The roads are being repaired now and the weather is ideal, so I am sure a lot of people will be out yet.

"I have been doing some more repair work on my trails the last few days."

PIPE SPRING NATIONAL MONUMENT, LEONARD HILTON, ACTING CUSTODIAN.

"My report for the month of September is as follows: Our travel is only one less than last month, 284 for September and 285 for August.

"My travel by months for 1932 and 1933 is as follows:

~~Month~~	'32	'33			
October	140	750	May	120	145
November	107	165	June	175	145
December	50	180	July	375	329
January	15	45	Aug.	450	285
February	20	--	Sept	411	284
March	60	60			
April	117	160			
			Total	2,040	2,494

"I might say in reply to Tom Charles as to starting our report with the amount of travel, that you have to report travel to show that people are interested in your monument; if you didn't, you would find yourself without funds. Then too, it shows that you are busy, or partly so, depending on the amount of visitors. Also it is required that the total travel be sent in to the Washington Office September 30 of each year and a monthly record helps a lot in getting this number.

"I think we have had a wonderful season even though our winters have been so that cars and even horses could not travel through the latter part of January until the fore part of March. The high months of travel in both years are September and October because of the work on the Zion tunnel road at that time which threw traffic around this way.

"Our weather is still dry with the nights getting cooler as we near winter. Last Wednesday, September 20th, a good rain hit just north of us but it seems that out on our flats it just can't rain at all and the feed condition for live stock is going to be very bad here. Most of the cattle men are wanting to sell most all they have this fall if possible, for they figure there will be a great loss if there is any snow at all.

"I enjoyed the visit of Bob Rose and his wife very much. They got here September 12th just at dusk and stayed until the morning of the 17th. We also had Mr. Langley and Mr. Stevens of the Park Service and Mr. Ford of the Union Pacific System on the 15th. I feel that Mr. Rose and I went over the needs of this Monument pretty thoroughly, especially the water question as we measured it and checked it over several times. I know that what has been the common belief as to the water flow here at Pipe Springs has been too high. Actual measurement is about 41.7 while I had always thought it to be

about 75 gallons per minute.

"To have some one come in and suggest things that ought to be done and criticize my work and how I am doing things is like sending a battery over to town to have it charged, for I have found that I was getting stale on some things and now have more pep and a desire to do more in making the Monument attractive and desirable to see.

"We gave Mr. and Mrs. Rose a chicken supper at Moccasin on September 15th. Most of the people around Moccasin attended and we surely enjoyed the occasion. Tell Bob that several of the women have told me to ask him to come back and sing again as he has one of the best voices for singing out of doors that they have ever heard.

"Nine of our Indians have got work in one of the C. C. C. camps for the winter and a large per cent of our unemployed are in these camps; there are five of them within 150 miles from here. "

"Leonard Henton."

TULACACORE NATIONAL MONUMENT, GEORGE L. BOUNDY, CUSTODIAN.

Mr. Boundy reports as follows: "Visitors for the month, 426. This has been the quietest month since I came to the Mission. Nogales, Sonora is doing away with much of the red tape necessary in entering Mexico and the Chamber of Commerce in Nogales is putting on an advertising campaign to bring tourists into Mexico by this route. I believe this will bring many visitors into this country during the winter season.

"Martin Evenstad joined our force here at the Mission the first of the month and we have been overhauling the pumping plant and lighting system and getting things in general fixed up for the winter season.

"Treasure hunters are very much in evidence at the present time. They spend quite a bit of money among the local people in the way of labor, guides, etc. If it wasn't for our police dog it would be necessary for us to look after the Mission and grounds during the night time as they are all anxious to do some digging on the monument.

"Superintendent Pinkley paid us a short visit and looked over the water problem with us. As always, we were very glad to see the Boss.

"The last heavy rains have raised the water levels in the wells and have done much for the cattle men in the way of feed.

"There are many places in this vicinity of interest to the students of Arizona history. I have heard many interesting tales of the country lying between Mt. Lemmon, Oracle, and Winkelman. I spent a night and two days in that country and I believe there are a few portions of it as rich in historical and archaeological material."

"George Boundy."

WHITE SANDS NATIONAL MONUMENT, TOM CHARLES, CUSTODIAN.

Mr. Charles has another good report for this month and it is full of information for the use of our other men who can direct visitors down to Alamogordo if they know what they are talking about when they direct them.

"There is so much to report this month. Sunday, September 3rd, was full moon and over one hundred car loads of picnickers spent the evening at the sands. Eighteen car loads from the town of Tularosa cooked their

in 20 years, we had a report of a mountain lion there. white mice and white lizards to white coyotes, but this week, for the first time "We got lots of reports on wild life at the Sands. All the way from people have passed through the Monument this month.

day only, shows 106 cars from seven a.m. to seven p.m. partial count shows 180 cars per day, while our own partial count, for one partial count shows 138 cars per day. The Las Cruces Chamber of Commerce "We are unable to give you a count this month. The State Highway

5th. 17 miles at this end and just the Sands, will be called for completion on Oct. Cruces and of it will be let for completion on October 3rd. We hope that show this as a first class all weather highway. Eighteen miles at the Las Custodian objected. The New Mexico Highway Department, on their 1933 map, White Sands Monument indicates a secondary road? Well, the Monument "Did you notice that on our maps the little black line through the in the world if you please!

institutions? You cramp our style, Mr. Superintendent. Say the latest that we are 'Head of the biggest Gyp outfit in the U.S.'. But why the "By the way, we appreciate the publicity you gave us in stating first report went on page 15.

If we do not get this C. C. C. camp we will always feel that it is because our the Southwest's most renowned mirrors occur, and to the Sands themselves. red lakes, the sand beds, to Miraflores Point, where the 'Giant's Tracks' and truck trails are good enough; all they want is some way to get out to the under the feet, but roads, never! The Chamber of Commerce advises that though hard surfaced and polished, are not 'roads.' Truck trails come turned something. Do know that 'truck trails for administrative purposes' C. C. C. camp at the sands this winter. We may not get it, but we have "It looked for a time this month like we would surely have a 200 man

may give us some light on the question, 'Why are the red lakes red?' the Chemical Laboratory at the State College hoping that Prof. Botkin of color in any of this life. At present we have a sample of the water at powerful magnifying glass showed plenty of life in the water but no trace form, while around the edges of the pool the water was still red. A their bloom, the white body of water was changing to a milky color, true to area. Unfortunately we were a few days late to catch the said red lakes in the found the phenomenon in a small salt spring just off the National Monument delegation of the Chamber of Commerce joined in the search for the red lakes. The 'Monument' custodian volunteered the services of the automobile and a these lakes and springs in the monument area changing to a crimson every fall. The Chamber of Commerce has attempted to discover the cause for Sands. This too, is the season when the lakes are red at the Great White

tracted many to the sands for the evening this month. Over 125 visitors met at the sands that night. The ideal weather has at- University of Pennsylvania discuss the habits of the Mesquero Apache Indians. come up over the Government after which they listened to M. B. Opler of the the sands. They gathered on the highest drift and waited for the moon to evening. The next evening 65 Rotarians and Rotary wives ate their supper at Paso, Las Cruces and Alamogordo. It was a lovely party and a perfect Three car loads came from some place in Oklahoma. The others came from El support on the trip was furnished by the Alamogordo Chamber of Commerce.

"One of the cowboys in that vicinity found the lion and shot at him, wounding him slightly. The man followed him for two or three miles into the sands and when night drew near the man went home. Next morning investigators found that the lion had turned back when the man did and followed the man's tracks up to within a hundred yards from camp. Their foot prints showed plainly on the sand.

"There seems to be no occasion for weather report or road conditions. Our Chamber of Commerce advertises 345 clear days per year and there is never a day that cars are held up on the White Sands Road on account of weather conditions."

"Tom Charles"

Which is a good report and just to show Tom that it's all right I might point out that again he has made page 13 in the report and we will see what comes of it.

And about those 'truck trails' Tom, I have heard of some pretty funny truck trails being built in the Southwest, but I haven't heard of any being built by the Park Service, have you? I mean any of the kind you refer to. My advice is; let us so live that when the Head Man's inspectors come around, as they will sooner or later, and check up on any C.C.C. work, we can look them right square in the eye and tell them to go jump in the lake! Our Chief and the Head Man of our Department are both square shooters; to them a truck trail is a truck trail so far as I have observed.

After reading your ideas about a weather report, Tom, I am wondering why you don't explain the change of color in your lakes yourself. Seems to me it may be a fairly simple matter: when the alkali content gets too high and becomes dangerous to life, what more natural than that the lakes should turn red? Then when the alkali content is reduced to the safety point they would of course turn green. You drop one of those Chamber of Commerce weather reports in one of these lakes and see if the alkaline content doesn't go up and turn the lake red in 30 minutes.

AZTEC RUINS NATIONAL MONUMENT, JOHN WILL FARIS, CUSTODIAN.

Mr. Faris also lost his notch stick and came mighty near not making this month's report. A little more speed next month, Johnnie, if you want get into the A class where Aztec belongs.

"After all the start we had the fore part of the month, our visitors total 1090 for September. This is a decided drop over last year. The heavy rains of the past two weeks may account for a partial drop.

"Ranger Thompson left me on the 24th. His services as usual were beyond all that is expected of a ranger and I feel very fortunate in having such a man to help out here.

"I am getting in touch with Chuck Richey relative to our museum plans. Official notice has been received to proceed and as soon as I can get any information, I will pass it on to you."

IN GENERAL, Chief, things have gone all right among the Southwestern Monuments during the month of September.

Cordially,

Frank Richey
Superintendent.

SUPPLEMENT TO THE
SEPTEMBER REPORT OF THE SOUTH-
WESTERN MONUMENTS

Dealing with people and things
of general interest.

We want to put into the record for future reference the following report from Custodian Hurst R. Julian, of the Chaco Canyon National Monument, on some work done at that Monument during the past summer. The report follows:

The cliff cavities from which we have taken some rather remarkable artifacts of the ancient Chaco quenos were, like so many other things, discovered quite by accident.

The story involves several other considerations and studies. It started with a search for the probable origin of the fill or debris which covers so many of the ruins of the Chaco. Apparently the several feet of material was washed in, or had been carried in by the winds to serve as a protecting mantle for the most remarkable ruins in the United States.

Some of the debris fell from the tops of the walls, possibly much of it was blown in by the winds, and perhaps some of it had been carried in by flood water. Speculating upon these possibilities, the first step in the rationation came during a rain storm.

The cliff walls of the Chaco present the appearance of a miniature Yosemite after a hard rainfall. From every water course a stream is poured into the Chaco to fall from the top of the cliff. It was reasoned that possibly there had once been a talus slope at the base of this cliff which had caught the falling water and as a consequence, had been washed into the ruins below.

This thought was considered from every angle of approach. It was repeatedly turned over in the conscious as well as the sub-conscious mind. Verification was sought, or, what is perhaps as well, disproof of the hypothesis. In the ramifying considerations it was realized that if there had been a talus slope of importance, there certainly must have been at least some talus slope houses or villages upon it.

The speculation turned to the postulated talus houses. It was noticed that there was evidence of there having been such dwellings. The cliff wall still bore testimony in the form of the holes which the talus dwellers had chipped into the face for the accommodation of the ends of the secondary roof beams of their houses. Indeed, Mr. J.B. Hamilton, an engineer of the Office of National Parks, Buildings, and Reservations, discovered what is perhaps the first house in the land to have had running water.

Beneath the horizontal row of roof beam sockets, at the base of the cliff near Chetro Kettl, was the lower end of a trough which had been carved in the face of the cliff in such a manner that it caught the rain water from the cliff and conveyed it to the house which once stood upon the talus slope which had partly washed away.

All these ruminations and as yet no thought of the cliff cavities. That connection came during a session of contemplation in a room in Pueblo Bonito which has the not common feature of tall crypts suggesting the all

safe of the more modern residence.

What treasures had these once contained? Had they held priceless turquoise jewels, or had they been fashioned for nothing more spectacular than the deposition of ordinary food stuffs? But the possibility of cliff cavities was suggested.

If some people went to the trouble to build depositaries in the walls of their houses, surely the talus dwellers would have availed themselves of the cists which nature had provided for them in the wall of the house which was formed by the cliff. If such had been the case, possibly there just might be some little thing that the Chacoquenos had overlooked while preparing for the exodus, and there was a possibility that it might still be in the cliff depositaries.

A ladder was secured and placed beneath what appeared to have been a portion of a house. A cavity was found in the cliff wall, and in the cavity was a perfect specimen of a planting stick as perfectly preserved as though it had not lain in seclusion these many hundreds of years.

The success of the operation led to further investigation with the consequences that much of the material which is exhibited at the museum of the Chaco Canyon National Monument was recovered in this manner.

CATALOGUE OF MATERIAL TAKEN FROM CLIFF CAVATIES PRIOR TO JULY 8, 1933.

A-1-a. Specimen mount containing shelled corn, beans, bean pods, corn stalks, leaves of corn plant, squash seeds and rind, pigeon nut shells, and misc seeds, including one that suggests an oat seed.

A-2-c. Restored pot containing corn cobs, three of which have sticks inserted in the ends.

A-3-c. Restored pot containing corn cobs, two of which have grains of corn on them.

A-4-c. Restored pot containing corn cobs.

A-5-c. Restored pot containing bits of squashes, rind and as yet unidentified stems.

B-1. Bottomless basket, $5\frac{1}{2}$ inches in diameter, approx. 3 inches in height.

B-2. Circle of Yucca leaves, $2\frac{1}{2}$ inches in diameter, outside measurement.

C-1-a. Specimen mount containing cords of various sizes, evidently made of Yucca fiber; yucca leaf thong.

M-1-c. Cardboard box containing bits of corn cobs, stalks and leaves, bits of grasses, and what appears to be the rind of a cactus fruit, bit of feather quill which may have been carried into the crypt by rats or a bird; piece of what appears to be lignite, and several as yet unidentified odds and ends.

1. 236 corn cobs of varying sizes and conformation. The larger ones are from six to seven inches in length. The seed rows vary from four to ten. One fragment has been charred.

FOUND TAKEN ON JULY 6 - 15, 1933.

approximately $\frac{1}{2}$ mile down the canyon from Pueblo Bonito. This cavity is in the cliff wall above the Kin Klut So ruin. It is LIST OF THE MATERIALS TAKEN FROM THIS CAVITY U2.

These materials were taken from holes which we have called P.S.-1, P.S.-2, and P.S.-3. These holes are in the cliff wall between Pueblo Bonito and Chetro Ketl. Evidence suggests that there will be several more deposits in this wall between these two ruins.

W-8. Bundle of weeds bound together with yucca leaf thongs, approx. 6 inches long and $1\frac{1}{2}$ inches in diameter. This suggests the handle of a whisk broom.

W-7. Hard wood planting stick, approx. $\frac{1}{2}$ foot in length, shaped as a gigantic sword. Excellent specimen.

W-6. Ditto.

W-5. Ditto.

W-4. Ditto.

W-3. Arrow shaft with sinew bindings.

W-2. Arrow shaft with sinew bindings; with red band and a black band painted on shaft underneath the feathers; if the feathers were in place. Only the ends of the feathers remain under the bindings.

W-1. Arrow shaft without feathers or head, but having sinew bindings, one of which is stained green.

R-2. Wood carving similar to R-1.

R-1. Wood carvings which, when viewed from one position, represent a human head, including a painted face, head dress or hair, and neck. Measurements taken from top to bottom, approx. 5 inches; from front to back approx. $\frac{1}{2}$ inches. Then held with face upward, the figure suggest the head of a bird, or possibly a round bodied fish. The ear of the man forms the eye of the bird, the man's nose is a crest for the bird, and the neck of the man is split to represent the open mouth of the bird. The man's hair or head dress is a hook for the bird.

P-1-c. Cardboard box containing miscellaneous assortment of potsherds, plain, smooth, coiled (corrugated), and decorated.

N-1-c. Cardboard box containing unidentified bones which seem to be of rodents, and possibly sheep; also a bit of horn unidentified. (This cavity had been occupied by some bird such as a hawk or owl.)

2. Many fragments of corn stalks, leaves and corn cobs.
3. Three kernels of corn.
4. Unidentified fragments of bone.
5. One black and white potsherd.
6. One fragment of basketry, approx. 2 by $2\frac{1}{2}$ inches. Woven of more or less coarse material. Diagonal technique.
7. One fragment of basketry approx. three fourths inch square. Very much finer materials used in same weave.
8. Bits of woven fabric, apparently cotton, dyed red.
9. One beautiful though small fragment of double weave cloth.
10. Bits of blue and white twisted string.
11. Small wads of what appears to be cotton in the raw state. Also bits of material which might be cotton bolls.
12. Fragments of squash rind to the number of 29.
13. Fifteen square knots tied in stripped yucca leaf thongs.
14. One fragment of cordage with two overhand knots tied in it.
15. Seven pieces of small cords.
16. One fragment of twisted osier, $\frac{1}{2}$ inch long.
17. Two squash seeds.
18. Three Yucca seeds.
19. Several pinon nut shells.
20. Several of two kinds of unidentified seeds.
21. section of feather quill.
22. Two pieces of leather or one piece of leather and one piece of closely woven material.
23. One fragment of stick with two bowls burned in it. Evidently part of fire making apparatus.
24. Bits of mineral pigment. Yellow and pink in color.

CONTINUED EXAMINATION OF CAVITY U-2

1. Agricultural Products and other plant materials.

Matzo;

Cobs, 601.

Cob fragments, 425.

Stalks;

16

Husks

8

Kernels;

3

Special notes;

1 small cob with stalk protruding from ~~6/11/61~~ stalk end.
1 small double or split ear.
1 fragment, approx. 1 inch square, matted corn husks.

Squash or Courd.

Stems

21.

Pieces of rind

81

Seeds

11.

Cotton.

1 cotton ball

Several bits of raw cotton.

Seeds:

Piton shells, 16.

Several unidentified seeds of several species.

Woody plant material.

8 sections of reed (arrow reed) $2\frac{1}{2}$ to $6\frac{1}{2}$ inches long.

Many unidentified twigs, sticks and pieces of wood.

Many yucca leaves, usually stripped.

Some juniper bark.

2. Evidence of fire.

2 charred pieces of corn cobs.

2 charred pieces of corn stalk.

Several bits of charred corn husk.

Several pieces of charcoal.

1 piece of burned bone.

3. Artifacts. (Materials showing manipulation by the hand of man).

Yucca leaves twisted and stripped as if used as thongs or in basketry, 38.
3 small pieces of yucca leaf with resin.
30 knots tied in stripped yucca leaf.
1 knot tied in juniper bark.
1 knotted stick or twig
1 narrow strip of yucca leaf, approx. 16 inches, coiled, two knots.

Braid;

1 square knot tied in braided material.

1 3 strand braided striped yucca leaf.

1 three strand braided rope, 3 inches long.

String;

Several fragments of white cotton string.

Rope and Cord;

1 square knot tied in cord, (yucca fiber).

2 pieces of cord knotted together.

1 piece of cord 16 inches long.

1 piece of cord 10 inches long.

1 piece cord 8 inches long.

5 shorter pieces of cord.

27 fragments of cord.

1 piece of rope 5 inches long.

Cord;

11 examples of cord with the midribs of feathers, as prepared in the feather cloth shroud. One piece seems to have fur binding in place of the usual feathers.

Fashioned wood;

1 small stick whittled or gnawed.

1 stick 4 inches long, ground to a point at one end.

1 section of arrow shaft $2\frac{1}{2}$ inches long, showing string notch and bound in two places with sinew.

Basketry;

1 piece of basketry material, of stripped yucca leaves, 3 inches square. Possibly part of sandal or mat. Diagonal technique.

Weaving;

1 small piece of red cotton cloth.

Leather;

8 small pieces.

1 piece of leather with cotton rolled in one end.

2 leather thongs, 4 and 9 inches long.

Miscellaneous;

1 small clay ball $\frac{3}{4}$ inch in diameter.

Small fragments of pink pigment.

Potsherds;

2 smooth unpainted potsherds.

1 black on white sherd with complete handle.

4. Bones;

Human Bones;

Section of parietal bone.

2 fragments, possibly of temporal.

Animal Bones;

Several skulls, entire or in part, (Rodentia).

Fragment of skull, unidentified.

4 Lower jaws, (Rodentia).

1 lower jaw, unidentified, possible carnivore.

Several skeletons of feet and legs, jack rabbits.

Vertebrae, unidentified.

1. skeleton almost complete, (Rodentia).

Proximal end of tibia.

of the excavation. The corn cobs and the square knots which were tied in found within a half hour's squishy rinds and stems appeared commonly in one part of the surface material seemed to be sorted somewhat; i.e., the raw cotton was Although it is obvious that the rats had long infested the cavity, most

loaves. It was in a fair state of preservation. was the find of a scud which had been moved of the filaments of the yucca during enough material to warrant the time and effort involved. Most spectacular The remaining surface material from within the cavity was removed, pro-

pieces of leather and wrapped corn husk were found. This layer of ash was completely excavated, and along with much charcoal several which extended out beyond the mouth of the cavity in a somewhat 1 1/2 ft. in radius. meeting and used foundation was embedded in a layer of ash 4 to 6 inches deep, actually more woven in checker board fashion to form a crude mat. The whole one section in the east corner of the mouth of the cavity, slender yucca strips of small, unidentified sticks, corn husks, juniper bark and yucca leaves. In moved. Above and between such firmly fastened rods, was a matting or padding appeared to be placed in such cross positions. Twenty-four of these were re-

offering. But as excavation proceeded, many more rods than the first set observed although completely undecorated, might have been used as a temporary or emergency prayer sticks. It is conceivable, however, that these rods found in cavity U-2 feathers or other paraphernalia, or at least by painting - which may be called Indian, however, tell only of rods decorated in some manner, - by tying on the Bureau of American Ethnology, 1886-87, and the Handbook of the American Stevenson's account of Navajo ceremonies, in the Eighth Annual Report of they were prayer sticks.

definite position, at right angles to each other, giving rise to the theory that hard packed and small stones. These rods seem to be placed in a rather found many rods set in the ground, securely fastened at their ends by the Sixteen inches below the surface level of the debris in the cavity were

CONTINUATION OF THE EXCAVATION OF CAVITY U-2.

Zuni use such sticks for prayer. were very old, for no such rods are found here today. He thought that the over used among the Navajos to his knowledge. Also, he said, these sticks Our Navajo informant, through our interpreter, said that no such sticks were although no painting, bindings, or markings of any sort were detected upon them. It seems possible that these rods were placed in position as prayer sticks, to each other, at right angles. One was found standing in a vertical position. embedded with small stones. Those rods were placed in definite relationship informed because of the presence of rods, firmly fastened in the hard soil, and found evidence of a fire, and very possibly of ceremonial life. The latter is face before excavation and well beneath any evidence of rat occupation, was entrance to the cavity, the most accessible place, 16 inches beneath the sur- 3. However, evidence of purposeful use of this cavity was found. In the

- conceivably have been carried in by the rats.
2. All the material excavated or recovered as listed above, moreover, could evidenced by the mature and nest material, also skeletal remains.
 1. It was obvious that the rats had occupied the cavity for a long time; they merely carried there by peck rats?
- evidences of human life and living purposefully deposited in the cavity, or were

CAVITY U-2. This cavity presented an interesting problem; namely, were the

yucca leaves proved to be ubiquitous; and the cordage appeared pretty well throughout.

The stone forming the mouth of the cavity is blackened by smoke on the east side, apparently the roof of the cavity is also blackened. The fire or fires appear to have been pretty well at the entrance. This cavity differs from the other four which we have investigated in that it is on the level of the top of the talus slope which may also be a ruin mound.

Above the cavity is a broad crack in the stone. This crack has been sealed with masonry. It was photographed and the masonry removed with high hopes, but there was nothing in the space behind the sealing. Possibly this work was done to prevent the water from dripping into the cavity below.

CONTINUATION OF THE EXCAVATION OF CAVITY U-2.

Following is the list of materials which were found in the excavation of the Cavity U-2 during the following week.

The list has been divided into two parts; surface material listed separately from that found in the ash layer 16 to 22 inches below.

Materials found at the surface.

Agricultural products and other plant materials.

Maize:

Cobs 235
Cob fragments 130.
Stalks 6 fragments.
Husks Several pieces, some charred.
Kernels 1, outer covering only.
Special note; one cob with stick in stalk end,

Squash or gourd;

Stems 5 and a few fragments.
Rind 38 pieces
Seeds 3

Seeds;

Pinon shells
Several unidentified.

Woody plant material;

3 large Yucca leaves.
1 Section of reed, 8 inches long.
2 Sections of reeds 2 inches long.
Several pieces of juniper bark.

Evidence of fire;

1 Charred corn cob. (At least this cob had not been carried into the cavity by rats.

Charcoal.

Charred corn husks and sticks.

Artifacts.

15 square knots tied in yucca leaves.
3 long strips of yucca with overhand knots tied in them.
2 square knots tied in small bits of cord.
1 knotted fragment of cord tied around two yucca leaves.
22 fragments of yucca leaf twisted as though used for thongs.
Cord; 1 piece, 16 inches long.

Cord;

- 10 fragments of cord 5 inches or less in length.
- 1 fragment of crude cord made of yucca strips.
- 5 fragments of cord feather or fur wrapped.
- 1 fragment of wrapped cord 5 inches long.
- 1 piece of cord 5 inches long, wrapped with yucca leaves.
- 1 piece cord 12 inches long, wrapped with feathers.

Basketry;

- 1 piece coarsely plaited strips; diagonal technique; 4 inches wide by 6 inches.
- 1 small fragment of yucca fiber, possibly part of sandal.

Weaving;

- 1 sandal, front part missing; finely woven with design on under side, warp of yucca fiber cord, weft of yucca fiber filaments.
- 1 fragment of another sandal.

Leather;

- 5 small fragments.

Potsherds;

- 1 Black on White.

Bones;

- 1 fragment of human skull. (Possibly parietal).
- Many unidentified bones, including,
- limb bones of rodents.
- limb bones of larger animals.
- Fragments of vertebral column.
- Fragments of jaws and skulls, mostly rodents.

Materials found at the level of the ash; 16 to 22 inches below the surface.

Agricultural and other plant material;

Maize;

- Cobs, 14
- Fragments of cobs 24
- Stalks 2
- Husks, Several large pieces, some charred.

Squash or Gourd;

- Stem 1
- Rind 27 pieces and many small fragments.
- Seeds 27

Other Seeds;

- Red Beans, 3.
- 2 unidentified grasses, one appearing to be a kind of oats.

Woody plant material;

- Reeds. Larger reed set in ground.
- d, twelve inches or more in length.
- 1 24 inches long.
- 15 eight inches or over.
- 33 three to six inches long.
- 36 three inches or less.
- Special note; one reed 3 in. set in ground in vertical position.

Materials found in association with reeds, forming matting.

1 Yucca leaf, 19 inches long.
1 Yucca strip 12 inches long.
Other Yucca leaf strips.
Many small sticks.
Juniper bark.
Corn husks.

Evidence of fire;

Layer of ash 4 to 6 inches deep
Much charcoal and charred wood.
2 Charred corn cobs.
Charred corn husks.
Many fragments of burned bones.
Pieces of adobe mud baked in the fire.
1 piece of clay, fired, bearing impression of rood.

Artifacts;

Cordage and Feather work;

1 square knot tied in yucca cord.
1 cord bound with feathers, 20 inches long.
1 ditto. 6 $\frac{1}{2}$ inches long
1 ditto 5 inches long.
2 ditto, fragments.
2 fragments of feather cord, showing great thickness at one end.
Bits of feather cloth.
1 Circle of rope, 12 inches of rope fastened with long splice.
1 rope 20 inches long.
Raw Yucca fiber, unworked.
1-fragment of twisted rope-- yucca.
1- piece of rope 3 $\frac{1}{2}$ inches long.
7 fragments slender cord 2 to 5 inches long.
2 fragments of large feather (Turkey?)
Bits of fine downy feather.
2 pieces unidentified material wrapped in corn husks 2-3 inches long.
Other fragments of same material.

Worked wood;

1 small stick, sharply pointed.
1 stick 7 inches long, knob on end.
1 7 inch section carefully rounded stick.
1 large chip of wood, ground to an edge.

Potsherds;

15 Black on White.
4 indented.

Bones;

Several fragments of limb bones, unidentified.
1 vertebra, unidentified.
1 fragment of jaw bone, unidentified.

MATERIALS OBTAINED FROM CAVITY U-1.

Thousands of corn cobs.
2 pieces corn stalk.
1 round or squash stem.
2 square knots tied in yucca leaves.
1 worked stick fastened as part of bow.
Some unidentified bones.

CONCLUSION.

It appears that these cavities were used as depositories by the people who lived in the talus slope houses. P.S.-1 yielded the planting stick previously described. It is ten or twelve feet above the present ground level and in the vertical face of the cliff. It is approximately 18 inches in diameter and eight feet deep. There were bits of hard scraped mud and stones at the mouth of the cavity which suggested that the entrance had once been sealed with masonry, at least part way from the bottom.

P.S.-2 yielded well. It, too, had evidence of some sort of masonry across its entrance. The mouth was large enough that it admitted a person. For six feet I crawled along this narrow passage and then emerged into a larger cavity which permitted me to almost stand. It is from this room inside the cliff wall, that most of the materials listed as having been recovered prior to July 6, 1933, were taken. The cavity seemed to have been of natural formation.

P.S.-3 was just a small round hole, two inches in diameter from which I took an arrow shaft.

U-1 did not yield as well as the others. There was much material of less spectacular nature. It is in the cliff wall above the ruin Kin Klet So.

U-2 is in the same vicinity as U-1. It is large enough that one could crawl inside the entrance, but could go no further. The material was scraped out with a long handled hoe.

This imposing list of materials has been taken mostly from two of the hundreds of cavities which we believe are in the cliff walls of the Chaco. This is a new field for investigation, and one that may occupy us for several years. The P.S. cavities are on land belonging to the Government. I have not opened more of these because we have no place to even store, much less display the material. Our little museum is already over crowded.

The U cavities were opened under the direction of the University of New Mexico Field School. I represented the School and the work was done under my supervision by the students. Mrs. John Y. Kour, anthropologist, of Hunter College, New York, did most of the careful, painstaking, important work.

The presence of the feather cloth, similar to that in shrouds, and the bits of human bones, does not, in my opinion, lead to the hope that we will find, in the cliff cavities, the solution of the mystery of the disposal of the Chaco dead. We must search for the dead in another place. While I should not be surprised to find several bodies in these cavities, I do not think that there will be enough of them found to make a great deal of difference in the obscurity surrounding the fate of the bodies of the thousands of people who must have died in the Chaco.

Murst R. Julian
Custodian, Chaco Canyon
National Monument.

And while we are putting reports into the record, here is a letter which Mr. Heath, of Pipe Spring National Monument, wrote in answer to an inquiry about his monument.

In the year 1856 President Young, of the Mormon Church, sent a party

of men into northern Arizona and on into the Navajo Country to make peace with the Indians.

At a camp made at what is now known as Pipe Spring National Monument, while on this trip, some of the men began to banter 'Gunlock' Bill Hasbun, who was the best marksman in the company. They claimed he could not shoot a hole through a silk handkerchief hung up by the two upper corners only at a distance of 50 feet. Bill took the wager and shot several times but failed to make the holes in the piece of silk.

Probably thinking there was some trick about the matter, Bill turned to Dudley Levett and said; "If you will put your pipe on that stone by the spring so the bowl points toward me, I will shoot the bottom out without cracking the rim." The pipe was put on the rock, Bill took aim and fired and the rim of the pipe bowl remained on the rock. From this episode comes the name of Pipe Springs.

The next date of interest is when Dr. James M. Whitmore and Robert McIntyre came to Pipe Springs to start a cattle ranch in 1863, building and living in a dugout just east of the large fort. In the winter of 1866, on January 8th, the Navajo and Piute Indians took the sheep belonging to Whitmore, and when the two men went out to get them back they were killed about four miles southeast of their home.

Whitmore had one of his sons with him that winter, who was eight years old, and when the men did not return at night but Indians came and took all they could carry off without entering the dugout where the little boy was, the next morning the boy started to walk to St. George, Utah, 96 miles west. When about ten miles from Pipe Springs, he met some men coming toward the Springs. Word was soon sent in and the Utah State Militia came out and soon took revenge on the Indians. Six Piutes were killed and I have learned just this spring that none of them were with the Indians who took part in killing the white men.

From the Whitmore estate, the Mormon Church bought Pipe Springs for a place to build a fort for protection from the Indians and also for a cattle range to take care of the Church tithing cattle. The fort was built in 1869-70 under the direction of Amos P. Winsor, whence it is sometimes called Winsor Castle. It afterward came into the hands of private owners and continued to change hands until 1923 when Johnathan Heaton and sons transferred the title to the United States to be made into a National Monument.

Pipe Springs became the first telegraph station in Arizona when the Deseret Telegraph line reached Pipe Springs in December, 1871. This line is still in use as a telephone line running into the town of Kanab.

The purpose of making Pipe Spring a National Monument was to preserve this fort as a relic to Western Pioneer Life. It is the only Monument we have in the west that is kept by the United States as a monument to western pioneers.

Our hope is to restore the fort to its original state with what furniture we can get of the old pioneer days and arrange it in the rooms as it was when the fort was in use in 1870 to 1880.

I might add that up until 1918 there was watering here every day 2,000 to 5,000 head of cattle depending on the time of the year. Also that it was from here that the big herds left for market, consisting of 1,500 to 3,000 head to the herd and four or five herds going out each spring and fall.

ATTENDANCE RECORD
FOR
SOUTHWESTERN MONUMENTS

As reported by wire to the
Washington Office Oct. 1.

Monument.	1932	1933
Archaeo-----	480	425
Aztec-----	8322	7546
Bandelier-----	4169	3906
Canyon de Chelly---	395	435
Capulin-----	25000	14000
Casa Grande-----	21895	21771
Chaco Canyon-----	2725	5817
El Morro-----	2700	2467
Gran Quivira-----	3844	3563
Great Sand Dunes---	500	550
Hovenweep-----	400	425
Montezuma Castle---	14000	13899
Natural Bridges---	344	654
Navajo-----	300	375
Pipe Spring-----	2100	2548
Rainbow-----	325	385
Tuzigoot-----	13758	8669
Wupatki-----	850	1250
White Sands-----	---	12000 part year.
Yucca House-----	240	300
Total. -----	102,342	101,185

Attendance records, alone, don't mean very much. It takes a lot of explanation to make them talk and then, if you don't look out they won't tell the truth. Some places we have a lot of visitors to whom we can give no service because of a lack of personnel. You can't look at the above table and tell much about what we have done this past year.

I think we will overhaul our methods of keeping track of visitors this next year and see if we can't make these figures do some talking on their own account. At present, from the places where we have men stationed, one man reports only those visitors who are guided, another reports all who enter the monument, which is a widely different figure from those actually guided, another doesn't count his visitors but guesses at his attendance. As a result of all this, the figures are rather sketchy when it comes to basing plans on them looking toward development in the future.

As comparative figures, this table will do pretty well, though there are one or two places where a change in methods of counting has weakened the figures for comparison. In general, however, since the same methods have been in use at most of the places for several years, comparisons will be pretty accurate in showing increases and decreases. Reasons for increase and decrease vary widely and are not shown in the figures; each change needs its own explanation.

PERSONNEL.

As we write this word comes to our desk that Mrs. Hurst R. Julian had her appendix removed, the operation taking place at St. Mary's Hospital in Gallup, New Mexico on September 28. She was resting at the time of writing and recovering nicely. She expected to be out of the hospital on October 7 but would remain in town with friends for some time before trying to make the 100 mile trip back to the Chaco over those rough roads. Congratulations are in order to Winnie for having come through the operation successfully and getting rid of a very troublesome appendix. Forty five miles from a doctor is no place to have an appendix go to skipping stitches on you and some of us have worried a good deal this last year or so over the possibilities of that situation.

Gay Rogers is lamenting the loss of three of her most cherished cups which were broken in the recent move of her furniture from Tumasacori to Bartolier. She says that, all told, that leaves six cups with three varieties present. Also the movers broke some knobs and pretty jiggers off her furniture. And worst of all, while she was down here seeing to the moving of the furniture she got some Mexican blue glassware across the line at Nogales, which she valued so highly that she carried it back with her to protect it, and then after getting it to the top of the Canyon, had it broken on the way down to the quarters. The Boss is happy, Gay, that he was 900 miles away when you were unpacking that stuff up in the Ranger Quarters! Suppose we invent some rubber dishes and cast iron furniture which explodes when a knob or jigger is carelessly broken off? Bill and George might be surprised to handle a piece of your furniture too roughly and the next moment find themselves explaining to the gentlemen with horns how they got there and what they were doing with the right hind leg of a lady's dressing table in their hand.

Johnwill Harris lost a trip to the coast last month. He wired us to make sure he had annual leave coming; packed the old car; and ten minutes before he started, got a wire from Dorothy that she was on her way home.

Bob and Marie Rose had a pleasant trip up to Pipe Spring National Monument during the month. Bob was looking into water distribution matters and his report will be ready for the Washington Office soon.

Jack and Mrs. Jackson, from the Montezuma Castle National Monument, plan an interesting boat trip down the Verde River to the Salt and thence down the Salt to Phoenix. We hope Jack will write it up for the next monthly report.

Ranger Martin Everssted is settling down like an old timer at Tumasacori National Monument. We had to go down at the end of the month to get him to sign the pay checks and found him hard at the job of showing visitors the interesting features of that monument.

Hugh Miller has also settled down and become one of the Southwestern Monuments gang. He certainly struck us at about the worst time a book-keeper and general accountant could pick out. Not only do we get orders for a

new kind of a report about once a week, but a couple of times we have received orders on how to make up the books a month ago and it is far from pleasant to tear a set of books apart and put them together again about four weeks after the events have happened. Nobody realizes better than us that the Washington Office has been having a rather hectic time of it during the reorganization, but the field men have been running circles around themselves too.

And with it all comes the gentle snow from Heaven in the way of banks of white paper covered with rules and regulations and orders and reports and instructions on the EOW and the C.C.C. and the NIRA and the Public Works Act.

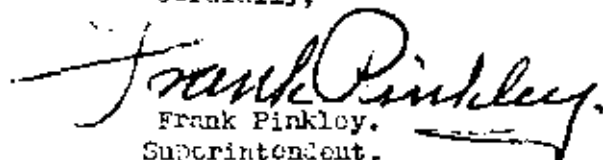
While at Pipe Springs, Bob Rose met Harry Langley and they went over proposed developments and maintenance at that Monument. Leonard and Mrs. Heaton had Harry, an assistant, Mr. Stevenson, a Union Pacific photographer, Bob and Marie at lunch. The citizens of Moccasin gave a chicken roast in honor of the Park Service personnel represented there that day but Harry and his party had to return to Zion. Dutch oven chicken, home made bread and appetites sharpened by cool brisk weather combined to make the occasion very successful.

And we are going to have a winter camp of the C.C.C. in Bandelier, so there won't be much chance for El and Gay to get lonesome for lack of folks around, and we are going to find some new slants on trying to keep track of the paper work of such a camp with headquarters 900 miles away.

We aren't throwing up the sponge yet, but how much extra paper work will it take to entitle us to an extra clerk? It seems to me we are handling about as many thousand square feet of paper per month as some of those quart size parks that rate two or three folks on the office force.

Anyway, we lived through September and had a good deal of fun doing it, so we will do our best to worry through October and here's hoping the worst of the re-organization is over and we can settle down to the business of taking care of the winter tourists. Southwestern Monument employees please note that all this ruckus of roads and trails money, C.C.C. camps, Public Works Act money, paper work, and every thing else, is based on Mr. and Mrs. Mohn Doc and the kids and good service to them. Good service is aided by all these things, but it doesn't absolutely depend on them, and it may sometimes be absent when they are present. Good service first, Loyalty second, and it is only a matter of time until the other things come.

Cordially,


Frank Pinkley.
Superintendent.

10-159
(May, 1931)

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

STATUS OF PERSONNEL

Southwestern National Monuments

National Park for the Month of September, 1934

	This Month		This Month Last Year	
	Appointed	Non-Appointed	Appointed	Non-Appointed
Number of employees beginning of month	29	4	30	1
Number of additions	0	28	0	37
Total	29	32	30	38
Reported by Petrified Forest	9*			
Number of separations	2	16	5	37
Number of employees close of month	19	16	27	1
Number of promotions during month	0	0	0	0
Aggregate amount of annual leave taken	1	0	0	0
Aggregate amount of sick leave taken	1	0	0	0
Aggregate amount of leave without pay	0	0	8	0

*Personnel for Petrified Forest National Monument will be reported by that monument as an independent unit.

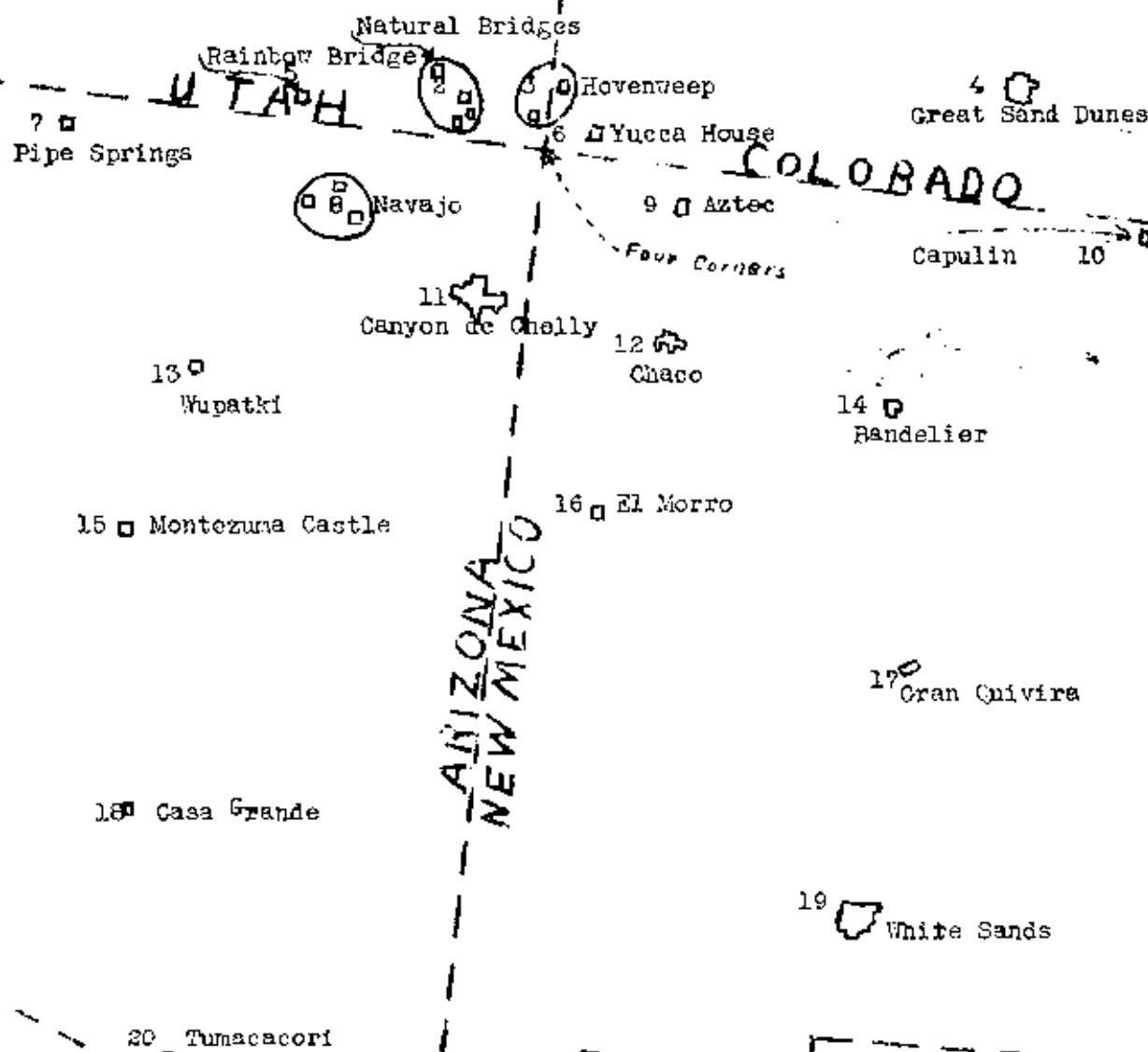
LIBRARY

SOUTHWESTERN MONUMENTS

AREA

1 Arches

520.24 59 MI.



UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL MONUMENTS

SOUTHWESTERN
MONUMENTS
MONTHLY REPORT
OCTOBER 1933

NOV 6 1933		
✓ ITEM	✓	
✓ DEPT		✓
EDUC		
AC	✓	✓
✓ L		
✓ L		
✓ V		
✓ R		
✓ J		
✓ AN		
✓ FL		

IN MEMORIAM

This cover is left unillustrated as
a memorial to our valued friend
and trusted coworker, Edgar Rogers.

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL PARK SERVICE
LIBRARY
CA GARDENS
FISH LAKE

CA DARTMOUTH
FBI AL BARK

TABLE OF CONTENTS

Superintendent's report.		
Death of Rd. Rogers. - - - - -	2	
Return via Chaco and Aztec - - - - -	2	
Establishing the C.C.C. camp - - - - -	2-3	
Assistant Superintendent's Report.		
Field trip to Wupatki - - - - -	3	
N. Ariz. Soc. Sc. and Art at Wupatki - - -	3	
C.C.C. work contemplated at Wupatki - - -	3	
Home via Montezuma Castle - - - - -	4	
Features of prehistoric canals - - - - -	4-5	
Museum additions at Casa Grande - - - -	5	
Reports of Individual Monuments.		
Aztec Ruins. - - - - -	6	
Bandelier - - - - -	7	
Casa Grande - - - - -	7	
Chaco Canyon - - - - -	9	
El Morro - - - - -	10	
Gran Quivira - - - - -	12	
Montezuma Castle - - - - -	13	
Natural Bridges - - - - -	13	
Navajo - - - - -	14	
Pipe Spring - - - - -	15	
Tumacacori - - - - -	17	
White Sands - - - - -	18	
Wupatki - - - - -	19	
Special report by Lyn. Hargrave.		
In General - - - - -	22	
Petrified Forest, by Supt. Smith - - -		23

THE SUPPLEMENT.

Chaco Canyon, Threatening Rock, By Dr. P. Y. Kaur -	A-K
Chaco Canyon "Lost" Cavity, By Dorothy L. Kaur -	K-M
Philosophizing on Monument Valley -	M
The Pipe and Rail of Tom Vint -	N
Laying out prehistoric canals -	N
Brass H's -	O
First telegraph station in Arizona -	P
More information on Tom Charles' Red Lakes -	P
Hugh Miller's Conference with the Gods -	O

1. The first part of the document
describes the general situation
of the country and the
state of the economy.
2. The second part of the document
describes the state of the
economy and the state of the
economy.

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF NATIONAL PARKS
BUILDINGS AND RESERVATIONS
SOUTHWESTERN MONUMENTS

Coolidge, Arizona, November 1, 1933.

The Director,
Office of National Parks
Buildings and Reservations,
Washington, D. C.

Dear Mr. Director:

October has become a matter of history, the checks have been issued and it remains for us to tell you what has been happening among the Southwestern Monuments for the month.

The event which startled and shocked us most during the month was the death of Edgar Rogers, Custodian of Bandelier National Monument, which occurred by his own hand on the morning of Monday, October 16, 1933.

Chief Clerk Hugh Miller and myself were on the way to Bandelier to help Ed. out in the matter of the 30 camp which was to be put in his Monument this winter. We had gone from Headquarters at Casa Grande National Monument to Petrified Forest National Monument on Sunday, the 15th. On the 16th Mr. Miller and Mr. Smith had some matters to talk over and we then left the Forest at 10:30, expecting to stop for the night in Albuquerque.

Some time after we left Mrs. Smith drove to Holbrook and found a wire from Mrs. Rogers saying Ed had killed himself and asking if she could come. The Smiths immediately tried to communicate with us and did get a wire to us at 5:30 in Albuquerque through the police force who were on the watch for our car number. We of course went on into Santa Fe that night and telephoned out to the hotel at Bandelier, but, finding that everything possible was being done and that we could be of no use that night, we stopped over in town.

Mrs. Smith had come through by bus the next morning at 5:30 and she and I left town at 8:00 and went out and brought Mrs. Rogers in with us. She remained with us until Wednesday after the funeral when she and Mrs. Smith, Mr. Miller, Walt Attwell, who was there on engineering business, and myself went back to Bandelier and spent the night at the hotel. Thursday morning we went up to the house and straightened things up somewhat and did some packing. Thursday afternoon late, Mrs. Smith, Mr. Miller and I returned to Santa Fe and started on the return trip to the Forest Friday morning.

Fortunately Mr. Attwell was in the Canyon when the death occurred and Mr. Vint and Mr. and Mrs. Richey were just checking out of the hotel in

Santa Fe. Mr. Lyle Bennett was also in the Vint party. Thus there were five Park Service people in the Canyon with Mrs. Rogers within an hour. Mrs. Frey, at the Hotel, did everything possible.

The inquest was over a little after noon and the body was removed to the mortuary chapel in Santa Fe. The funeral ceremony was held from the chapel at 10:00 o'clock Wednesday morning and burial was made at the beautiful cemetery at the edge of the city. Five Clarkson drivers, with whom Ed had worked for several years, and one Park Service man, acted as pall bearers. The services were simple and impressive.

We were never able to put our finger on a single cause for Ed's act. Everything, his financial affairs, his home life, his official affairs, seemed to be breaking in his favor. As you know, he had recently been promoted. He was doing his work well. His monument had every chance to grow and he to grow with it in the next few years. Yet he had despondent streaks and I am inclined to think he has contemplated this action off and on for some time. With such a background, he needed no immediate cause for the last act. So simple a thing as digging around in his bag for something else and running on to his gun might have snapped the final circuit in his mind and carried him over the line where he had often hesitated.

He did his work well and we who knew him will miss him as we go about our duties and regret his passing.

Mrs. Rogers will continue to hold her place in the hearts of the Park Service family of the Southwestern Monuments, and we hope that she will continue to feel that we are her folks.

- - - - -

On Friday the 20th, we left Santa Fe and went across a short cut road through Cuba to Aztec National Monument. We got in there about four o'clock and remained until nine when we went on down to Farmington for the night. We thus had a chance to see the ruins and get about thirty pictures to be used in the Six Year Program, Mr. Miller had a chance to meet the Faris family and we all had a chance to enjoy some more of that chicken gravy, which you only know about by hearsay, but which Johnwill and Dorothy wish you would know about from experience when you come west next summer.

On Saturday, the 21st, we drove from Farmington through by Chaco Canyon National Monument to Gallup for the night.

Here again Mr. Miller had a chance to get acquainted with Hurst and Winnie Julian and we got thirty or forty pictures for use in the Six Year Program and talked over some of the problems of that monument.

On Sunday, the 22nd, we drove to the Petrified Forest National Monument and remained there the rest of the day.

On Monday, the 23rd, we drove down over the mountain to Headquarters at Casa Grande National Monument.

While we were in Santa Fe we met the Army and the Forest Service on matters connected with the 30 camp which will move in on us about November 10th and got fairly well acquainted with the paper work connected with the camp. The camp we are getting has the highest rating of any in that district. It is under the supervision of a former State Highway Engineer who knows road and trail work from A to Z. We are taking his outfit over practically complete

with the substitution of two landscape foremen in place of two forestry foremen. This means that the camp ought to shake down in a few days and go right to work. We are going to have Walt Attwell with us as Engineer and he and Mr. McGill will get the greatest efficiency possible out of the camp.

Lieutenant Roberts, who has been in charge of the construction of the camp ~~construction~~ told me he would also be there during the winter, a thing that pleased me very much for I am sure he will be a fine man to work with.

In fact, the set-up as it now stands is so good I am going around with my fingers crossed.

We have sent Martin Evenstad up in temporary charge of Bandelier and his familiarity with forms and paper work guarantees that with an enrolled man under him to do the actual work, that end of it will be well cared for.

It looks like the Engineering Division are going to back us up with stake trucks, dump trucks, caterpillars, bull dozers and other heavy equipment and the camp ought to come to us with enough small tools, so, if our present promises are made good, we are going to be able to put it up to Walt and Mc and find out how good they are.

Report of Ass't Sup't Bob Rose.

On Sunday, October 28th, the Staff of the Museum of Northern Arizona conducted a conference on the progress of excavations at Wupatki National Monument.

Leaving Coolidge on the morning of October 28th, I arrived at Flagstaff on the morning of the 29th, having spent the night at Williams. Before proceeding to Wupatki I contacted Mr. Lyndon L. Hargrave, Field Director of the museum of Northern Arizona. My early arrival at Wupatki gave me an opportunity to discuss excavation and C.C.C. camp problems with Dr. H. S. Colton, Director of the Museum, for about one hour.

At 5:30 p.m. about 100 members of the Northern Arizona Society of Science and Art, benefactors of the Museum, gathered at Wupatki to hear Director Colton and Field Director Hargrave discuss the results of archaeological field work during the past season at Wupatki. Needless to say, I was greatly impressed with the manifestation of interest in Wupatki and in the scientific activities of the Museum of Northern Arizona. Picture, if you will, about 100 of the civic and cultural leaders of the City of Flagstaff driving 48 miles to Wupatki over 25 miles of highway deeply rutted and dusty because of construction and 15 miles of crooked, bumpy, unimproved road to complete the journey. One must conclude that this interest is active and genuine.

The amphitheater consisted of a circular structure more than fifty feet in diameter which resembles a Kiva in that it has a banquette, and there the similarity ends. Excavation and repair of this peculiar project, along with the excavation and repair of a rectangular room Kiva are among the fine achievements of Field Director Hargrave and Staff. They have cleaned and restored rooms, repaired walls, and carefully studied field relations of their finds. There remains much to be done and the Museum hopes to resume careful scientific work next field season.

Work contemplated by the C.C.C camp was explained to me by Dr. Colton

and Mr. Hargrave. Trails to make structures more accessible in instances, moving debris away, mapping, and other work are contemplated upon establishing the camp. Dr. Colton pointed out the need for recreation for the men and we shall give this problem careful thought.

Mrs. Colton, assisted by the Museum and Field Staff, served appetizing refreshments of sandwiches and coffee. During the course of the Conference I was invited to make a few remarks on the relation between Wupatki, the National Parks organization and the community.

Both before and after the program I spent some time getting pictures showing the present condition of the ruins.

I was particularly pleased to have this opportunity to meet Dr. Colton and his Museum staff. They have been most generous in assisting us along various lines in museum work in the Southwest. The Museum of Northern Arizona is also among the comparatively few institutions that are making a genuine success out of the popularization of scientific information.

At the gathering I was pleased also to see Mr. Berton I. Staples of 'Crafts del Navajo' Coolidge, New Mexico. Seeing him recalled a pleasant visit Dr. Russell and I had there in May visiting the Wayside Museum of Archaeology. Through the generosity of Mrs. H. S. Gladwin, Mr. and Mrs. Gladwin and Mr. Staples have developed there a most interesting and appealing museum lay-out. A visit there is well worth the museum scholar's time.

Mr. Woodward, publisher of the Southwest Tourist News, was also at Wupatki and I was pleased to renew acquaintance with him.

Leaving Wupatki I drove to Flagstaff for the night. On the morning of the 30th I spent one hour at the Museum of Northern Arizona completing our discussions of excavations and C.C.C. camp matters. I was interested to see several popular museum projects completed or nearing completion which had not been started when Dr. Russell and I had been there in May.

From Flagstaff I drove to Montezuma Castle National Monument by the beautiful Oak Creek Canyon route. This is really one of the outstanding scenic drives of the west. Here on a large scale is some of the scenic quality both the Grand Canyon and Zion combined.

At Montezuma Castle I found Mr. and Mrs. Jackson and their son Earl enjoying some of the season's finest weather. The C.C.C. camps in the vicinity have given Jack some very heavy Saturday and Sunday runs. This reminds me to mention the fine Park Service signs which I saw clearly directing the way to Montezuma Castle. A person trying to find Montezuma Castle would have to be blind to get on the wrong road now. We of the Southwestern Monuments who spend a considerable portion of our time doing guide and public contact work, know that people appreciate these services that the Government has done.

After a couple of hours at Montezuma Castle I proceeded to Casa Grande National Monument, finding that in my brief absence of three days uncomfortably hot weather had given way to brisk, cool conditions. The cooler weather will bring increased travel to Casa Grande and Tumacacori. The genuinely interested type of visitor to Arizona is now beginning to show up, all of which materially increases the pleasure of doing guide services for them.

I wish to acknowledge the kindness of Dr. R. H. Forbes, Director of the University of Arizona Experiment Station in sending us an Experiment

Station Bulletin describing some of the features of the prehistoric canals of the Gila and Salt River Valleys. I wonder if it is generally known that a short distance from their take-off from the river, the ancient people provided settling basins which allowed the sand and silt carried in the water to be deposited thus making it unnecessary to clean the canals so often? Equally ingenious was the practice of digging a small steep-walled channel within the broader canal channel thus allowing waters in dry weather to be confined to the smaller channel. This arrangement materially decreased seepage and evaporation losses during the period of scant water-flow in the rivers. Prof. Forbes had an absorbing interest in the archaeology of this region. We derived profit as well as a great deal of pleasure from his visit. In the Supplement will be found another reference to this visit of Dr. Forbes and his comments on how the prehistoric canal courses were determined. This cooperation of individuals and institutions of high standing with our Service is one of the things we should always appreciate and maintain.

The Casa Grande Museum has just come into possession, by loan, of a remarkable group of artifacts found in association with a cremation burial. The materials were found outside the monument by Mr. Leonard Spruell who has loaned them to us for exhibit purposes.

Mr. Spruell first brought in five small moulded head pieces which were undoubtedly mounted on small canes or wands by the ancients. The quality and style of sculpturing and moulding seem to bear a remarkable resemblance to articles found in Mayan excavations. The indentations and facial characters are executed with a precision not commonly found in true early period. Sculpturing and ornamentation in the early period in this region are crude.

A few days after making this loan, Mr. Spruell startled us again by bringing in two small red-on-buff saucer vessels with massive crouched human figures supporting them. Except for one broken leg, one human figure is quite intact while the arms and one leg are missing from the other. The more intact figure sits as a man would sit upon the floor with legs bent up in front of him, feet flat on the floor drawn close and hands placed on knees. The figure with three limbs missing gives evidence on its broken parts of having had arms and legs in about the same position as the first. Each figure supports the shallow saucer type of red-on-buff vessel on its head. The saucer supported by the more intact human figure has its concave bottom next to the head and about one half of its rim present. In other words it has only 1/3 to be restored to be perfect. The other has 2/3 of its rim portion gone. With 1/2 restoration this vessel would have its original form.

We do not share the enthusiasm of those who consider the Ho-ho-kam of this region a direct offshoot of the Mayan culture: we maintain only that some Mayan cultural influence did extend as far as the Gila and Salt River Valleys and found expression here and there in the early Casa Grande culture. We have to guard vigilantly against placing too much reliance in superficial resemblances and too limited comparisons. Vaillant, in his paper, "Some Resemblances in the Ceramics of Central and North America," published in the Medallion, of the Gila Pueblo, 1932, clearly sounds the warning. This author discusses several characteristics in ceramic arts, figurines found by Woodward, and mixtures of elements found in Casa Grande pottery south of this region which indicate ultimate northern penetration of distinctly Central

American traits. Triped supported vessels also indicate a penetration of Southern influence.

These finds are among the most important ones ever made which indicate the Mayan or Central American influence on the early period of Ho-ho-kam occupation.

- - - - -

Reports from the various monuments for the month of October follow:

AZTEC RUINS NATIONAL MONUMENT, Johnwill Faris, Custodian.

"Visitors for the month total 528. This is almost up with the same month last year. The weather has been ideal and the conditions for travel excellent, but the travel is not going through the country.

"Chuck Richey was kind enough to drive down from the Mesa Verde the early part of the month and we went over the general layout for the new building and a report to your office was received from Chuck about the tenth of the month.

"Near the middle of the month we were again favored with a visit from the landscape department. This time Tom Vint, Mr. and Mrs. Richey, and Bennett from Mesa Verde all stopped with us and we spent a portion of the afternoon going over the new building and taking measurements, etc., for the plans.

"Just prior to this visit I made an official trip to Santa Fe, and while there held a conference with Department Archaeologist Jesse Nusbaum, relative building material and needs for repair. It was as a result of this visit that a report was made to the Washington office on need for repairs, and a copy of the same was mailed to your office. I want to again mention the fact that I most certainly appreciate the cooperation and assistance of both the Landscape and Engineering Departments and their men in the field. Especial credit do I give to Engineer Hamilton, and Chuck Richey for their untiring assistance. Without these boys to help us I do not know what we would ever do.

"We were particularly favored this month with a visit from our own folks. On the 20th 'The Boss,' Mrs. White Mountain Smith, and Hugh Miller dropped in on us and not for many moons have we spent so enjoyable an evening. It was the first time Mrs. Smith and Miller had ever been inside our house, and now that they have the ice broken we want to entertain them often and of course we want them to bring the Boss with them.

"The trees are taking on the most beautiful colors and if only some of the other boys could see the Ruins now, I know you would find all the Custodians congregated at the Aztec Ruins. That's all right, Boys, we can not all have the best ruin, and in this case I am just fortunate.

"We were most sorry to hear of the tragedy at Bandelier, and will always remember with the greatest of pleasure the times that we were shown the features of that monument. Our deepest sympathies go out to Gay and we are offering ourselves and our resources to her at her wish.

"We are getting quite the reputation as something. A couple from Durango was down the 24th and were married in the Kiva. This is the second time such has happened this year. How about some souvenir for the bride, Boss?

"With every good wish to the entire force, I am, "

BANDELIER NATIONAL MONUMENT, Martin O. Evenstad, Acting Custodian.

"I arrived here on the afternoon of Monday the 23d. Found that Engineer Attwell had already left for Devils Tower. Met Lieutenant Roberts who is with the CCC camp. Found the construction of the barracks well under way, with a crew of about 30 men on the job. The lieutenant informs me that the CCC boys will move in about the 15th of November, when they expect to have all the necessary buildings completed, and water developed for the camp.

"I find this a most interesting place and so far have found the present personnel connected with the CCC to be a very fine bunch. The construction work is going on with real enthusiasm and the men in charge are looking forward to an interesting winter of work.

"Based on the actual count up to October 15, and estimating for the travel for the balance of the month the total travel for October is 340. The weather is very fine and favorable and the coloring of the dying foliage on the trees along the Rito de los Frijoles is gorgeous.

"The Acting Custodian has been kept busy since his arrival sorting various correspondence in the desk, cleaning house and getting started lining up on the duties he will be taking up under the EOW program. Had a most interesting trip through the various ruins along the canyon wall with Mrs. Rogers acting as guide yesterday.

"Best regards to the Bunch."

CASA GRANDE NATIONAL MONUMENT, Hilding F. Palmer, Custodian.

"Monthly report time has once more rolled around and we come up smiling to tell about the many important and interesting happenings at Casa Grande.

"Our visitors, although not quite as numerous as the same month last year, are showing a decided turn toward the more interested type. This is, of course, to be expected at this time of the year, which is the beginning of our busy season. Last October there were 1,347 who made the guided trip through the

ruins and museum, and this year 1,751, a slight decrease of 96. There were however 282 people who entered the monument and used some of its facilities, such as picnic grounds, comfort stations, etc., but who did not require guide service. Of the 1,751, 1,049 were from Arizona, 301 from California, and 77 from Texas; the balance came from 35 other states, 3 territories and one foreign country. They came in 524 cars. They were personally contacted on 233 trips through the ruins of Compound A and 224 lectures in the museum.

"The weather the first of the month was unseasonably hot, but the last few days have been of that unsurpassable Arizona kind and life in a uniform has once again seemed better. The maximum temperature was 104 on the 1st, and the minimum 45 on the 20th. The mean maximum and minimum for the month being 92 and 62 respectively; total precipitation was 1.90 inches, of which 1.50 inches fell during the 1½ hours on the 9th. This rain did considerable damage to road shoulders and ditches. There were 26 clear, 4 partly cloudy, and 1 cloudy days.

"The Public Works program is going along nicely. All force account projects are started. The camp ground development project is 90 percent complete, and work has been temporarily suspended on it on account of need for the men working on that on other jobs. Report of completion can be expected next month. Project 119, Repair of two quarters, is also nearing completion and this project will also be finished during November. Quarters No. 3 has been given an outside coat of stucco and the interior has been redecorated and put in good condition. Quarters No. 2 has also been given an outside coat of stucco and the interior is undergoing a complete remodeling. This building was the old museum and had never been finished suitably for living quarters. A new wood floor was placed on top of the old cement floors which were badly cracked. A two-coat job of hardwall plaster reinforced with chicken wire was put on over the old sand plaster. Carpenters are now building kitchen cabinets and work boards, closets in the bedrooms, etc. When this is completed the floors will be varnished, the walls kalsomined and the wood work painted. Although when completed it will not be the highest class house on the monument, it will be, as far as interior finish is concerned, modern and very comfortable. An entirely new built-up 10-year guarantee roof was also installed on this building. The outside of both those quarters is now completely weather-proof. Project No. 120, Water Extension, will also be completed very shortly. This work consists of replacing all ¾-inch lines with 1½-inch lines and running 1½-inch fire lines with hose valves. These valves will set about 8 inches above the ground level and two have been placed near each building. The plan has been to bring two lines to each building at such a point that two 50-foot lengths of hose would reach any part of the building. The storage capacity will be increased from 1,000 gallons to 2,000 gallons as part of this project. When it is completed, although we will not have adequate fire protection, it will be enough so that in case of fire at any building it will be possible to prevent it spreading to adjacent buildings, although we would be helpless to put out any fire that had gained headway. We have very little fire hazard because of the type of construction and when this project is completed our danger of fire loss is going to be small, especially since each building is

equipped with chemical fire extinguishers.

"Project 121 is well under way. This project is walls around the Administration Building and will simplify our problem of handling visitors. Foundations are partly in and adobos are being made. Project 122, a new residence, is in the preliminary stage. This project will be contracted. Sketch plans have been submitted and working drawings will be ready soon so that possibly bids will be out by December 1 to 15. Plans are delayed because of the rush of work in the San Francisco office on park projects that cannot be carried on in the winter. Down here at Casa Grande the winter climate is so "ideal" that we can work straight through.

"All of these improvements were badly needed. The camp grounds are now in excellent condition and our many visitors have a place unsurpassed for enjoying themselves before or after their trip through the ruins. Employees will be in much more comfortable quarters, the administration area will be much improved in looks, and the visitors can be handled much more easily and vandalism will be decreased; our fire hazard will be much reduced.

"Assistant Architect Langloy made an inspection visit during the month and settled several little problems that were worrying us. He accompanied Superintendent Tillotson of Grand Canyon on a trip into the southern part of the state. Harry sure knows his "stuff" and we are always glad to see him.

"Finally, everyone is busy and happy. We are trying to put out a good brand of service to our visitors and the Public Works is doing a lot of good around this section.

"The stray cat situation is in status quo."

CHACO CANYON NATIONAL MONUMENT, Hurst R. Julian, Custodian.

"There were 532 visitors at the Chaco Canyon National Monument during the month of October. A few interesting facts are observed in the register. There are nine states, New Zealand, and Tasmania represented. On one day ninety Colorado people signed the register, and some of the visiting Mayors and Commissioners who attended the convention in Phoenix stopped by with us.

"The Rotary Club of Durango, Colorado, was with us Sunday, October 22, and the number of visitors varied from day to day with ten on the lowest days to 127 representing the busiest day.

"Our distinguished visitors include Mrs. White Mountain Smith, of the Petrified Forest, Mr. Frank Pinkley, and our Chief Clerk, Mr. Miller. Mr. Miller took thirty-three photographs of pressing needs at the Chaco. They represented falling walls, eroding masses, need of improvements, and the sad story of the inroads of the Chaco wash on some of our great ruins such as Pueblo del Arroyo.

"The state magazine, "New Mexico," has announced that they will publish a three thousand word Chaco article in the October issue of their publication. Radio Station K O B is to broadcast the same material. The American Legion Monthly has asked for a similar article, and the Rotary Magazine has requested that I write one for them. This at first hand appears to be considerable work at the typewriter for me, but it is not so difficult because I have written much of it for various newspapers during the past year. These newspaper articles are combined in sufficient number and in such manner that the required length story is obtained.

"I wish to make public announcement of a belated but just recognition of the efforts of Dorothy L. Kaur in connection with the report which was issued in the last Monthly Report to the Director. Mrs. Kaur not only did "... . . most of the careful, painstaking, important work" in connection with the matter of the investigation of the "Cliff Cavities," but wrote most of the catalogue of materials and some of the interpretations as well. I think that this last fact was not made clear in the original report.

"There is an Indian Service engineering party in the field making a survey of the Crowpoint-Chaco Canyon road and the state maintenance crew has been at work on the old road, putting it in shape to handle the traffic temporarily. Being without funds, and the road having been impassable by recent heavy rains, it has been necessary that I work several days on the highways. With the volunteered assistance of the neighbors, including the moving spirit of the expedition, Mr. A. P. Springstead, the concessioner, we labored mightily. Drainage ditches were dug, holes filled, and other emergency repairs were made. The Superintendent of the Eastern Navajo Agency loaned us five Indian assistants for this work.

"Nothing has been done during this month on the cataloguing of museum specimens. It begins to look as though that job will be postponed until some particularly snowy and blustery period of the winter. Just now the weather is fine and the ground is not frozen, consequently I hope to get all the dirt moving jobs done before it is too late. The inside work can be done at any time that the weather makes it impossible to haul dirt."

EL MORRO NATIONAL MONUMENT, Evon Z. Vogt, Custodian.

"The weather has finally changed to October normalcy as President Harding used to say. Up to this time the fall has been anything but normal. It has been so mild that corn did not freeze until the 15th, a month later than usual.

"But we had a long slow rain on the 15th which brought a few clear nights on after it cleared up and these nights were cold enough to put quite a crimp in green growth.

"Grass continues green and owing to filling up of water holes and lakes again the grazing conditions are good. This is mentioned for western New Mexico is essentially a grazing country what with thousands of sheep owned by Americans, not to mention some 35,000 owned by my friends the Zunis and well over a million by the Navajos. The cattle also turn the grass into a living for many cow men though prices are not so favorable for them as for the sheep owners.

"Farmers are getting in their beans and corn, and selling what they can. Prices are slow, however, but there seems to be a cheerful feeling abroad at any rate.

"At El Morro the physical conditions are fine. Grass is tall, flowers still blooming, birds lively in the trees. A few tracks of wild cats in the wet sand around the Monument and a coyotte track trotting along the trail from the Camp Site in the Pine Tree Cove. Pack rats are making themselves at home in the comfort stations and laboriously building nests in which they are storing the few pinon nuts that grew on our pinon trees. We had to disturb the process of building these homes where they would interfere with human needs.

"The pinon crop generally is light, having been weakened by the heavy fall rains so that above the needs of the pack rats and pinoners or pinon jays there seem not to be enough to pay any one to go nutting on a large scale. However some of my Navajo neighbors have gone out to Cerro Alto, 15 miles south of the Monument and are bringing in fair gatherings of nuts which bring 6 cents per pound in trade at the trading stores.

"There has been no damage at our Monument since Mr. Peterson left. I went over everything very carefully and included in my inspection the inscriptions first, the pictographs, the ranger cabin, bridge, reservoir in the cove which is full to overflowing, roof of ranger's cabin, which I am going to give a coating of tar soon. No cans, no trash, just two banana peels to spoil nature's grandeur. The fence needed some repair in places and I am taking out a few short strands of wire to replace a spot where there are but three wires when four are needed. One wire was taken off for about 100 feet by some one needing a tow rope for a broken car, a resourceful little habit which often occurs in these parts where bad roads live forever and cars have short lives.

"The distressing thing at El Morro is the way the erosion is eating the soil away from the south side of the cliff from the De Vargas inscription on to the big arroyo. Unless we tackle that job soon we will have another deep arroyo parallel to the other one. I am counting on the landscape engineers of the Park Service on helping us out on this problem before another rainy summer comes along.

"The roofing paper caps placed by Ranger Peterson over the translation signs are very effective I think and do the work well enough.

"The west gate is in bad repair so I am planning to put up the iron gate which we have stored in the cabin and which was bought for this entrance to our grounds. I will have to get a good cedar post and replace the one which has been up many years and now rotted out so as to weaken it. The east cattle guard needs some concrete on the ends of the rails to keep them from bouncing loose and I hope also to get this done the same day I fix the west gate.

"We have had a steady run of visitors, many from afar. Studying the visitors' book shows that an increasing number from Grants and Albuquerque come in from the east. Brigadier General Wood visited El Morro with some of his officers and friends.

"Another visitor who came was Mr. A. W. Barth who came along almost a year to the day from his first visit in 1932. You will recall Mr. Barth as that graduate of the University of London who now lives in San Diego, where he is a landscape gardener by vocation. Mr. Barth is the author of "New Notes on El Morro" in Art and Archaeology (Washington, D. C.) in the May-June Number, 1933, in which he made many interesting observations. His translation of the last line of the Governor Silva Kieto inscription as, "Well May to Zuni proceed and the Faith thither Carry" seems to be a solution of a long standing doubtful line and it seems to me a correct solution.

"Mr. Barth hitch hikes his way and despite his age and deafness makes fine progress. His knowledge of Spanish history seems unending. At present he is translating Castaneda's Narrative of the Coronado Expedition, 1540-1542. I think we may expect some more illuminating articles about our Monument and its historical treasures from Mr. Barth.

"After having lunch with Mrs. Vogt and myself I took him to El Morro where he at once delved into its mysteries.

"I am expecting a visit from Mr. C. A. Richey of the Landscape Engineering staff, after which I will write you.

"Your last month's report was very interesting. I read with especial interest the Pipe Springs notes on old frontier history.

"With best regards all around."

GRAN QUIVIRA NATIONAL MONUMENT, W. H. Smith, Custodian.

"Another month has passed and I find it time to send in my monthly report again. I have registered 361 visitors entering the monument in 78 cars, with two well-loaded trucks of picnickers. This shows an increase of 174 visitors, nearly 50 percent, and 32 more vehicles over the same month last year. Apparently financial conditions are on the mend.

"Weather conditions have been fine for travel this month with scarcely any rain and but few cloudy days. The days are staying warmer this fall than is customary for this country. Nights are beginning to get cool. Only last week we had the first ice I have seen this fall, which is 20 or 30 days later than usual. Generally at this date in this altitude we have had several freezes and occasionally a snow or two.

"In the afternoon of October 14 quite a gale came up and blew our flag pole down, breaking it off near the ground and also in another place near

the center of the pole. This is going to require a new pole before we can float the Stars and Stripes again.

"As the grass and other vegetation of the monument are drying up, there will be some danger of fire. I will spend my spare time in the next few days erecting some fire warnings, which may caution our tourists to be more careful with fire."

MONTENZUMA CASTLE NATIONAL MONUMENT, Martin L. Jackson, Custodian.

"For the month of October we have had a total of 991 visitors to Montezuma Castle, with 267 registrants in the building. These came from 18 states and Washington, D. C. Weather has been very good for the past three weeks, and consequently the roads are pretty fair.

"The Old Settlers' Picnic was held here on October 15. They totalled 320, and parked in 77 cars, which we handled in the new parking area. Only a small percentage of the old-timers climbed to the Castle, as most of them had been there many times. In accordance with policy I am not encouraging these large reunions and picnic affairs on the grounds. I believe the Old Settlers will not convene here again, as they disliked not being able to drive their cars all over the picnic grounds.

"We look for a much busier winter season this year than usual, for we will have three large C.C.C. camps in the valley, located at the mouth of Oak Creek, and the Clear Creek ranger station, and at the Beaver Creek ranger station, of which at least one will be a permanent camp. As the Castle is the nearest place of public interest, we expect these boys to visit us on Sundays and holidays. Also, we hear that the several guest ranches in the vicinity have reservations for all available quarters this winter.

"The Smoki people and the Chamber of Commerce of Prescott are working conjointly in the interests of the Smoki museum there, and have some young archaeologists working in the field gathering material. They accosted officials of the United Verde Copper Company for permission to excavate a large ruin on company owned property. The company has the Castle interests at heart, for they specified if any digging was done the Castle museum should receive firsts on any artifacts found.

"If the Verde dam goes in, as we have high promise it will, the high water mark will cover some exceedingly interesting ruins and one of the two finest groups of prehistoric cave lodges in the United States. It seems a shame that such fertile ruins should be covered forever from the eyes of science when our museum in the future could so well harbor artifacts from those places."

NATURAL BRIDGES NATIONAL MONUMENT, Zeke Johnson, Custodian.

"Seems like the months roll by pretty fast these days. Fall is gone and winter will soon be here. People are still going out to the Monument -

nearly every day a car.

"I have bought 100 pounds of sweet clover seed to sow in the canyons out at the Monument. I believe it will thrive and help things out a lot. I am going out tomorrow to sow it and cache all my outfit for the winter, and then go out west and get me a few red fox pelts to sell. I have orders for 6 or 8, and I can get them very easily. This has been the most perfect fall I ever remember in this country. The canyons are still full of beautiful flowers.

"I hate to leave here this beautiful time of the year, but I will be prepared to come back early in the spring."

"I forgot to tell you that I succeeded in getting Floyd Dalton out to Caroline Bridge and taking his name off. It is all OK now and I am very glad."

NAVAJO NATIONAL MONUMENT, John Wetherill, Custodian.

"We have had quite a summer. To begin with, we had Ansel Hall's Monument Valley and Rainbow Bridge exploring expedition here to visit our ruins and all the other points of interest over the larger part of the section between Kayenta and the San Juan River and from Chin Lee to Lee's Ferry. Then we had our superintendent and his son with Miss Story from the Washington office, and Mrs. White Mountain Smith's sister from the Petrified Forest National Monument. Then we had a fall of rock from the roof of Kit Sil cave of about ten tons that carried down the part of one room, but did no other apparent damage. In August Dean Cummings walked from the Marsh Pass to Betatakin with his eighteen students. They slept at the ruin and one of the boys, thinking he was a cliff dweller, went in one of the rooms to sleep. In the night he thought the enemy was after him and he jumped out of the door wrapped in his blanket. He landed in one of the lower rooms and they carried him the eight miles back to the pass on a stretcher. He was in the hospital for two days, and as the nurses made him put on his clothes and get out, he drove his car on to Gallup with the rest of the party.

"I don't know when you will see this letter. It has been raining for five days and the roads are almost impassable. The bridges are all gone. The trails in the Tsagie are badly washed out.

"Marshall Pinnan passed through Kayenta a few days ago. He was going so fast that he couldn't stop his car, so I did not get a chance to see him. He left word somewhere along the road that he had to be at the Grand Canyon by noon or he would have stopped. The Shanto outfit are building a trail down the head of Betatakin Canyon. We need a ranger on the job as soon as we can get one. You might make me ranger until you can send one up; as it is I cannot spend all my time up there without a salary."

"Hoping you have a full season, with best wishes, I am . . ."

PIPE SPRING NATIONAL MONUMENT, Leonard Heaton, Acting Custodian.

"I don't know just where to begin on this report for October, as there are several items of interest that have occurred that need to be recorded in this monthly letter.

"First I might give an account of the travel and the new way I am endeavoring to follow. As you mentioned in the September report that there would be a different system of counting for the future, I have been trying to work out something appropriate for this monument that will answer the requirements and give what information you might want.

"To give you an idea of what I am working on I will try and outline what I have done. First I have counted all people that have passed or come to the monument, whether once or more times per day, and whether they are local people or not. Then of this number I have another count of those that stop to see the fort and are shown through either by myself or H. C. W. P. Mrs. Heaton. Then we have a lot of night travel which I only guess as to the number of passengers in the cars. Using this system for the past month I have a total of 694. Of this number I have contacted and shown through the place 67; 90 is the estimate of the night travel.

"In the past I have not kept track of the travel that comes by on business or don't seem to have any special interest in the place, as some of the local people, but just those who I consider interested in knowing of the old fort and its history. For example, of a days travel I will give you October 23. Seven men on horses in the morning and back at night; count 14; 2 men with teams; count 16; mail driver and 1 passenger; count 18; 3 in car from west to Kanab and return; count 24; 2 in car from west; count 26; 4 in car from east; count 30; 6 from east and return; count 36; count for the day, 36. I do not keep this kind of record, but that is the way my travel is by this monument. I am trying to get some form worked out where I can keep a better record of the travel and classify it.

"Now for a few lines regarding the visit of Tom Vint and party. On the 27th of September Mrs. Heaton had been suffering with a toothache, so I started to the dentist with her about 2 o'clock and had only gone about 4 miles when I met a Zion Park car. I stopped to see who was in it and to my surprise I found Mr. Tom Vint, Harry Langley, Superintendent Patraw, and Mr. Hommon. I came back with the Park Officials and sent Mrs. Heaton on to town.

"On arriving here I showed them through the fort and gave them about the same line of talk I give all tourists. Of course there were interruptions, as we came upon some problem that we discussed on the spot. Then for an hour and a half we went over the grounds and the drawing Harry had made of the place from his earlier visits, making corrections and suggestions. Also discussed the water question and how the water was being used, how much the Park Service would need, what the Indians and cattlemen needed, also the past history of the use of the waters and what rights were given over to the government.

"The opinion expressed by these men was that the one-third rights of the cattlemen be recognized, the park taking what water they needed for residence, rest rooms, camp ground taps, irrigation of meadow and trees in the camp grounds and possibly a garden for the custodian, Indians getting what water was left.

"Development plans call for a change in the road to go from the southeast corner of the ponds east, south of the woman's rest room to the east boundary of the monument. Between the new road and the large clump of Alantus trees will be the rest rooms with flush toilets. East of the fort is the camp ground to be planted with trees this fall. A barrier is to be placed so that cars cannot get up to any of the buildings or between the ponds and fort. The plans also call for moving down to the road to the corner of the west pond the water where people can fill their barrels and water cans; moving the store to some other site if travel demands a store. South of the new road will be the residence and garage. The two ponds will be left as they are in the meadow; and I will move my sheds that are by the meadow.

"The Indian Service has had two men working at enlarging the pond that was used by the two young Indians this summer. The pond will be, when finished, 130 feet long, 90 feet wide, and 6 feet deep.

"The past week I have been getting the water out on the camp ground and preparing it for the planting of the trees this fall and doing a bit of cleaning up of the dead weeds. I regret to report that I have cut out half of the big elm tree that leans against the house. Either it or the house had to be moved and, as Tom Vint said, "it is easier to move the tree and trees can grow. The Fort; well it would be quite a job." You know that something had to be done about it as the wall of the fort was being pushed in by the tree.

"In all the years that this old fort has stood and had all kinds of visitors, this fall is the first time since it began that the fall cattle roundup has not camped here for the last three or four days work in getting the steers off to market. This year the cowboys had to go to other parts of the range to find feed and pasture for their cattle. Of the usual two or three thousand head of cattle handled here each fall only a hundred or so saw this place and they were cattle that are pastured most of the time. I have been wondering if the corrals that stand in the southwest corner of the monument will soon be all that will be left to remind us of what was once a common sight here in the past.

"I am also hunting down any old relic that should be here in our museum, such as a telegraph instrument of 1871 and the telegraph signs that were here. I just learned that one was at a dry farm in Short Creek. I also want to get some couches and beds, guns, and the spools that were used to wind thread on as it came off the spinning wheels. I added an old chair this month, and a bullet loader.

"We had been bothered for the past two or three weeks by a pole cat. Don't know as to its being the one that was here last fall or not, but it came almost every night, getting into our butter and fruit. Then last night he met his death by the only real enemy that he has, the great horned owl. I found him this morning at the foot of the flag pole half eaten up. I took his remains and gave them a burial some distance from the house.

"I turned the snakes loose the fore part of the month and now I am forever having people ask what I did with them and why I didn't keep them so that they could see them.

"Our frost has held off so far this fall and the trees are just beginning to drop their leaves, which means work for the custodian keeping the leaves out of the house, spring, and ponds. That's what a custodian is for - work, and like it no matter what kind it may be.

"Well this is a lengthy report, but as I said at the beginning, there were several items of interest to report and maybe I am taking a lot of your valuable time in your reading this report, so if you don't like it, chuck it in the waste basket and forget it."

Any time we put we put an interesting report in the waste basket!

TUMACACORI NATIONAL MONUMENT, Tubac, Arizona

"Visitors for the month of October - 614.

"The past few days we have been getting quite a number of winter visitors from Tucson, and the Federation of Women's clubs held at Nogales also brought quite a number of visitors.

"Owing to the death of Edgar Rogers, Custodian at Bandelier, Mr. Evenstad has been transferred to Bandelier. Mr. Evenstad was by far the best man we have ever had at Tumacacori and we very much regret to see him go.

"The government has approved the construction of a new Federal building at Nogales and also money for the flood control at that place. Nearly \$500,000 will be spent on these two projects and it is quite astonishing how this section of the country has already begun to boom. It is going to increase the number of visitors at this monument considerably.

"I made a short trip into the Cochise Stronghold country and almost every gulch and creek bed is being panned for gold. I picked up about fifty arrow points, but nearly all had been broken due to the stoney condition of the hillside.

"Says Phoebe is very common here on the monument and during cold weather they go into the garage at night where they are prisoners until we open the doors in the morning. Last year they did not seek shelter until late in November, but this year they came in the 21st of October which is a sign of colder weather I think.

"Mr. Langley of the San Francisco office, and Mr. Tillotson of the Grand Canyon National Park, also Mr. Pinkley and Chief Clerk Miller were among our visitors for October."

WHITE SANDS NATIONAL MONUMENT, Tom Charles, Custodian.

"At the suggestion of Leonard Henton that our monthly travel count is in some way connected with hoped for funds, I am putting my mensly, part-time count at the head of the column. On Sunday, October 15, we left Albuquerque at about 8 A. M., visited the Elephant Butte Dam, ate lunch in Hot Springs, spent an hour with a new grand child and the happy mother (our daughter) at Las Cruces, and then drove, rather leisurely over the White Sands road 72 miles, between Las Cruces and Alamogordo. We drove the 72 miles in 100 minutes and passed 60 cars, 7 of which were stopped at the Great White Sands. Two-thirds of the 60 cars had Texas licenses and we presume that practically all of these were making the loop drive from El Paso to Alamogordo, picnicking at the White Sands, and returning home by way of Las Cruces."

"We did not count the cars which we met between Albuquerque and Las Cruces, but it is safe to say that we met twice as many cars on the 72 miles of White Sands road as we met on the other 250 miles of the trip.

"Your 'Custodian of Sands' took a day's trip through the Lincoln National Forest one day this month, guest of Ranger Lou Loney. Far up on the hills, near the timber line, at the side of the road was a half bushel or so of pure white sand, unquestionably a part of my charge. What would Tom Boles do if he found one of his Carlstad Cavern stalactites lying out along the side of the highway? But this was different - this is a story of pathos and love, of the old flivver with its last breath trying to make the top of the hill. Of the tired mother walking with an armfull of rocks, scotching the car. Then the finale; the crying child having to give up its cherished box of magic sand - the imprint of the chubby fingers still showing in the pile of sand tells the story of the fond farewell.

"Even the cold policy of 'undisturbed' could not fail to melt before such a scene. Some line of reasoning must show that the Great White Sands is different, for one of the outstanding values of this new monument is the pleasure which Young America is to get in carrying it away. It is probably the only National Monument where the policy of 'Come and Take it With You' may safely be advocated. Tonight's mountain breeze will heal today's most tragic scar. The factory at the old Black Lake, with its perpetual production, will pile up more magic crystals tomorrow than all the children in New Mexico

can carry away tonight.

"Your guess that the water turns red in our lakes as a sort of signal to the cattle that there is too much alkali is all wrong. Old timers tell us that no cow ever lived on that water long enough to see the danger signal. Professor Botkin, of the Chemistry Department of the State College, reports that the red in the sample of water is not due to inorganic compounds. The Biology Department of the same school believes that the red is due to some strain of bacteria. If these college fellows cannot figure it out, we expect to turn it over to the Alamogordo Chamber of Commerce. There is little doubt but some one in that group will give unqualified information as to what the red lakes are all about, especially if they are as good on lakes as they are on weather.

"George Boudney, of the Tunacagori National Monument, acquired his first love of the southwest in the years that he spent at a cow camp near the White Sands. We are glad of it, for there may come a time when we will need a corroborating witness for some of those flash reports of ours."

WUPATKI NATIONAL MONUMENT

"The following story of work done this summer at Wupatki National Monument by the Museum of Northern Arizona makes a most interesting addition to this report.

WUPATKI NATIONAL MONUMENT

By

Lyndon L. Hargrave, Field Director
Museum of Northern Arizona.

From April 1st to October 1st of this year the Museum of Northern Arizona maintained an archaeological camp at the pueblo of Wupatki. As the work was in my charge, I suppose I might consider myself a self-appointed Custodian. Since the lamented death of Mr. J. C. Clarke last summer, this monument has been without a Custodian. Members of the Museum staff have at various times made official trips to, or have been in the neighborhood of, the pueblo and have been able to keep a weather eye upon the place.

A few words about the Monument, and the pueblo of Wupatki in particular, will not be amiss at this time for they are scarcely known even in official circles. Wupatki may be considered one of those Monuments which has been set aside because of the foresight of a group of interested citizens anxious to preserve for posterity a unique and scenic spot of general and scientific interest. Within the boundary are innumerable ruins of prehistoric peoples whom we know occupied that section between the tenth and thirteenth centuries A. D. Ruined habitations from the pithouse stage to that of large communities of stone buildings are to be seen there. For persons of general interest only

these larger pueblos have more appeal because of their conspicuousness and also because they harmonize so perfectly with the surrounding country.

Wupatki is not recently discovered, for it was visited as early as 1851 and was reported upon in 1853 by Lt. Sitgreaves. Its date of discovery thus antedates by more than twenty years the discovery of the famous Cliff Palace and many another of the larger pueblos. Wupatki is, therefore, one of the earliest of the pueblos discovered by officials of the United States Government. At the time it was seen by Sitgreaves, many rooms were in perfect condition with large beams supporting a roof of grass, brush, or reeds, and earth. Until recent years a part of one of these roofs remained. Its remarkable state of preservation is due to the extreme dryness of the locality and because the walls are constructed of flat sandstone slabs, which conditions have insured the durability of the pueblo. The most impressive point of consideration, however, is that the pueblo is entirely in the open and is thus exposed to the elements at all times.

The natural setting of this pueblo is a thing of beauty. At an altitude of 5000 feet; sunshine and warmth are assured the greater part of the year and the locality is a favored spot for picnicking when the nearby San Francisco Mountains are covered with snow. The southern boundary of the site is a high black lava escarpment at the foot of which are large dunes of volcanic cinders. The foreground is of red Moencopi sandstone which extends to the Little Colorado river, about six miles away. East and north the variegated colors of the Painted Desert contrast strongly with the somber hues of the volcanic background. Probably in no monument of the southwest is the beauty of the Painted Desert and the appeal of Man's past so strongly linked together and emphasized as it is at Wupatki.

Repeated observations made by the Museum upon the Monument these past two years have revealed that the situation there was not too encouraging. In fact, the Monument lay open to attack from anyone. Its distance from Flagstaff, the nearest settlement, is more than forty miles. Few people, other than those who know the country, ever visit these ruins. The isolation of the locality and the fact that within the past two years a fair road, graded part of the way, has made it possible for pot-hunters to easily reach the Monument where depredations could be made without great fear of being discovered at the time. In fact, so many changes for the worst were noted that the Museum secured a permit to conduct archaeological investigations at the pueblo of Wupatki. Through this work it was hoped to save for science the cultural material remaining there and at the same time to devote some time to the preservation of the more dilapidated part of the pueblo.

At times this season as many as eight men composed the personnel of the expedition and the work consisted of mapping, excavating, and restoring. A contour map of the quarter section containing the pueblo of Wupatki was made, contours being run at ten foot intervals. On this map was located every indication of a prehistoric habitation, all arroyos (thus determining the drainage immediately affecting the community), and residual junipers. A detailed plan of the pueblo was also made and data were tabulated for a model restoration of the pueblo should it ever be completely excavated.

Before excavation could be undertaken, however, the talus accumulation had to be removed from the southeastern block of rooms where the major work was to be done. Also a trail had to be built along the western side of this block where two rooms had been selected for restoration. Nineteen rooms were completely cleared out, some to a depth of twenty feet through three rooms deep. These superimposed rooms were back-filled to the floor level of the remaining upper room. One room (R 49) was found to be a rectangular kiva. Excavation was also made of a large depression on the eastern slope, which work revealed a large circular area, approximately fifty-three feet in diameter. This area once had a high enclosing wall of masonry except on the northeast where there was an entrance. The absence of kiva features, other than a banquetto, suggests that this "amphitheater" may possibly have been built as a plaza since no evidence of a plaza was found. This structure is by far the most imposing architectural feature of the pueblo.

Weakened walls were partially restored and three rooms and the "amphitheater" were reconstructed. Roofs of the rooms were copied from types found while excavating. Materials used, with the exception of the roof beams, were gotten at the site.

In addition to the actual archaeological investigations much information was gathered from other sources. The Museum had maintained a rain gauge at the site during 1932 and so during the summer of 1933 meteorological data were increased by maintaining a weather bureau. At intervals during the summer Dr. Colton and Miss Bartlett continued their study of the geology of the locality, a project started some years ago. Data on the wild life of the vicinity was gathered both by Mr. Charles Quaintance, Associate in Mammalogy, and by various members of the summer archaeological expedition. Collections of the mammals, birds, and reptiles were made. Near the Citadel pueblo the Museum recovered pleistocene paleontological material from a solution crack in the limestone.

Travel conditions were improved by signing the road, by marking the Monument, and signs warning against unauthorized excavating were placed at strategic points in the Monument.

A register was kept during the summer months and about 300 visitors were recorded, the most important party being the International Geological Congress of more than forty members from various parts of the world. A lecture upon the pueblo was given by a member of the Museum staff. Though this number of summer visitors is small when compared with that of most Monuments, few tourists hear about, or learn of, the location of this Monument. As a result of the summer's work, however, the attendance this coming year should be much higher.

The investigations of the Museum of Northern Arizona on the Wupatki National Monument are not completed and it is hoped and planned to continue these investigations another year. The possibilities of this Monument are so great and varied that it rightly should receive more consideration both locally and nationally.

IN GENERAL.

The weather through the district seems to be ideal for travel. The roads have been in good condition except as to side roads just after rains. The road from U.S. 66 past the Chaco Canyon National Monument to Aztec Ruins National Monument is in better condition than I ever saw it.

It seems to me that business in general through the district is on the upward trend. Tourist traffic, however, has not yet shown much upturn; it would be natural for it to lag behind general business conditions.

The Service men in the Southwest are all busy and have work laid out ahead to keep them busy for the winter months.

We are now badly short handed and have no funds to hire help in handling visitors on busy days. Ed. Rogers' death and the separation of Hugh Curry from the Service have automatically impounded those salaries for the rest of the fiscal year. It isn't fair, in these times of thirty and forty hour working weeks, to ask George Boundey and Martin Jackson to work three hundred and sixty-five days a year, yet that is what they are up against unless we can get a release on those impounded funds and hire help when and as needed.

In our headquarters, the paper work has increased about one third in the last six months. If it doesn't level off pretty soon we will be sunk. Our Chief Clerk has had about three days off in the last two months and our office hours are from eight in the morning to about six in the evening. We don't get the seasonal let-up which occurs in some places either. Our winter is as heavy as our summer and we have a high peak of work over every month-end. All this isn't a complaint; I'm just telling you. I know you folks in Washington are in the same fix and I just want you to know why we can understand and sympathize with you.

Cordially,

Frank Pinkley
Frank Pinkley,
Superintendent.

*Jim - it was send the
Don't we send the
a copy of your report
LH/r*

SUPPLEMENT
OCTOBER REPORT
SOUTHWESTERN MONUMENTS

November 1, 1933

Dealing with people, "shop talk" and other subjects of interest.

"Threatening Rock" standing behind Pueblo Bonito has been the subject of considerable study by Park Service Engineers and by students of Archeology. We take a great deal of pleasure in presenting here a most interesting report entitled "A Study of Primitive Indian Engineering Methods Pertaining to Threatening Rock" by John Yak Keur of the Biology Department, Long Island University, Brooklyn, New York. During the Summer of 1933 Professor Keur pursued studies on Threatening Rock while Mrs. Keur of the teaching staff in Anthropology of the same university made studies of the cliff cavities or cliff cysts of Chaco Canyon. Mrs. Keur's catalogue of materials from the cavities and her descriptions can be found in the Supplement of the September Report dealing with these excavations.

CHACO CANYON NATIONAL MONUMENT

THREATENING ROCK

Introduction.

"Pueblo Bonito in Chaco Canyon was constructed by its ancient builders close to the North wall of the canyon. This North wall rises almost vertically to a height of 100 feet directly behind the present ruins. The cliff shows the effects of erosion, its surface is streaked and weatherbeaten, full of cavities which give the face of the rock a lace like appearance in places. The base of the cliff shows erosion to a much greater extent, here and there wind and sand have caused a deep undercutting resulting in the formation of caves. An enormous block of sandstone has become detached from the cliff and threatens to fall on the West part of the Bonito ruin. This report deals with the attempts which the ancient Bonitians have made to prevent or delay the falling of this huge mass. The inhabitants of the pueblo must have been aware of the damage that could be done by such a mass of rock when and if it fell, for rock falls and slides are of frequent occurrence in the canyon. It has been suggested (E.L. Hewett, "Ancient Life in the American Southwest" page 303) that this "threatening" rock might have been a cause of the abandonment of the Pueblo by its inhabitants. The Navajo refer to the rock as Sabaohnnai or Ysabeadnai meaning "Place where the rock is braced up".

The relation of the rock and the Pueblo.

"During July and August 1933 the writer investigated the attempts which the inhabitants of Pueblo Bonito had made to prevent Threatening Rock from falling. The West corner of this rock stands 120 feet from the North wall of the Pueblo. The North wall curves away from the rock in such a manner that the further part of the curve is 190 feet removed from the East corner of the rock. Threatening Rock is 100 feet high, 140 feet long and approximately 34 feet wide. (At midheight) If this rock had fallen as a unit without splitting - which was quite unlikely * its West corner would have jarred and probably crushed the back wall and rooms of Pueblo Bonito. If the rock had split while falling the resulting masses might have rolled right through the back wall which at present shows evidence of four stories. The damage of such an occurrence would have been considerable and it is not surprising that the Bonitians did what they could to prevent such a fall. Their handiwork, now uncovered, presents a marvellous and constructive example of the efficient engineering which they practiced.

The relation of the rock and the cliff.

"Threatening rock stands now entirely detached from the cliff. It is slightly wedgeshaped, with its greatest width at midheight. The vertical split between the rock and the canyon wall is from 10-12 feet wide at the top and from 3-4 feet at the base. This difference in width at top and base is not entirely due to leaning forward of the rock but rather to the weathering and loosening of smaller sandstone blocks from the surface of the cleft. The space between rock and canyon wall is partly filled with these loosened rocks, which may have a great effect in hastening the fall of Threatening Rock. Water collects between these loose stones and during freezing weather considerable expansion pressure may be exerted upon the rock.

"In addition to a slight forward leaning the rock also shows a settling in the alluvial mass of the canyon floor. This can be judged by making a comparison of the relative position of the same stratum in the rock and the canyon wall. At some points the difference in levels is 8 inches. The rock shows not only a leaning away from the cliff but its upper part (3/4 of its height) is beginning to split away horizontally from its lower part. Thus a wedge shaped horizontal crack can be seen at the back of the rock, indicating an additional tilting of the rock on its own base.

The front surface and base of the rock.

"The front part of the rock shows a fairly uniform -though

weathered - surface. One large vertical crack, 40 feet from its East end is visible, extending from top to base. Several other smaller cracks are present in the front surface. The base of the rock is far from uniform, showing a deeply extending erosion in spots. This undercutting extends in one place from 14-16 feet, which is almost to the gravity axis, the width of the rock at midheight being 34 feet. About 1/4 of the area of the base of the rock lies in front of the gravity axis. As a result of the erosion at the base we find several caves, especially at the West base of the rock. If this undercut had been uniform along the entire base the rock would have undoubtedly fallen long ago. In its present condition the rock may remain standing for centuries, provided that further erosion can be prevented and barring earthquakes.

"The overhang at the base of the rock is greatest at the West end where over a length of 60 feet the undercut varies from 4 to 15 feet. The overhang of the remaining 110 feet is much less, ranging from 3 to 6 feet.

The embankment in front of the rock.

"The ancient Bonitians constructed a large embankment in front of Threatening Rock which at the start of this survey appeared as a rich eroded talus. The flat top or terrace of this embankment extended to the base of the rock for a distance of 15 to 20 feet depending on the erosion. From this more or less horizontal terrace rocks and sand had formed a slope extending 20 to 30 feet further to the front. This slope had been previously dug into at right angles to the embankment exposing at two points parts of a rock veneer, 5 and 8 feet long respectively. On the flat top of the embankment remnants of a wall parallel to the face of the rock could be seen, constructed at the place where the overhang was most pronounced. At the West end of the rock 60 feet of this wall was standing while at the East end a 26 foot stretch of wall was visible. At present the height of these walls does not quite reach up to the overhang, the highest wall fragment now standing comes to within 2 feet of it. It is probable that originally this wall was constructed clear up to the overhanging parts of the rock.

Determination of the construction of the embankment.

"The first part of the work consisted of the exposure of the remaining stone veneer which at one time covered the entire front of the embankment. It was found that the East corner of this veneer extended originally to a point 40 feet beyond the East corner of the rock. This point was marked by a huge 20 foot long

block of rock which apparently had been used as a corner stone or starting point for the embankment. Next an attempt was made to locate the West corner of the veneer. At the West end of Threatening Rock a large pile of fallen rock is present, consisting of huge blocks of sandstone and much debris. At one time this mass of rock might have been in the same position in relation to the canyon wall as we now find Threatening Rock to be. This fallen pile was present in 1900 and probably referred to by N. C. Nelson ("Notes on Pueblo Bonito" Anthr. Papers Amer. Mus. of Nat. History, vol. 27, 1920 page 389) who raised the question if this fall had occurred during the occupation of the Pueblo. Earlier visitors and investigators give little information about the presence of this particular rockfall. W. H. Jackson states (Report on the ancient ruins examined in 1875 and 1877", 10th annual report of the U. S. Geol. and Geogr. survey, Washington 1878 page 442) that: "The Pueblo was built within about 20 yards of the foot of the bluff, but a talus of broken rock occupies all of this space, excepting a narrow passage next to the Northern wall, quite clear if the mass of fallen rock referred to was present in 1875 or not.

"The writer succeeded in following the veneer Westward to a point 8 feet underneath this mass of rock, indicating that the embankment and its veneer were built before the mass fell. The weight and size of the individual stones as well as the complete absence of laborers made further excavations impossible. The entire length of veneer exposed was 185 feet.

"As the next phase of the work an attempt was made to locate the veneer on the other (West) side of the fallen mass of rock. There a trench 5 feet wide was made at right angles to the cliff wall. If the veneer continued underneath the rockfall in a straight line no evidence was found of it appearing again at the West end. The trench did show evidence however of walls at right angles to the cliff, badly crushed by fallen blocks of stone, some of which were too large to be removed and interfered with a thorough excavation. These walls might indicate the presence of rooms at the base of the cliff, a possible continuation of a small previously excavated dwelling consisting so far of one small kiva and a room, located a few yards further West against the cliff wall. If laborers had been available further excavations might have shown better results, the writer had to abandon further digging due to the cumbersome debris. As yet then the West corner and extent of the embankment remain covered. At some future date this may be determined by moving the debris or by sinking test shafts straight downward from the center of the fallen rock mass.

"The 185 feet length of veneer uncovered is at present in a precarious condition due to of erosion. The veneer was exposed to a height of 2 to 5 feet. At intervals of 50 feet shafts were dug to determine the base foundation of the veneer. The distance from this base to the flat terrace on top of the embankment varied from 16 to 19 feet, indicating the original height to which this embankment was constructed.

"The material removed from the foot of the veneer consisted of blown and washed sand, stones fallen from above and near the base of the veneer several piles of mixed clay mortar. The veneer itself is in a fair state of preservation, it appears banded in construction, regular rows of larger stones alternating with from 1 to 4 rows of much smaller ones. No doorways, entrances or stairways were found.

"Behind this veneer and extending to the top of the terrace a mass of irregular stone set in adobe was uncovered, extending the entire length of the embankment. These large and mostly flat stones had been placed horizontally and covered layer upon layer with adobe. However, this mass of stones did not fill the entire space between the veneer and the base of the rock. The width of this stone pier ranges from 14 feet at the West end to 18 feet at the East end, while the terrace is from 28 to 34 feet wide (measured to the base of Threatening Rock.) In order to determine the character of the fill between the stone pier and the rock-base several trenches were made at right angles to the rock. The fill material consisted largely of a top part of blown in sand mixed with stones fallen from the wall above, while below the terrace level the fill was found to be composed almost entirely of a mixture of sand and clay, free from stones. The above mentioned trenches were constructed to the base of the walls erected ~~underneath~~ underneath the overhang of the rock. However, these walls are not present along the entire front of the rock, 60 feet from the East corner, extending to a distance of 40 feet west no evidence of such walls could be seen on the surface. Through the center of this space another trench 4 feet wide was made at right angles to the rock. This trench did not show the presence of a wall connecting the East and West walls which had been erected under the overhang. The following evidence relating to the construction of the embankment was obtained from this particular trench. The width of the stone pier was first determined, 16 feet to the front veneer. The distance from this stone pier to the base of the rock was found to be 16 feet also. After the top part of the trench consisting of drifted sand and debris had been removed it was found that in filling in the space between stone pier and rock clay and sand had been used, clay near the rock and pure sand near the stone pier. At the bottom

top of the trench the sand fill was found to be 10 feet wide and between this fill and the rock a 6 foot wide area of clay was uncovered. These measurements are taken at right angles to the rock. On excavating deeper the sand area became more narrow, the clay area correspondingly wider. At a depth of 7 feet the sand occupied only 3 feet of the 16 foot trench, the remaining 13 feet were found to be clay. This clay was very closely packed and very hard. It showed evidence of having been poured in layers, slightly tilting away from the base of the rock. The stratification could be clearly discerned. The area occupied by the pure sand between the clay and the stone pier was more or less wedge shaped. In making an interpretation of this unusual construction the following suppositions can be made. If--at this point--the entire space between the stone pier and the base of the rock had been filled by hard packed clay any forward settling of the rock would have caused a tremendous pressure on the embankment, causing it to be pushed forward which in turn would have resulted in a leaning forward and perhaps falling of the front veneer. However, with a sand wedge present, any pushing forward of the clay buttress would have resulted in an upward pushing of this sand, preventing in this manner the weakening and cracking of the front stone pier. In other words the sand would have acted as a sort of pressure absorber.

The part of the clay buttress nearest the rock to a width of 2 feet was excavated carefully with a trowel to study the rock surface. Gradually in this manner the rock base was uncovered. When approximately 12 square feet had been cleared of the rock surface, faint cracking sounds were detected. Close inspection showed the appearance of fresh cracks in the rock. These cracks were carefully plotted from day to day. Eight separate ones were thus located, varying in length from 4 to 13 inches. It was thought at first that these cracks might be a result of the drying of the rock on exposure to the air. However the clay was very dry, due to a slight overhang of the rock no rainwater had fallen directly on it. Also in the lower 2/3 of the trench the rock showed no evidence of cracks whatever. The sandstone layer in which the cracks did form appeared weaker than the underlying layers. The cracks must have been the result of the tremendous pressure from above. The question arises: "Is the rock still settling?" The Threatening Rock stands at present in somewhat the same position as a brick on a piece of soft material such as rubber, with one half of the rock on it, the other half off. (J. B. Hamilton, "Survey of Threatening Rock", Report of the engineer, October 1932.) As a result of such a position greatest crushing weight occurs under the center of the load, because the overhang tends to tip the rock at the back. Such tilting can at present be seen at the back of the rock near its East end where horizontal wedge shaped cracks have appeared. These cracks are from 2--3 inches wide at the back and extend into the rock for a distance of nearly 15 feet.

The construction of walls under the overhang.

From the terrace level the Bonitians constructed a wall parallel to the rock and apparently up to the overhanging part of Threatening Rock. This wall is not continuous along the entire length of the rock, it is found only underneath the greatest overhang of the rock. There are two such walls, one at the west end of the rock and one near the east end, with 40 feet of open terrace in between. The East wall starts at a point 22 feet West of the East corner of the rock. This wall is 26 feet long and from one to four feet high at present. The highest fragment now standing is ten feet above the terrace level and comes to within six feet of the overhang, which at this point is ten feet. From this outer wall three smaller walls have been constructed dividing the space into rooms or compartments. In this manner two rooms have been formed. The East corner of this group of rooms forms a large buttress-like mass of stones, eight feet wide and built ten feet to the base of the rock. The overhang was used apparently for the ceiling of the rooms, remains of plaster being still visible upon it. The wall parallel to the rock is very solid, it is $4\frac{1}{2}$ feet wide at its base which is three feet below the terrace level and three feet wide on the top of the highest piece yet standing. Between this small group of rooms at the East end and a larger group at the West end of the rock is a space of 40 feet which shows no evidence of a connecting wall even at a depth of seven feet. The rock in this particular area shows the least overhang, less than three feet. The wall at the West end is visible for a length of 60 feet, at which point it seems to have been crushed by the rock-fall immediately to the West of Threatening Rock. It could not be determined at this time if and how far this wall continues underneath the fallen mass. With the aid of trenches the base of the wall was located three feet below the terrace level. At certain points the base of the wall was set in pure sand, at other points the entire base had been constructed in a block of clay, protruding one foot from the base of the wall and extending downward three feet. The base of the West wall was found to be $5\frac{1}{2}$ feet wide while the top of the present highest fragment is three feet wide and comes to within four feet of the overhang. The height of the wall at its highest point is fourteen feet from its foundation. This wall as well as the East wall are constructed out of rather large and often irregular pieces of sandstone, separated by smaller stones. The masonry is not banded as is the front veneer. The part of the wall facing Threatening Rock is nearly perpendicular, the outside surface is slanting, thus forming a wedge shaped buttress. If the two upper parts of this wall are continued upward it is found that the overhang must have rested at one time on a stone wall 22 feet thick. This, however, did not constitute the entire support given the overhang. Where the wall has fallen away several circular pits are seen in the interior masonry, containing a log each. These vertical logs, of which nine can still be seen, are approximately eight to ten inches in diameter. They have been removed, cut or burned in the past so that at present only those parts surrounded by masonry are still standing. Originally these logs might have extended to the edge of the overhang. Only one log is at present found in a similar condition. Their function must have been to shore up the overhang.

It would be of interest to know if the Threatening Rock is moving from year to year. As no measurements or opinions were available it was decided to establish points on top of the rock and the cliff between which

it will do the least damage because it is furthest removed from the greater leaning forward and the continuous vertical crack. When this corner quakes. The East corner block might be the first place to go, due to its unlikely that the entire block would fall as one unit, barring earth-quake. It is to remove the rock debris between the canyon wall and the rock. It would be an expensive and difficult undertaking. The cheapest method would be to remove the rock debris between the canyon wall and the rock. It can anything be done to insure the stability of such a weight? It rock was computed, amounting to approximately 25,000 tons. From these figures the total weight of the order to check this figure several samples of sandstone were taken and their weight and volume determined. Mr. Judd gives 100,000 tons of weight to the Threatening Rock. In

undertakings are to us. far from "pure" but to them as magnificent as some of our present day engineering. establish the conviction that after all, the efforts of the Bonitians were upon their dwellings." The evidence presented in this survey hopes to as- and stones to hold back 100,000 tons of solid rock that threatened to topple (the Bonitians) even had the presumption to erect a puny brace of sticks Sept. 1925 vol. National Geographic Magazine) states on page 260: "They for additional support. Mr. N. M. Judd (Everyday Life in Pueblo Bonito, secondary function of the wall on the terrace we might assume that it was used solid buttress to prevent or retard a downward sinking of the rock. As a the influence of rain, wind and sand. The embankment in addition formed a building a wall at the points of greatest erosion, shutting them off from assume that the same effect -- prevention of erosion -- could be obtained by at present in order to reach the top of the overhang. It seems logical to cut of the rock. This embankment would have to be twice as high as it is cliff, the embankment would prevent weathering and enlargement of the under- support. The wall by itself could not support the entire weight of the hang, etc. point to the conclusion that its main function must have been for i.e. solid, buttress-like, reinforced with vertical logs, underneath an over- rooms under the rock overhang. The way in which the wall was constructed, and buttress-like wall for the sake of obtaining a dozen small, inaccessible the Bonitians would go through all the trouble of putting up an embankment answered. What was the function of the wall? It seems inconceivable that the function of these rooms? That question must at present remain un- places, etc. and very few potsherds were found in these rooms. What was been built by Newjos. No evidence of doorways, ventilating holes, fire- recently. The cross walls were of very poor construction and might have They showed evidence of having been used for sheep corrals or shelters quite Due to lack of time no thorough investigation could be made of these rooms. Some floors of these rooms are constructed of adobe, others of stone. partment measures nine by five feet, the smallest, three by four feet. The largest com- 29 inches wide) into 9 (or 10) rooms or compartments. The largest com- space between the wall and the rock is divided by cross walls (from 16 to The width of the overhang varies from nine to four feet and the

measurements could be taken at intervals, in order to show any motion of the rock. To this purpose twelve holes were made, each filled with cement with a copper pin in the center of each. These twelve holes were located as follows: numbers 1, 2, 3, 4, and 5 on top of Threatening Rock spaced approximately 25 feet apart. Numbers 6, 8, 9, 10, and 11 in roughly corresponding positions on top of the mesa and numbers 7 and 12 further back on the mesa. The distances between these points were carefully measured and re-checked with a steel tape. The distances are tabulated as follows:

From point 1 to point 6 :	16 feet 8 5/8 inches.
From point 1 to point 7 :	39 " 10 1/2 inches.
" " 1 " " 8 :	23 " 8 1/2 inches.
" " 2 " " 6 :	25 " 10 "
" " 2 " " 7 :	35 " 8 1/8 "
" " 2 " " 8 :	9 " 5 3/8 "
" " 6 " " 7 :	25 " 8 "
" " 7 " " 8 :	26 " 7 "
" " 1 " " 2 :	20 " 5 "
" " 1 " " 12 :	64 " 11 1/2 "
" " 2 " " 12 :	46 " 7/8 "
" " 6 " " 12 :	62 " 2 1/4 "
" " 8 " " 12 :	42 " 4 5/8 "
" " 3 " " 9 :	15 " 9 7/8 "
" " 4 " " 9 :	33 " 3 1/8 "
" " 5 " " 9 :	68 " 8 1/4 "
" " 3 " " 10 :	36 " 4 3/8 "
" " 4 " " 10 :	18 " 9 3/8 "
" " 5 " " 10 :	43 " 6 1/2 "
" " 4 " " 11 :	55 " 6 3/4 "
" " 5 " " 11 :	31 " 3/8 "
" " 1 " " 2 :	20 " 5 "
" " 4 " " 5 :	37 " 10 1/4 "

Recommendations for preservation and reconstruction.

1. The veneer in front of the embankment should be repaired to a height of five or six feet to prevent further deterioration. The top of this veneer should be protected against water seepage. It was thought at first that the same method might be applied here as the one used to cap the walls in Pueblo Bonito, i.e. with a layer of cement. On close inspection, however, this method seems far from satisfactory. Walls thus treated in Pueblo Bonito show many areas where water has seeped through in spite of the capping. The cement shows much cracking and water has penetrated through holes and cracks, causing the washing out of adobe, loosening of stones and streaking of walls. In treating the top of the veneer the following method might prove successful, viz. setting the entire top row of flat stones in cement. The cement should be applied thinly to replace as exactly as possible the removed adobe, giving the veneer a more natural appearance.

2. The stone embankment behind the veneer should also be repaired and gutters placed here and there to drain the water. The stones should be

replaced wherever possible and the ones present set more firmly in cement.

3. The terrace should be cleared of debris, levelled off and a drain constructed through the entire length in order to remove the water to the East end, preventing it from flowing over the rock.

4. The walls underneath the overhang should also be repaired as much as possible, using the stones that have fallen from the walls on the terrace or in the space between the walls and the rock. The top of the wall should be treated in the same manner as the top of the front veneer.

5. The area underneath the overhang should be cleared of the blown-in sand, exposing the floor levels of the rooms. The cross walls should also be repaired.

6. Finally, what can be done about the Threatening Rock? The inevitable question is: when will it fall? This, of course, cannot be answered directly. The Rock may remain standing for a thousand years, except in the case of an earthquake. It will be interesting to note if yearly measurements between the hubs placed on top will show any appreciable movement of the block, be it downwards, forward or sideways. If these shifts should prove to be considerable, measures would have to be taken to prevent the block from falling and damaging the ruins by crushing or jarring. In that case the rock would have to be anchored by strong cables to the rock of the canyon wall. If, however, the measurements should show hardly any movement, it would not be necessary to incur the great expense involved in the above procedure. At any rate it would be an excellent undertaking to remove most of the fallen rocks between the rock and the canyon wall, or to cover them with cement to prevent water seepage and the resulting expansion pressure during freezing weather. The writer urges that this primitive engineering should be repaired and preserved for the enlightenment of future visitors as soon as possible.

In conclusion the writer wishes to express his sincere thanks and appreciation to Mr. Hurst E. Julian, Custodian of the Chaco Canyon National Monument, without whose help, encouragement and suggestions this survey would have been impossible. He is also greatly indebted to the members of the staff of the School of American Research, especially to Dr. Edgar L. Hewett, Mr. Paul Valter and Mr. Paul Reiter, for their criticisms of the work, suggestions and interpretations. Last, but not least, the efforts of Mrs. Dorothy L. Kour have been stimulating and helpful.

List of artifacts found during excavations.

Shards of pottery. (corrugated, indented, Chaco black on white.)
One sandal of, woven yucca fibre.
Several corn cobs and corn kernels.
Many small pieces of rope including one bound with feather shafts.
A small piece of woven material.
One piece of leather-like material.
A flat stone showing signs of a swastika design.
One large squash stem.
Several pieces of cedar wood.

I want to take the opportunity here, Chief, to thank Dr. Kour for his excellent report which contains so much good meat to us. I intend to sit the Engineers on that job with his report in their hand and see what conclusions they will come to on his recommendations. Then we will ask Mr. Julian to include an item in his Six Year Program to cover any necessary work. I think Dr. Kour plans to be back in the Canyon next season and I will be very glad to recommend or permit if he wishes to go on with his work.

I have asked Mrs. Dorothy L. Kour, who did the work in the U2 Cliff Cavity, which was reported in last month's Supplement, to give us a report from the "burrows" against the 'statistical' standpoint. This differentiation does not belittle the former report which was necessary and which gives the archaeological student the condensed information of just what she found and how she found it; but the human side of these things has always interested me more and I am sure that is true with most of the readers of this report. I still have a vivid impression of the afternoon she and I sat on the floor of the office at Chaco and talked while she sorted the results of the week's dig and tabulated the dry facts about them.

THE EXCAVATION OF A CLIFF CAVITY.

Chaco Canyon, New Mexico.

By Dorothy L. Kour.

In walking along the base of the cliff marking the north side of Chaco Canyon, from that ancient apartment house now called Kin Kletso to the town beautiful, Pueblo Bonito, one is amazed by the many signs of former life and activity. Hardly a square yard of the face of the cliff which does not bear some evidence of the hand of man. There are rows of small viga holes where once rested the cross poles supporting some roof; there are broad black bands extending up the face of the cliff wall, where once fires blazed and left the tall tale smoke. There are talus slopes made up of debris containing countless squared building stones and potsherds; sometimes part of a wall still stands. Here, then, man lived, close to the sheltering rock. Many lines and grooves indicate that stone axes and other stone tools were kept well ground and sharpened. The petroglyphs are legion, some showing no man's skill in execution; all difficult in ~~the~~ interpretation; but indicating a rich symbolism. There are many natural features of interest, also, as crevices, cavities, great blocks of sandstone sheared off from the main body of the cliff wall, assuming threatening or grotesque shapes.

A stone's throw east of Kin Kletso, at the top of the talus, and at the base of the cliff, occurs a natural cavity, lying almost parallel to the face of the cliff, formed by an out-jutting slab of rock. It is fully eight feet long.

Here was an excellent place for an ancient inhabitant of the Chaco to store away some of his worldly goods. Alas for the foolish one with his 'barn' well stocked with supplies for his future. Time has passed; the ancient world of Chaco has been abandoned for centuries; he who cached his worldly goods here is no more. Packrats have long since discovered

this hiding place. But it is highly probable that no fellow human being probed within, until Mr. Hurst Julian's curiosity and keen sight led him to it. As his humble assistant, I enjoyed the privilege of a large part of the excavating.

By lying flat on one's stomach, inserting a hoe, and slowly dragging out whatever material the hoe happened to catch, the inquisitive excavator brought to light what had been the worldly goods of a past life. The work was somewhat arduous, but never tedious, for this combination 'closet-and-pantry' had been well stocked. Despite the fine dust, drift, and copious pack rat manure, hardly a single hoofful came forth without some bit of desiccated food, or fragment of artifact. In a country where now only cactus, sage, and chico abound, once agriculture of a high order must have flourished, for in this one cavity alone, almost 2,000 corn cobs were found; a few corn kernels, 200 pieces of squash and gourd rind, a few red beans; several small wads of raw cotton, and one small cotton ball. Other plant products were stored away here too, such as pine-nuts, arrowwoods, yucca seeds, and thousands of stripped yucca leaves. All of these were no doubt gathered by human hands for some purpose never fulfilled.

Of artifacts, too, there were many. Braided and twisted cord was found in abundance; somepieces as long as ten or twelve inches; much of it was knotted; some was bound with feathers. How many uses such cord may have had to an ancient inhabitant of Chaco, one can only surmise. Perhaps the owner of this 'closet' liked to collect cord, even as some scrupulously economic souls today. Of course it is always possible, too, that a great deal of this material was carried to its hiding place through the agency of pack rats. A prosaic interpretation, indeed, but the enthusiastic excavator must strive hard to keep sentimentality in check, in an attempt to be scientifically truthful.

Part of a fire stick was found, indicating the ancient way of striking a light. There were two fragments of arrow shafts, both notched, one bound with sinew, the other painted red; weapons which we have replaced with rifles. Many fragments of basketry and minute pieces of cotton cloth gave evidence of skill not surpassed by handiwork today. Such craftsmanship never failed to amaze the excavator, who has neither patience nor skill to produce anything comparable. There were also more than a dozen pieces of leather and leather thongs; and various potsherds, obviously belonging to different pots.

Most thrilling of all was the discovery of $1\frac{1}{2}$ pair of sandals. Hunt as we could, the fourth sandal was not found. The complete pair was plaited of broad strips of yucca leaves. The odd one was of very fine yucca fibre, beautifully woven, with a design on the under side. Centuries ago, feet protected by these sandals trod the very ground we were standing on; feet of fellow human beings who loved, hated, and feared, even as we today.

Another discovery brought us closest of all to the biological side of this past life. Among many bones of assorted varieties and sizes, belonging mostly to small rodents, there were two which were indubitably human. They were portions of the parietal bones of the cranium. Here in our trembling fingers we held the small pieces of badly weathered bones, the only remains of some mortal body, truly as frail as dust.

But the spirit of man lives on. In this day of marvels, we must still marvel at the daring of him who took fire and curbed its mighty force,

and turned it to his use. In this same cavity, so rich in indications of human life, evidence of fire was also found. The inner walls and ceiling were blackened with smoke. Sixteen inches below the mouth of the cavity was a layer of ash four to six inches deep, containing much burned and charred material. There were many reeds set in the earth, firmly embedded at either end, at the level of the ash. These might have been ceremonial in function.

He who utilized this cavity had apparently taken care to seal up a long crevice which occurred directly above. The crevice is approximately twenty feet long and extends directly upward for about six feet, then veers in an eastward direction ~~for~~ at an angle of 60 degrees. The sealing of adobe and the stones held in place by it were removed. The crevice was two feet deep in parts. No material was discovered here; but it is possible that the crevice was sealed to prevent the rain from running down into the cavity proper.

The story of this cliff cavity bears testimony to the life of an early American; to his courage, daring, and inventive genius. Hence it is of interest to us, who are of the same human essence; and who strive in much the same ways, to solve the problem of life.

Don't you think that is an interesting write-up, Chief?

After we went to press last month, I found I had forgotten to speak of the cover on that report. It was due to a sort of jam we got ourselves into over the month-end when the work piles up and we get short-handed. I wish we had some sort of a folding clerk or stenographer who could help us out over that rush period and then let us fold him up and put him up on one of the back shelves until the next month.

Well, that cover, which is our last one from poor Ed. Rogers, was of The Mittens up in Monument Valley, and if you will take another look at it I won't have to tell you why it is so named. It is only one of the many formations which you can see in a day's drive with Harry Goulding who has picked one of the best cooks outside the Park Service and talked her into settling down up there with him where you can sit on their front porch and look into a fresh world that man has not yet spoiled and see sun-sets that the Great Architect seems to build just for his own pleasure. It is one of the three biggest churches I know of, - - Tillie and Tom Boles being the janitors of the other two. Some day that country is going to be in a national park and if we don't watch out it will be cluttered up with a lot of so-called improvements like good roads and million dollar hotels and so on. Chief, don't let them do it. Busy as you are, the best investment you could make of a couple of weeks of your very crowded summer next year would be to go out there with the Wetherills and the Gouldings and the Wilsons. That country isn't just restful for the body; some way it sort of cleans out a man's soul. You will only understand what I mean after you go out into it. Pint size humans don't stand it very well and have to get together after supper and play cards or do some of the other every day stunts, but I'm paying you the compliment of believing you will like it and can sit down and soak it all in and not have to run from it or cluster up with a lot of human bugs to keep it from over-powering you.

Say, Chief, Tom Vint has gone and pulled another publicity stunt for the Landscapers. You remember about four years ago when he went down into one of the farthest reaches of the Carlsbad Caverns and broke a hind leg and had to be packed out? At the same time he pretty near broke Tom Boles' heart because it was such good publicity yet Boles couldn't use it for fear it would flare back on his Cavern and scare people into believing the trip through there was dangerous; so he had to keep pretty quiet about it.

Well, this time the Chief Bopad pulled one in Bandelier National Monument and we are keeping quiet about it just like we would about a raise in our salary.

He fell out of a tree!

Now that it is all over and Tom is back to normal, we don't mind snickering a little about it, but he had us scared that night. Fortunately he fell on his shoulders and head, which seems to be a pretty safe landing gear for Landscapers.

He does pick out the funniest places for these publicity stunts. There he was at the bottom of Frijoles Canyon, so battered and sore that everybody thought he had broken his differential or something, and he rode up the 900 foot tram way to get out of the Canyon. There wasn't any charge about that elevator, but when he got to town, the elevator pretty nearly ruined him because in the La Fonda the elevator goes up among the highest priced rooms in the hotel and Tom was so sore by that time he couldn't walk around to the Scotch rooms and had to take a seven dollar and a half one next to the elevator.

I forgot to say it was a pinon tree and he was up there with the other nuts.

Bob Rose wrote Dr. Forbes, Director of the Arizona Agricultural Experiment Station, in part as follows: "Information you might have as to how the ancients determined the grade of their canals would be greatly appreciated. We have surmised that little pilot ditches were run in advance of the digging operations, and in this way the most satisfactory course was determined. However, about a week ago a young engineer mentioned the possibility of an instrument having been used consisting of a hollowed out trunk of a cactus to hold water, and a device mounted on this trunk to determine grade. The principle, according to him, hinged upon the fact that level of water in the log section was the reference level. The long stick device running the length of the log could be set at any desired angle with reference to water level. This young engineer was unable to give me any reference to such a device in literature; he could only tell me that a certain young fellow of his acquaintance had found a few scraps of wood which he took to be the pieces of such an instrument."

In reply, Dr. Forbes had the following to say: "I think the possibility of an instrument for water levelling such as you describe is most unlikely. A good irrigator can stand in the middle of a quarter section of land and tell if one side of the tract is six inches higher than the other; and the Indians with no instrument to guide them, probably could do as well in determining direction for a canal. The ancient canals in Salt River Valley were laid out on a flatter grade than the modern ones, - quite practicable by following pilot canals or observing the run-off of storm waters. I am not

"I am not aware of any device in use by our Indians of this degree of ingenuity; moreover there are old ditches in localities far from giant cactus territory, and hollowed out logs would be still less likely.

"The modern Papagos take out their storm water ditches on judgment only, and judgment, plus trial and error seems to me most likely for the ancients."

All of which reminds us of a talk we once had with a Governor of the Territory of Arizona in which he told me of the use of what he called a 'belly level' in running some of the early ditches around Florence. You just filled a tub full of water and floated a board on the water and nailed a good sized nail in each end of the board, leaving the heads projecting above the board to form the angle you wished to run. The 'surveyor' laid down on his 'tummy' and, sighting over the nail heads, showed the rod man where the line would have to go. The Governor said he had run very good ditches with such an instrument, though at the time I was talking to him he had such a portly figure that I thought it would take a pretty tall tub to fit him.

It is a very widely held theory in the Southwest and has been so for many centuries, that when a potter creates the breakable, perishable body of a bowl, she at the same time creates the imperishable spirit of a bowl which can never die but which will be released and go into the spiritual world when the body of the bowl is broken.

I am minded to speak of this because when we were running from Santa Fe over to Aztec a week or so ago, we stopped at a little wide place in the road called San Ysidro and Hugh bought himself a nice Zia bowl. It had some rain cloud symbols and some birds on it and was pretty nice and he was tickled about it and wrapped it up in a couple of blankets and took a great deal of care of it the rest of the five or six hundred miles home.

Then when we arrived at the parking ground in the residential area at home, Frank, out of the kindness of his heart, helped unload the car and pulling an armload of blankets out, dropped the Zia bowl on the pavement and its spirit departed promptly into the other world. I think Hugh talked it all over with his gods but the net result was that he had a couple of handfuls of broken pottery and the value of his bowl was considerably reduced.

Here's one we picked out of the air as we went to press last month:

FRANK FINKLEY,

COULIDGE, ARIZONA.

HAVE HAD BRASS NATS VINT, GABLE, HARRISON AND LANGLEY ALSO TILLOTSON OVER THE WEEK END CONSEQUENTLY WILL BE A DAY OR SO LATE GETTING OUT MONTHLY REPORT. HOPE YOU CAN WAIT AND INCLUDE IT IN YOURS.

SMITH.

Needless to say we held the press, so to speak, and the report came through promptly. Hereafter if they gang up on you like that, White Mountain, I suggest you let them climb your petrified trees while you get out the report. We just put this in because we told Charles we were going to and he didn't think we could.

I am sure all hands and the cook will be glad to hear that Winnie Julian has recovered from her operation where we left her in the hospital last month and is back at home in the Chaco Canyon feeling fine.

Here is one we picked out of the mail bag which shows how Leonard Heaton is going after the educational side of his work.

"Dear Mrs. Udall:

"I am writing you for some information regarding the first telegraph office here at Pipe Springs National Monument as you were the first telegraph operator in Arizona and at this Monument. I wish you would answer the following questions if you can remember the conditions.

"First, I want to thank you for the picture and autograph sent me by your daughter, Pearl Nelson, and also the reason that I am asking for this information. I want to put back into the fort the telegraph instruments and fixtures in the office as they were when you were here and make everything look as near like then as possible.

"First, I would like to know just what part of the building the office was in? I have always understood that it was in the west end of the lower building on the second floor.

"Next, I would like a description of the desk and fixtures used in the office and where they were located.

"I would like to know how long you were here and how much business was carried on over the line, also of any outstanding messages that might have been sent in connection with Indian troubles or the like.

"Probably you will remember the two signs that were placed on the east side of the fort advertising the telegraph office and the wording that was on them. If so will you send that along with the rest of the information to be used in the restoration of the fort.

"I am asking this on behalf of the Office of National Parks, Buildings and Reservations."

That is an effective and affecting tale Tom Charles tells about the poor little kid having to give up his sand, isn't it, Chief? He had Bob Rose and Hugh Miller most crying the first time they read it.

Looks like we ought to get some reason for the redness of those lakes. Maybe they are blushing with pride because the Great Architect has located them so close to Alamogordo and one of the liveliest Chambers of Commerce in the whole Southwest.

We are glad to know that Tom seems to know George Boundey. Some way that seems to bolster up our faith and if we can get a couple of the boys here in the office to go in with us we may be able to absorb some of those weather reports; I'm willing to believe a third of them.

Strange that both Tom and George should have reformed and joined the Park Service and are now living better lives.

Well, I guess this cleans up the desk, though the chances are that this won't get into the mail until we remember something we forgot to remember to put in before we stopped. Anyway, we had some fun getting this out.

The Boss.

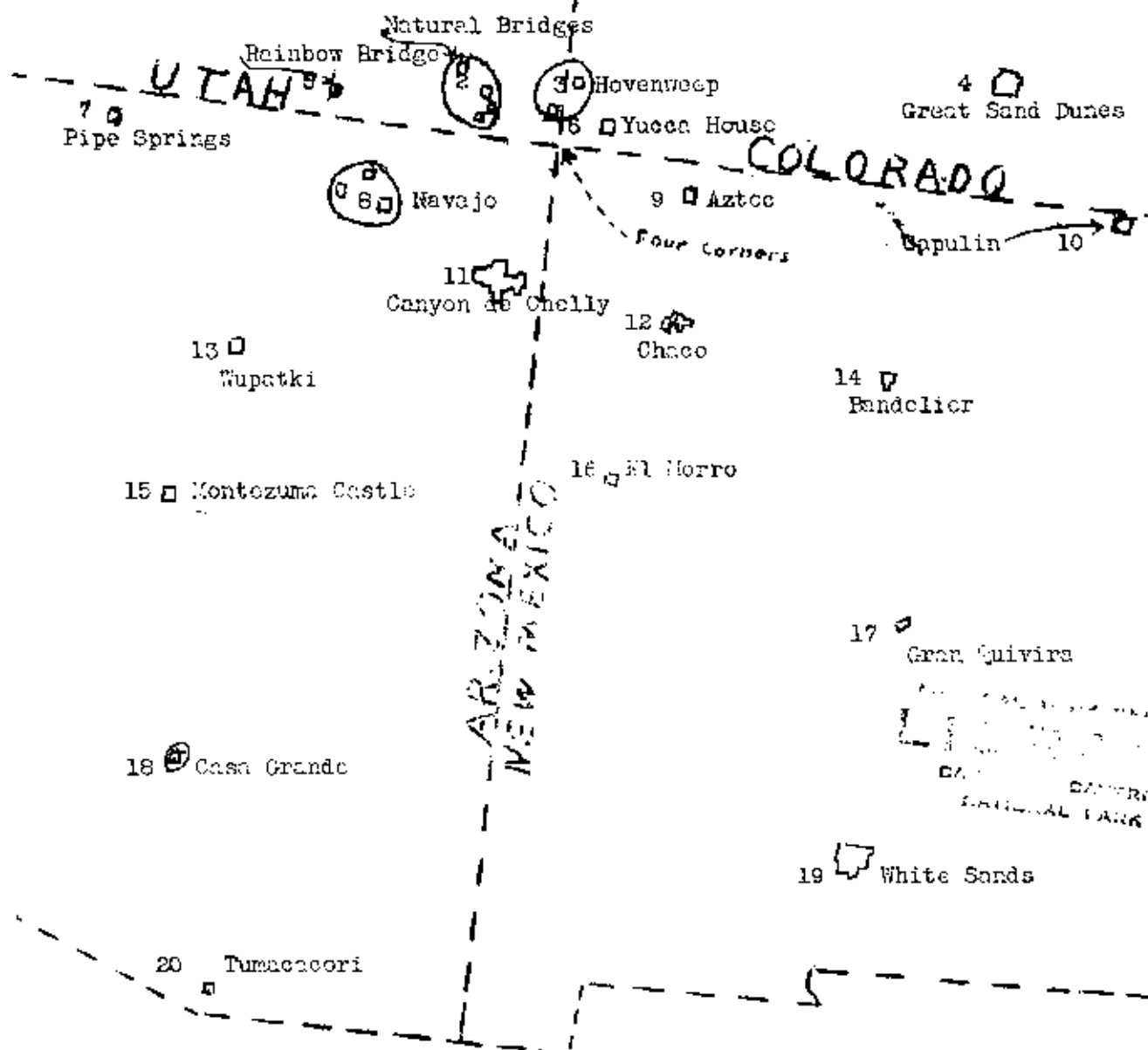
UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

SOUTHWESTERN MONUMENTS

AREA

L O
Arches

520.24 59 MI.



The

Southwestern Monuments

Monthly Report

for

November, 1933

Contents

Bob Rose -----	1-2
Aztec -----	3
Bendolier -----	4
Casa Grande -----	5-6
Chaco Canyon -----	7
El Morro -----	8
Gran Quivira -----	9
Montezuma Castle -----	10
Pipe Spring -----	10
Tumacacori -----	11
White Sands -----	12
Walt Attwell -----	13-15
In General -----	15

THE SUPPLEMENT.

Pipe Springs History -----	A-B
Drainage Problems at the Ruins -----	C-E
Arboretum at White Sands -----	F
The Deer of the Bass -----	P-R

NATIONAL PARK SERVICE
LIBRARY
 BAY AREA OFFICE
 NATIONAL PARK

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF NATIONAL PARKS
BUILDINGS AND RESERVATIONS
SOUTHWESTERN MONUMENTS

Coolidge Arizona, Dec. 1, 1933.

The Director,
Office of National Parks,
Buildings and Reservations,
Washington, D. C.
Dear Mr. Director:

A busy month of November now becomes recorded history through the various reports that follow. Climatic conditions were quite mild until the latter part of the month when a snow storm north of the Mojallon rim and cold rains to the south brought the ideal fall to a close. Figures on travel for the northern monuments will read low until Spring. However, the pushing of the Civil Works Program, recently approved, will give plenty of problems of a different nature to look after.

Getting the recent work under way has been the main problem at Aztec, Bandelier, Huac, and the next few days will find plans completely made for the Civil Works projects. It's a pleasure to see how the personnel is cautiously but speedily taking right hold of these new problems. There's nothing quite as pleasant as seeing all pull together properly for all the while.

Report of Asst. Sup't. Rose.

Upon the request of Architect Langley I drove to Flagstaff on November 28 meeting him there to talk over matters pertaining to study of the future development of Wupatki National Monument.

On Tuesday evening, the 28th we met Dr. Colton, Director and Mr. Hargrave, Associate Director of the Museum of Northern Arizona. We planned a trip out to Wupatki the next day. We visited Wupatki, Citadel and Wupatki ruins, the latter being off the Monument. It was our feeling that the matter of including all detached areas of the Monument into one single area by addition should be considered carefully. Having detached areas makes for certain difficulties of administration and development which would be greatly simplified by having the whole area in one unit.

While up there on this field trip word was received at Headquarters that Civil Works projects were approved. The Boss and

Chief Clerk Miller attempted to get in touch with me by wire at Flagstaff before our trip to Wupatki but were not successful. A heavy snowstorm was lashing northern Arizona disrupting practically all communication for 20 to 30 hours. However, we did go into the proposed C.W. A. work in a general way and from carefully prepared maps of Wupatki already made by the Museum of Northern Arizona and Colton and Hargrave's intimate knowledge of the work to be done, approved plans will be quickly forthcoming.

Leaving Wupatki, we drove to Flagstaff where Dr. Colton and Mr. Hargrave left us. Langley headed immediately for Grand Canyon and after about an hour I started from Flagstaff arriving at Williams for the night. The snow was banked along the road while in places the snowplow had not yet cut through. There were several delays of traffic for 15 minutes to an hour between Flagstaff and Williams.

Leaving Williams the following morning I drove to Grand Canyon. There I talked with Supt. Tillotson briefly on CCC matters and had an enjoyable hour with Ranger Naturalist Shellbach who is working on a revision of the Wayside Museum of Archeology exhibits plan. Temperature was about freezing and there were a few inches of snow on the ground. Mr. Shellbach gave the talk on the Story of Grand Canyon in the lecture room of Yavapi Station.

During the month more than 200 copies of a circular entitled "Protect the Ruins" were prepared for the CCC Camp in Bandelier. I might say that upon Acting Custodian Evenstad's request the matter of rules and regulations against vandalism was taken up with the men by the Camp Commander upon the arrival of the men in the Canyon. Shortly after that the Circulars I prepared were distributed to each man. Mr. Evenstad reports that vandalism will be far less than that which would be caused by an equal number of tourists. We're aware of new problems in ruins protection arising out of the location of camps of workmen in our monuments and in every instance the men are being informed clearly on the regulations.

At odd times cataloguing the Museum collection at Casa Grande has progressed. This is being done on standard catalogue cards approved by the Washington office. This should be done for Aztec Ruins National Monument before the present collection is disturbed or the new Museum building is completed. Mr. Faris realizes the importance of this and I hope in the near future to get up there to introduce the standard system.

AZTEC RUINS NATIONAL MONUMENT: Johnwill Faris, Custodian, Aztec, New Mex.

Visitors for the month total 361. This is a slight increase over the same month last year, which can probably be accounted for by the late fall and the open passes. At no time since my arrival at Aztec has the number of visitors indicated less just how busy we have been. Cooperation of your office and of the Landscape and Engineering departments has been invaluable to us.

All work under our Public Works allotment is moving along even better than we had anticipated. With Oscar Tatman as my right hand man on the grounds we are making every effort to keep the work moving, and at the same time meet the seemingly hundreds of requests for reports.

It has been our good fortune to have with us Engineer Hamilton on several occasions during the past month. Mr. ~~Rickey~~ accompanied by Lyle Bennett also dropped in on us for a few minutes.

No doubt your office has received word that Earl and Ann Morris have a new baby girl who arrived November 9th. We are saving a portion of our Ruin that these girls might observe first hand proper methods of excavating and archeological research with their Daddy as instructor.

With every good wish to the entire force and our sympathies to Hugh Miller".

(In the Southwestern Monuments office we don't know whether Johnwill is sympathizing with Hugh because of additional burdens connected with the recent works projects, or if Johnwill is under the impression that Hugh has recently gotten married. as to the latter, Johnwill must save his sympathies until later).

BANDELIER NATIONAL MONUMENT: M. O. Evenstad, Acting Custodian,
Box 1321, Santa Fe, New Mexico.

Visitors for the month total 155. This is partly actual count and partly estimate for the days I have been away from the monument on ECW business. A rather heavy snow fell on the night of the 4th and continued on throughout the 5th. The total fall was about 12 inches. The weather warmed up in a few days, and most of the snow thawed in about three days. There are still traces of it on the north sides of the mountains. Except for the snow, the weather has been very fine. The thermometer has, of course, been below the freezing point every night of the month, with one or two exceptions, but on the whole we have not had any real cold weather. Our main activities for the month has been in connection with the ECW work and the establishing

of the CCC camp, further details of which are shown below.

ECW Activities: The Army temporarily suspended construction on the camp buildings on the 1st, due to depleted funds, and actual work did not start again until the 9th. At this time, most of the work has been completed, only the bureau personnel quarters being still incomplete. Some of the inside work is yet to be done. Officers quarters were made ready for occupancy yesterday, and officers moved in with their families then. They were quartered in the hotel's cabins up to this time. The heavy snow on the 4th and 5th caused the collapse of several of the tent quarters in the Los Alamos camp, and on the evening of the 5th, the CCC boys commenced moving into our more or less unfinished barracks. By the 7th, the move had been completed as far as the personnel was concerned, but supplies continued coming in for several more days, before the move was actually complete. This sudden change in plans caused many inconveniences, but everyone seemed to make allowances for the emergency conditions, and the camp was soon comfortably established even though the barracks were not ready for occupancy.

A separate camp was made for the supervisory personnel near the parking area on the canyon rim. This camp will be continued until the truck trail into the canyon is completed, which will be soon after the beginning of the new year if weather conditions permit. The first mile has been cleared for the grading crew, and some work has been done on the second mile, including some blasting of rock through a cut. A warehouse for the miscellaneous tools and supplies has been built on the canyon rim, and the combination blacksmith and machinshop is practically complete. A small powder house has been built at some distance from the other buildings. The shelter shed for the trucks and other equipment has been started, and should be done in less than ten days. This will practically complete the construction of the buildings for the ECW work.

Two cabins have been rented from the public utility operator for office and drafting rooms. A clerk from the CCC camp has been employed in the office as clerk, and I have good hopes that he will prove a competent man. Nine foremen have been appointed for the supervisory personnel, most of them men from the former Forest Service camp. These men are housed in tents, with wood floors, on the canyon rim, and are operating their own mess. Mr. Lyle Barnett, from the Landscape Department, reported for duty on the 18th. Mr. Charles Richey, also of the Landscape Department, spent three days here on official business.

The Acting Custodian has made a number of trips during the month, practically all of them on business in connection with his duties as procurement officer for the ECW work. Mr. Walter G. Abell, who is the engineer in charge of the construction, also made many trips in connection with his

end of the work. Sufficient equipment has been secured by transfer from other parks for our use on the construction. Some miscellaneous tools have been purchased, but most of our tools have been transferred from the Forest Service. We have had very fine co-operation from the various Governmental departments we have dealt with.

With the exception of the materials needed for the truck trail construction, all materials connected with the ECW work has been brought into the canyon on the tramway owned by Mr. Frey. Mr. Frey has given me some interesting statistics on the transportation of these supplies, which follows:

An approximate estimate shows that about 1,500,000 pounds of supplies and materials, or 750 tons, have been transported, or 3,000 trips of the tramway made with an average of 500 pounds per trip. This includes 218,000 board feet of lumber, 42,000 feet of cellox, 10,000 pounds of nails. The best record was 187,000 pounds in 3 days, while the camp was being moved. In 55 minutes, 3,800 board feet of lumber was transported. The tramway is 900 feet long, the drop is about 500 feet, the size of the cable is 5/8 inch. Two trucks were sent down after being dismantled and have been used for hauling the materials from the foot of the tramway to the camp. Mr. Frey reports that no damage was done to any of the supplies and there were no injuries sustained by any of the employees. This tramway will continue to be used for ECW purposes until the truck trail is completed. We believe that ours is the only CCC camp using this method of transportation.

CASA GRANDE NATIONAL MONUMENT: Hilding F. Palmer, Custodian, Coolidge, Ariz.

I have made so many reports during the month of November in connection with Public Works, that I am late with my monthly report to you.

Much has been accomplished at Casa Grande during November and although we show a decrease in visitors over the same month last year it can be blamed solely on the weather for two or three bad days at the end of the month cut down our attendance which up to that time had been slightly over that of last year. 2025 visitors were given individual attention on 238 tours of Compound A and 227 museum lectures. These 2,025 visitors came in 593 cars from 40 states, Washington, D.C., Hawaii and 6 foreign countries; slightly over 60%, or 1,222 of these visitors came from Arizona; 15%, or 303 came from California, Texas being third with 68 and Illinois fourth with 51. In addition to these 2,025 who were personally contacted by the personnel and given guided service through the ruins and museum, there were 269 who entered the Monument and used some of its facilities, but did not take advantage of the Educational services, making a total visiting list of 2,294.

We are, of course, going into our busy season as far as visitors are concerned, and our visitors are improving in quality every day and require

Travel has been fairly good this month, approximately six hundred visitors although the road has been almost impassable. A great many are taking the trail to the top. We hope to be able to place the proposed trail and the road in first class condition with the Emergency CDP aid.

Weather, the most beautiful and warmest I've ever seen in this country has been seen in twenty-five years. We have not had a cloudy day this month.

I have the following report to make concerning Capitol Mountain National Monument for the month of November, 1933.

CAPITOL MOUNTAIN NATIONAL MONUMENT, Hager J. Farr, Custodian, Capitol, N.M.

The month has been a very satisfactory one. Everyone has been busy and all work is caught up and we are ready to go on the new CDP as such as we get definite instructions.

Our other project, the construction of a new quarters, is not started yet. This project will be contracted and working drawings are not yet available.

The repair of two quarters is proceeding slowly. Painters are now at work. This Public Works Program has given work to fourteen men during the month. A monthly payroll was \$1,025.40.

The water extensions project is completed. All lines have been enlarged to 3-1/2 inch; five lines have been run to each building in such a way that any part of the building can be reached with 50 feet of hose; the storage capacity of water was doubled by replacing 2 - 500 gallon steel tanks with 2 - 1000 gallon steel tanks.

No more work was done on the Camp Ground project during November. The project is practically completed with the exception of the building of a swing set, two and a feeder for the children. This will be done during December.

The Public Works Program is going along nicely. Work was concentrated on the walls around the Administration Building and as a result they are ready for the plasterers who will start Monday morning. These walls have permitted the removal of temporary guard rails, wooden fences, etc., and the Administration Area now presents a very much improved appearance. They also prohibit people from going to the ruins of Compound A without coming to the Administration Building where they are met by a Ranger.

The weather was ideal up until the last two days of the month when for those two days we had 1-1/4 inches of rainfall with a consequent drop in the temperature. The average maximum temperature for the month was 80.2 degrees, the average minimum was 37.5 and the average was 58.85. The maximum temperature was 89 on the 16th and the minimum 28 on the 6th. Total precipitation was 1.29 inches. There were 25 clear, 2 partly cloudy and 3 cloudy days. One or two days before the rain were very disagreeable on account of bad dust storms.

more time of the educational personnel.

General trade conditions in this territory are very very bad, and it appears to the writer that the depression is at it's very worst in this community.

CHACO CANYON NATIONAL MONUMENT, Hurst R. Julian, Custodian, Crownpoint, N.M.

The month of November, 1933, gave us 421 visitors who registered from eleven states and the Republic of Mexico.

There seems to be a dearth of news for this report, nothing unusual has occurred, nothing spectacular has been accomplished, and there is little to report.

Quite a bit of my time has been spent in the office, working out plans for the development of the Chaco, such as the "Six Year Development Program", the various public works projects, and the matter of the Chaco road. Mr. V.W. Marquis, of the Bureau of Public Roads, has been here twice inspecting and reporting upon the road project, but as yet, no dirt has been turned.

Some time has been spent going after, and answering telegrams which concerned development projects. A telegram is just a telegram to most of the units of our organization, but a telegram to the Chaco often means two days off to town to answer it, at considerable expense. But, if they will do any good, I am in favor of them.

We have been giving the visitors "service plus" on several occasions during this month. A rather plentiful snow fall, which melted quickly, left the freshly graded and soft road in a terrible condition in spots. I spent several days patrolling the road and digging visitors out of mud holes. Shovels, jacks, chains, and tow cables were standard equipment for a while. I also carried ten extra gallons of gas and a quantity of water. Once I had to go after a new battery for a stranded motorist. The gratitude of a rescued traveller is touching. They all seemed to feel that the "Office of National Parks, Buildings and Reservations" was the most eleemosynary and altruistic branch of a benevolent government. In fact, I find them more interested in my tow chain than they are in my lectures on the ruins.

The Griffin Lodge being closed, a number of visitors found themselves without the necessary accommodations, these we tried to supply at the Custodian's residence. A number of very interesting people were met, and several gratifying contacts were made because of this condition.

The road to the north has been in fair shape during most of the month, it seldom gets very bad, although Mr. Vreeland, who comes with an introduction from Mr. Albright, could not get his trailer down the hill. Perhaps it would be more accurate to state that he felt that if he did get the trailer down the hill, he certainly would never get it up again. Unfortunately, I did not get to see the Vreelands, when they arrived I was out working on the southern approach road and when I came back to the Canyon, he had departed. However, it is perhaps the good fortune of Mr. Vreeland, as he received the expert attention of the H. C. W. P., in my absence.

The through traffic on the Graco road, from the San Juan Basin to U. S. 66, shows signs of a steady increase, perhaps the news that work was being done on the road lured some of the traffic this way.

EL MORRO NATIONAL MONUMENT, Evon Z. Vogt, Custodian, Rosah, New Mexico.

The month has rolled around. The most notable happening is the letter I have from Chief Engineer Kittridge notifying me of the Civil Works Program as relates to my Monument. 50 men who can live at home are to be employed. I am now trying to make a set-up so as to cover the most pressed cases within this region who can go to work right away.

Unfortunately, I have not received Circular No. 1 on the Civil Works set-up so I am in the dark as to how to proceed. If you have a copy of this circular please let me have one at once.

Snow is liable to fall at any time now, and thus delay what we plan to accomplish and perhaps even stop some of the work planned. I am counting, of course, on all the help you can give me in a technical way, and in an advisory way.

I have been chairman of the Relief Committee for Western Valmencia County for a number of years now, and have dealt out a lot of Red Cross flour, etc., have made a study of the cases and families and know pretty well how to pick the labor so the greatest good can be accomplished.

Today I am going to Santa Fe on some land business and while there, I will get lined up on road equipment in case we need it.

I am most anxious to carry out the program with the greatest of care and efficiency and yet to do nothing at my Monument or have any thing done which will in any way detract or spoil it. It is so lovely now, that anything that is touched there must be done only after careful thought and advice.

The weather is still wonderful, but we do not and never will forget that we are now in the anniversary of the terrible snows we had in this month in 1931. Sheep and cattle are doing fine, the steers are not moving on the market to any extent.

Some are gathering their steers, expecting buyers who have paid the suicidal price of 3¢, but there is no certainty of sale at any price.

Sheep men are through shipping lambs which brought 4 to 5¢ for the most part. Our lambs weighed 56 lbs. and 2,500 head of them brought \$3.05 per hundred weight. I delivered them on the cars at Grants on the 12th. All we billed to feeders near Greeley, Colorado.

The Indian lambs weighed out at Gallup were lighter than usual, and brought around 4 and 4-1/2¢ per lb. With the new Corridale and Romney rams which Mr. Collier, the Indian Commissioner, has had the Indians buy, I predict

a very much better lamb from the Indian sheep in a few years.

Farmers are getting 3¢ for beans and 1¢ a lb. for their corn so their prices are still down to a low price.

Travel has been light, but we have had a number of distinguished parties. One of them includes Witter Bynner the poet and writer of Santa Fe, and Mr. D. C. Kidear of Yosemite National Park, whom I take to be a National Park Official.

The cement capping I put on the east cattle guard looks like a good cure despite the cold weather at night. The new east gate is also a great improvement, but I wish to trim the gate posts off so that they will be of uniform height.

Road engineers are still surveying, but no construction started. With snow imminent, we really do not expect much work on the road this season. The Public Works Program was well planned and intentioned, but it's wonderful benefits have not reached our part of Valencia County.

I have read your last report and the Park Service Bulletin with great interest.

By the way, the map of the United States of the Recreational and Park Areas in the nation are in great demand among the homesteaders, and even some of the schools, which have no allowance for maps, have asked for them so I am making good use of them.

GRAN QUIVIRA NATIONAL MONUMENT: W. H. Smith, Custodian, Gran Quivira, N.M.

For the month ending November 20, I have registered 370 visitors, entering the Monument in 90 cars. I am boasting of this showing an increase of about 159 over the same month last year. The number of tourists varying from but very few some days to as many as 108 on October 29. That was my busiest day. I made a number of museum talks and as many guided trips through the missions and the Indian pueblo.

October 30 and 31, and November 1, were spent to do the most good where badly needed. I spent these three days repairing the road of approach and the stock guard. The time was undoubtedly well spent too. As we got the road in comparatively good shape and a temporary stock guard installed. This put the road in shape to where one can get over it fairly easy and eliminates the gate troubles. Weather conditions for the past month were the best I ever saw in this region at this season. There has only been two snows this fall. One came November 2nd, and another light skiff on November 5th. Since then, the weather has been warm. Beautiful clear days. This weather has been fine for travel, which possibly is one reason for the increase in travel, but I don't like to think so. I want to think that our Monument is gradually coming into it's own.

It was with great sorrow that I learned of Ed Roger's death, in last month's report. My sympathy goes out to Mrs. Rogers at this time of sorrow. Although I was not personally acquainted with Mr. Rogers, I feel sure that we all will miss him.

MONTEZUMA CASTLE NATIONAL MONUMENT: M. L. Jackson, Custodian, Camp Verde, Ariz.

Report time has arrived and not a great deal of interest to report. November is usually a slow month at this monument--a between season period--the summer visitor has come and gone, and a little early for the winter visitor.

Have had 696 visitors from twenty-one states, Alaska and Canada. The weather has been ideal in our section of the country. Roads have been in good shape, but are getting a bit choppy or corrugated due to the long dry spell.

On the 24th of October, we received a wire that Hugh Curry, who has been a ranger here for the past fifteen months, had been dropped from the service through the 'Reorganization Act'. Hugh made a good ranger while here, and we wish him all kinds of success at whatever he turns his hands to.

You can see by the above paragraph that I have been swinging the job alone for the month, with the exception of two or three days during the latter part of the month, and am afraid that the same brand of service has not been given as heretofore.

With the Verde dam assured and with the several CCC camps near by, we predict a better year than the last two or three have been.

We have been notified of the possibility of our getting some men under the Civil Works program and naturally we are looking forward to their coming as there are a lot of things that need to be done here. I am expecting some engineer to wire me wanting to know "where to get off" as the engineers will no doubt come in and line up the work that is to be done.

PIPE SPRING NATIONAL MONUMENT: Leonard Weston, Acting Custodian, Moccasin, Ariz.

There is not much to report this month, as there has not been very much doing. Our weather has been ideal for fall, very little cold and frost at nights. The days are just right for working, neither hot or cold, so I have spent most of the time in moving the garage and other buildings that I had by the meadow, making irrigation ditches for the campground trees, and in the meadow so that it all could be watered with less waste.

Have had some work done on the house and grounds this month. I expect to set out about 75 trees Saturday in different parts of the monument.

I have reported in a letter of November 20th, of a visit of the Indian office men, Dr. Farrow and Mr. Noble, so will not recount it here.

I have tried to keep an accurate count of all cars, trucks, wagons, horseback riders, and live stock that have come through this monument since October 24th to November 23rd, they are as follows:

Arizona - trucks	101 passengers	52 trucks
" cars	168 "	63 cars
Utah trucks	34 "	17 trucks
" cars	43 "	22 cars
Calif. trucks	5 "	2 trucks
" cars	77 "	31 cars
N. Y. "	4 "	1 "
N.M. "	1 "	1 "
U.S.D.I. "	4 "	2 "
Horseback riders	148	
Wagons	17 "	13 wagons
Totals	602	205 vehicles

Of this number I have contacted 73 and gave them the usual visitors trip through the place. The rest, 529, have been local people going to and from town or to their places of business. I really did not think there was this much travel by this Monument, and am surprised at the amount of local travel in such hard times as we seem to have up here.

During the month 1,175 head of live stock have been driven through the Monument to pasture areas and to market.

TUMACACORI NATIONAL MONUMENT: Geo. L. Bounday, Custodian, Tubac, Arizona

Visitors for the month - 924.

Winter visitors are beginning to arrive in Tucson which accounts for the increase in number of visitors.

The trees are beginning to take on the fall colors and as the weather has been ideal, many of the summer birds are still with us.

Four different parties during the month came to look over mission timbers in search for termites. Two different species of insects are at work on the mesquite trees, but neither danger the life of the trees.

The Mexican Government doing away with many of the restrictions in entering Mexico has increased the number of visitors considerably, but many of the visitors seem to have difficulty in obtaining guides for the different points of interest. If the Mexican Government would print some descriptive matter for distribution from this monument, many more visitors could be sent into Mexico.

The heads of families in our vicinity are all anxiously waiting for work to start at Tumacacori. Twenty-five men employed here during the winter months will help this whole community wonderfully.

WHITE SANDS NATIONAL MONUMENT: Tom Charles, Custodian, Alamogordo, N.M.

The White Sands National Monument has a fervent friend in the person of Jack Voyde, a local photographer and tailor. For the past few months Mr. Voyde has given his time largely to the manufacture of White Sands products, mostly statuary, plaques and other articles of plastic art.

When the first Anglo-American families came to this vicinity about a half century ago they found that many of the Spanish American houses were finished on the inside with a marble like coat, usually a snow white but frequently in delicate shades and mottles. This was the first American knowledge of the uses of the Great White Sands. Investigation revealed that these early settlers heated the White Sand until each tiny crystal popped like a grain of popcorn. When the tiny crystal "popped" it was dehydrated and ready to be pulverized. When mixed again with water and spread upon the walls it formed an alabaster coat of snow white plaster paris, particularly clean and inviting.

Manufacturing plants have been set up from time to time and White Sands products shipped from New York to California. Women's Clubs have used little slabs of White Sand for place cards at their most exclusive parties; a few of Alamogordo's leading citizens have built their homes of these White Sands. The Sands have been used for many other purposes, but probably no one has been more successful in his accomplishments of making use of the White Sands than the present experimenter, Jack Voyde.

I am sending you a sample of his handicraft, Mr. Superintendent. If you think it is good enough you might pass it on to the Director, we will get you another.

Voyde combines his art of photography with his skill as a moulder and produces remarkable plaques of renowned scenes and characters. An old church is sprinkled with the sparkling crystals of White Sand and it looks like snow. Candlesticks, paperweights and picture frames are mixed with marble dust and mottled with wonderful effect. But probably the most successful of Voyde's efforts is the combination of his White Sands photographs mounted in a White Sands picture frame.

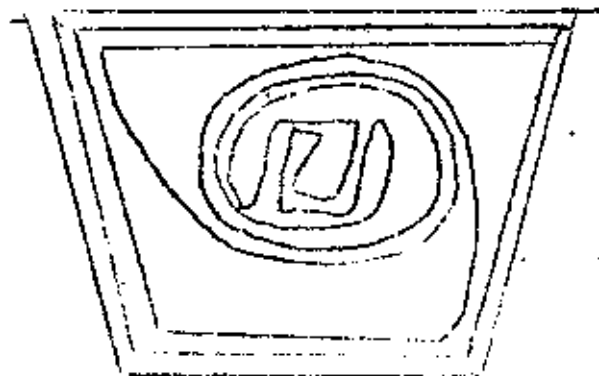
It strikes me that this activity should develop into a source of revenue when the Park Service really takes over the Sands and has even a partial control of the hundreds of daily visitors.

The work that Mr. Voyde has done was without thought of remuneration. It was just a hobby, an opportunity to let off steam along the lines of his inclinations. He has sold nothing, has so far offered nothing for sale. It is some satisfaction to him and to other White Sands enthusiasts that an art store in El Paso is now urging a wholesale manufacture of some of Mr. Voyde's best pictures.

November weather has been ideal - roses still in bloom, figs ripening on the trees here at Thanksgiving time. The recreational value of the Great White Sands is therefore at its very best. This week work was begun on a

\$109,000 overpass of the Southern Pacific R R, part of the White Sands highway. We hope to get one more project on that highway early in the coming year.

Recently the Custodian found a very beautiful prehistoric bowl; where the flood waters had uncovered it in a deep arroyo. It was red on terra-cotta, with an endless design, (Copy inclosed). Can you tell me if this peculiar swastika design has any significance?



We have the following report from Associate Engineer Atwell, who is in charge of CCC work in Bandelier:

"Acting Custodian Evanstad has agreed to cover all monumental matters in his report and I all CCC activities, so our reports will not duplicate. For that reason I will stay with the new camp and its work.

The establishment of the camp in Frijoles Canyon of Bandelier National Monument was the main engineering activity during the month of November. Camp #19 of the Forest Service was to be transferred to Bandelier as MEX on November 15th. Previous to November 4, the army had partially completed the barracks, but had suspended work several times on account of shortage of funds. On that date, 24 inches of snow fell and Camp #19 was flattened to the ground. Transfer of that camp started at 9 P.M. on the following night with the arrival of several scores of men with no sleeping quarters, fuel or food. These men occupied the partially completed barracks, but anyway the birth of Camp MEX had arrived. As additional funds became available, the camp was further constructed with carpenters working over bunks and luggage. To date, the camp is not completed although many CCC men have been continually on it for three weeks.

During the construction of the camp, as there was no road of any kind into the box canyon where it is situated, all of the material had to be lowered 300 feet over the cliff on Mr. George X. Frey's private cableway. Mr. Frey

operated the machinery himself, and as yet, has his first egg to crack. The material moved consisted of two trucks, a quarter million feet of lumber, kitchen ranges, an electric light plant and enough incidentals to bring the tonnage to a million and a half pounds. Mr. Frey has constructed a novel stretcher where he can hang a crippled workman on the cable to be removed from the canyon.

The camp is well supplied with material to work with. From Chief Engineer Kittredge's office we secured eleven trucks, two compressors and two tractors. From the Forest Service, we secured a ripper, a tumble bug scraper, some rolling stock and small tools.

Although the camp has been in Frijoles Canyon since the first week in November, the men worked for the Forest Service until the 15th, when they were transferred to this Monument. The work for the two weeks that we have been operating since taking over the camp has consisted of:

1. Erecting small construction buildings for the work, as garages for the trucks, tool sheds, warehouse, blacksmith shop and powder houses.
2. Placing 10 miles of approach road into the Monument into shape with tractors and graders, thus assuring a fair road from the highway to the Monument.
3. Clearing, grubbing and burning the brush on the right-of-way for the first mile and a half. All timber of suitable size was cut into four foot lengths and delivered to the camp for fuel. The brush was piled in small piles and burned in the center of the right-of-way, great care being used so that no trees standing were scorched.
4. Rock cuts have been drilled and partly shot. Very good success was accomplished in the shooting. No material was wasted and the material was broken very fine. It could easily be frescoed.
5. Grading with the tractors, tumble bug and bulldozers is getting the first mile into shape.
6. A ten man crew has started to reconstruct the trail from the hotel to the Rio Grande.

If the weather permits, the truck train will be well into Frijoles Canyon by New Year's. Art Bess, you could help a lot if you would change to have Ed take over the duties of J Pluvius for the coming month.

In a second letter, Mr. Atwell reports as follows:

I do not need anything and I have no complaint to make. This is just a news letter regarding the CCC camp at Bandelier National Monument.

The camp strength is not up to normal on account of men being away on leave. All should return in a few days. We will weed out the "no goods" and get to full strength before the closing day, November 30. The army is not turning out our quota, but as soon as we get plans enough O.K.'d, we will get 175 men.

The line is cleared to Sta. 55 as far as plans are approved. The grubbing will be that far Tuesday. The grading is getting well under way, and we will have the sod broken that far in a week. As there is no heavy grading on the first mile, and the cost of making the road wider than 12 feet will cost practically no more as all it consists of is blading out the ditches and putting up the shoulders, I will build a standard road across the top of the mesa as far as I can with the machinery without increasing the man output. From Station 80 on, the cost would be greater, so I will construct only a 12 foot trail.

Wednesday we will use the surplus men on repairing the first few miles of the trail down Frijole Creek to the Rio Grande. We are also cutting some wood for the camp. We have the tool house completed, the blacksmith shop and repair sheds nearly finished and are ready to construct the car sheds. We have invoiced every tool and do-figger that we took over from the Forest Service. Martin has a CCC clerk and his records are getting into shape. Martins is doing the buying and that is a job when he has to get a hundred little items.

The water system plans will be on the way to you in a few days.

IN GENERAL:

1. All reports indicate that weather conditions have been unusually fine during the month of November. At this time one year ago winter had descended in all its fury on the northern areas of our district.
2. The reins of our organization have been tightened considerably in interests of efficiency in handling the various works programs now under way. Generally speaking, book and paper work and plans have been handled promptly and been kept strictly up to date.
3. We're keenly aware of the added responsibilities with reference to vandalism which these projects are bringing and men in charge at the various monuments effected are acting on these problems in cooperation with camp officers and foremen.
4. In the Southern monuments of Casa Grande and Tumacacori the rising tide of winter travel is becoming effective. We're endeavoring, despite the lack of special projects, to deliver the same good brand of public contact services.

Thus ends a month of considerable activity and at least some accomplishment.

Cordially,

Robert H. Ross,
Assistant Superintendent.

2

Journal of Management Education 26(7) 809-824

UNITED STATES
DEPARTMENT OF THE INTERIOR

Office of National Parks, Buildings and Reservations

PETRIFIED FOREST NATIONAL MONUMENT
Holtbrook, Arizona

December 1, 1933.

The Director,
Office of National Parks,
Buildings and Reservations,
Washington, D. C.

Dear Mr. Director:

The narrative report for the month of November, 1933 is herewith respectfully submitted:

GENERAL.

The separation of J. D. Kirk, seasonal Park Ranger, was effective November 20.

WEATHER.

The weather continued clear and mild almost throughout the month, with the exception of the 1st, when the first trace of snow fell. The snow, however, melted as fast as it fell, and the balance of the month, up to the 26th, resembled summer time. On the last three days a cold wind came up, the days were cloudy, and about an inch of snow fell on the night of the 29th. High temperature for the month was 73 degrees on the 27th, low was 22 on the 23rd. Total precipitation was .65 of an inch. Mean maximum temperature was 51.2 degrees, and mean minimum, 27.6 degrees.

ADMINISTRATIVE.

All office work, including regular and special reports, has been kept up to date.

I have inspected the Monument regularly during the month, and everyone has been working in a satisfactory manner. The road, with the exception of the places where the shoulders are washed, is in good condition for this time of the year, being in much better shape than U. S. Highway No. 66 is now.

The approach roads just outside the Monument are fair. U. S. No. 66 to the east between Holtbrook and the state line, is under contract for grading and surfacing, with the new right-of-way running almost parallel and slightly to the north of the old road. The paving of U. S. No. 66 between Holtbrook and Winslow has been completed. U. S. No. 200, crossing the southern part of the Monument, is in good shape, being one of the best graveled roads in the state.

PUBLIC WORKS PROJECTS.

Work on the trails in the Rainbow and Third Forests has been discontinued due to the exhaustion of funds. The Rainbow Forest trail is oiled and completed, the Third Forest trail is oiled for about half its length, and the

Second Forest trail is complete as to grading and graveling.

The trail to Newspaper Rock provides one of the most interesting views of points of interest in the whole Monument. Starting at the top of a high cliff, stone steps go down through a natural fissure to a talus slope dotted with huge blocks of sandstone. These blocks of sandstone are the canvas upon which the prehistoric people practiced their art. The pictographs, on Newspaper Rock in particular, are so numerous that some of them overlap, and most of them are so clear that they look as though they were carved only a short time ago. The trail winds around down through the blocks to the valley below, crosses a small arroyo, and passes on to the "Origin of Life" cave. Each turn in the trail brings more pictographs to view, and the project opens up what is destined to be one of the most popular side trips in the Forest. The trail, 1,105 feet in length, to date has been staked and cleared, with 23 stone steps and 2 large flagstone landings in place.

In the First Forest, the location for the Eagles Nest Rock road has been surveyed and staked, and 700 feet of assorted sizes of corrugated culvert have been ordered through Field Headquarters. This work has been approved by Assistant Landscape Architect Harry Langley.

The well rig arrived during the latter half of the month, and was set up ready for work at noon on the 24th. One driller, one driller's helper, and one laborer were secured from the Reemployment Office in Navajo County, and the balance of the month was spent in pulling the 634 feet of "frozen" casing in the well, building a shelter over the well site for the cold weather now overdue, and at present, cleaning out the hole to its former level. The well casing from the Indian Service supply at Fort Wingate has been brought down and everything is in readiness to resume operation.

Work on the overpass over the Santa Fe Railroad, under supervision of the Bureau of Public Roads, progressed rapidly, but the contractor was held up by delays in securing materials, particularly structural steel. The piers and abutments have been poured, and at present the contractor is awaiting arrival of the structural steel to complete pouring of the concrete on the top slab. The work is approximately 55% complete.

The bridges over dips, also under the R. P. R., have also been coming along in good shape. The concrete on the most northern bridge is completely poured and is now curing. The next bridge to the south is in the process of completion, while the third bridge under construction has the concrete base poured and curing. This work is approximately 35% complete, and all materials are on hand.

CIVIL WORKS PROGRAM.

On November 9 we were requested by telegraph to notify the office of the Chief Engineer as to the number of men who could be employed on a Civil Works Program between November 15, 1933 and February 15, 1934. It was stated that available equipment must be used or such as could be borrowed from cities, counties, or other agencies. As we had estimated for a road connection between the Painted Desert and Ganado with the idea of a good road between the Petrified Forest and Canyon De Chelly to use 400 men or more, during the next week I contacted various county officials, and the Superintendent of the Western Navajo Agency at Loupp, the Superintendent of the Hopi Agency at Keams Canyon, Superintendent J. G. Hunter of the Southern Navajo Agency, and others for the purpose of locating such available heavy equipment. Enough tent housing equipment and heavy road equipment was promised to carry on the work as estimated should the project have been approved.

TRAVEL.

The travel has continued good, the month being the best November recorded. The total through the Forest proper was 5,200, which was 1,825 more than November, 1932, and 282 more than November, 1929, the best previous November on record. A tabulation of this travel follows:

For the month, Petrified Forest section, cars,	1,766,	people	5,200
Previously reported.....,	" 2,448,	"	7,269
Total to date.....,	" 4,214,	"	12,469
For the month, Painted Desert section..,	" 2,432,	"	8,835
Previously reported.....,	" 3,388,	"	11,928
Total to date.....,	" 5,820,	"	20,763
Grand total for the month.....,	" 4,198,	"	14,035
Grand total to date.....,	" 10,034,	"	33,232
Grand total same month last year.....,	" 2,690,	"	7,966

Every state with the exception of South Carolina was represented, also the territories of Alaska, the Canal Zone, Hawaii, and the Phillipine Islands. Foreign countries registered were Australia, Canada, China, Denmark, England, Holland, Japan, Korea, and Switzerland.

SPECIAL VISITORS.

Mr. and Mrs. D. C. Kidder and party, from Yosemite, visited the Forest on the 4th. Mr. G. A. Waring, U.S.G.S., also came through on that day. On the 6th, Mr. and Mrs. Eddie Peabody and party, from Riverside, California, were interested visitors and interesting people. Ranger R. R. Williamson, Elsie Pike, and Carol Tylor, all of Grand Canyon, spent a short time here on the 12th. Gay Rogers came down from Santa Fe on the 12th, and after spending three pleasant days as the guest of the Superintendent and wife, left for Phoenix in company with Miss Label Brown on the 15th. "Cozy" McSparron and wife, of Chin Lee, also were guests of the Superintendent during the month, arriving on the 9th, and leaving on the 12th. Assistant Architect Harry Langley breezed in on the 22nd, and left on the 26th, spending four days in looking over Public Works and proposed Civil Works projects.

MISCELLANEOUS.

On invitation of the President of the Holbrook Chamber of Commerce, I proceeded to Holbrook on November 30 and met with that body, and others, for the purpose of discussing with Governor B. B. Mear of Arizona the proposed Painted Desert - Ganado road towards Canyon De Chelly National Monument.

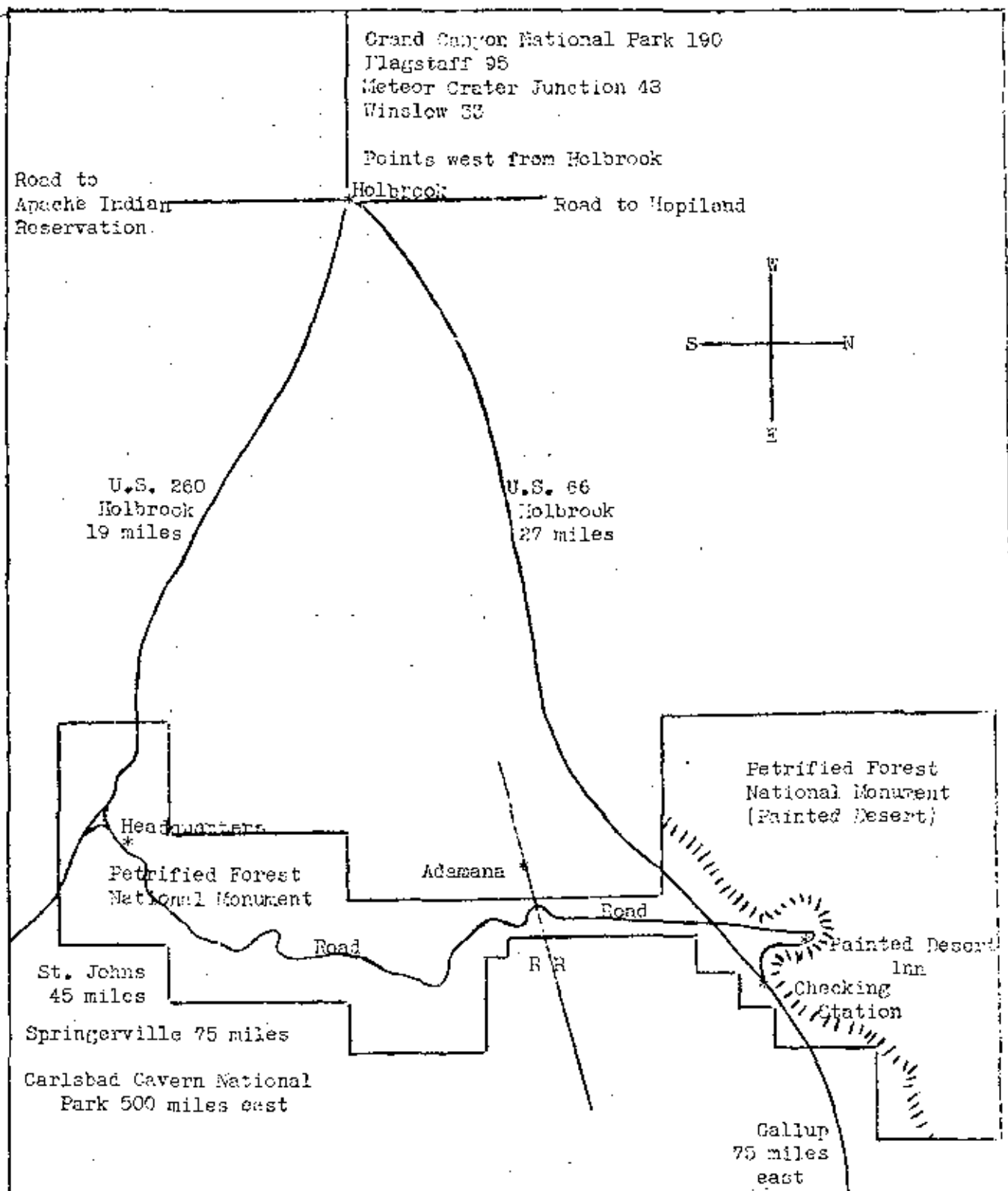
The Governor had been taken over the existing secondary road from Chambers to Ganado by Superintendent Hunter, Southern Navajo Agency, the day before.

The Governor expressed himself as being 100% in favor of this proposed road and dispatched telegrams to Senator Hayden, Congresswoman Greenway, and others, endorsing the project. I understand that resolutions in favor of it, supported by letters from the Board of Supervisors of Navajo and Apache Counties, and others, went forward by air mail November 29.

Very truly yours,

Chas. J. Smith
Chas. J. Smith, Superintendent.

Sketch map of Petrified Forest National Monument showing the location of roads and trails in the vicinity. Chas. J. Smith, Superintendent.



SUPPLEMENT TO THE
NOVEMBER REPORT OF THE SOUTH-
WESTERN MONUMENTS

(Dealing with people, "Shop Talk" and news of interest)

First place in this Supplement is given to Leonard Heaton, Acting Custodian of Pipe Spring National Monument. Mr. Heaton has been gathering data on the first telegraph station in Arizona. Pipe Springs became the first telegraph station in the state when the Deseret Telegraph line reached there in December, 1871. This line is still in use as a telephone line running into the town of Kanab, Utah.

Mrs. Eliza Luella Stewart Udall, now residing in Mesa, Arizona, was operator at this station for less than one month. Mr. Heaton wrote her recently regarding the location of the telegraph office in Winsor Castle, the old Fort at Pipe Springs. In reply, Heaton received the following reply from Mrs. Udall:

Mesa, Arizona,
October 21st, 1933.

Mr. Leonard Heaton,
Moccasin Springs, Arizona.

Dear Sir:

"Your letter of the 2nd instant received concerning the telegraph office at Pipe Springs. As it was more than sixty years ago my memory may be faulty. However, I will answer your questions to the best of my ability.

"I think your information concerning the location of the office is correct, the West end of the lower building on the second floor. The small unpainted pine table that the instruments were on was on the north side of the room. The instrument consisted of a key and a little box relay or receiver in natural light wood.

"There was a cot or couch in the room, on which I slept and also a number of chairs, perhaps not more than two. Also my trunk and belongings were here as well as my room as well as the office. Everything was quite quiet.

"There were no Indian troubles or outbreaks while I was there and no important messages. In fact I was there less than a month and everything was so peaceable that Mr. A. P. Winsor who was in charge of the Fort did not think it necessary to keep the office open.

A.

"It was from the Kanab, Utah Office that Major Powell sent his messages and I was operator there for more than seven years before we moved to Arizona in 1880.

"There was just one sign at that time and it read "Deseret Telegraph Office" as it was on the L. D. S. Church line.

"Sup't. Amos Milton Musser came to Kanab and opened that office in Bishop Levi Stewart's residence then took me in his buggy to Pipe Springs, connected the instruments, and sent message to the Deseret News(Salt Lake City) stating that the office was opened with Miss Luella Stewart, Operator. As I remember, it was the last of December, 1871 or about the first of January, 1872.

"I believe I have answered the questions you asked. If I can be of further service, let me know.

Sincerely yours,

Eliza Luella Stewart Udall"

Mr. Director, this letter is valuable history and this Supplement, we feel, would be worth its while if it stopped right here. Mrs. Udall, an elderly lady now, lives in Mesa which is about 50 miles from Coolidge. Year by year the old original pioneers pass away sealing up original sources of information forever. We hope Leonard will continue to keep in touch with Mrs. Udall who could give invaluable suggestions on the reconstruction of the various rooms of the old Fort as it was in the pioneering days. Pages K and L of the September, 1933 Report Supplement contain an historical account of Pipe Springs prepared by Mr. Heston.

Along the subject of history, we have this one from a ranger at Casa Grande who was beginning a tour of the Casa Grande and Compound A. He was mentioning the visits of the early Spanish missionaries and explorers and commenting on the usual fact of the visit of Padre Kino to Casa Grande in 1694.

Lady Visitor interrupted: "Oh yes, Kino! --(as she brightens up) at the American Legion Convention last year, the Auxiliary all carried little dolls -- one of them was Kino -- his face was a dried apricot and with his black robe and cape it just looked like a Spanish Monk...etc. etc.---Isn't it interesting!"

Under date of November 24 Johnwill Faris of Aztec writes Earl Morris, Box 500, Boulder, Colorado, on the progress of work. For general news, excerpts from the letter follow:

"I am very glad to report, Earl, that we are moving along at a very good pace. Today twenty one men with three teams moved 104 loads of dirt into the field just south of the ruin. As yet we are not finding a great amount of stone of any nature but then we are reaching the point where it is beginning to show up and I would not be at all surprised that tomorrow we will encounter a good supply of rock. To date we have hauled out three hundred nineteen loads. Almost two hundred of these loads went on the road leading from the town road to the house on in the lane. We will have no trouble in getting rid of the earth. The rock that we get from the debris we are leaving more or less in rows and in a few days after we finish I plan to have a man or two go over these piles and locate for us the ones that we find suitable for building. Oscar and I thought this better than trying to pick out the rock as we go and thus get in the way all of the time. We are most certainly open for suggestions and should any occur to you at any time on any line connected with the ruins I wish you would feel free to offer them. I figure that the dirt will run as we are doing it, about seventy five to eighty cents a yard. I might say that we have three teams and six wagons of the dump type you mentioned and while one is being loaded the other is being hauled away and dumped. So much for the dirt. I will try to keep you posted from time to time as to our progress"

Further on in the above letter, Mr. Faris discusses the tests for ground water made about the Aztec Ruins. We quote:

"About the drainage, Mr. Morris, Engineer Hamilton and myself with Oscar sunk three test pits the other day, one North of the Museum steps about fifty feet, another at the west wall about the same distance and out and one in front of the blacksmith shop. We find water about the twelve foot line in nearly every case. One thing is very bad; In a test pit in the roofed Kiva we struck water at three feet and the level of the floor is some three feet lower than the level that we struck water at the north wall. In testing several walls to see about the depth the walls went into the earth we find that in no case does that depth exceed two feet six inches. That being the case, I see

no reason for a drainage to encircle the entire ruin. I imagine to encircle the roofed Kiva with a drain leading it to a lower level and then at a later date when the entire ruin is dug out worry about the other Kivas we are apt to find in the Court. Do you think we should make some provision for a drain around the Great Kiva? We would appreciate any ideas along these lines.

"Another feature in the drainage line is that of each room. On these tests that I mention where we dug along the wall we find that the damage is not in any sense below the level of the floor but above the floor to a height of about 10 to 16 inches. This might mean different things and I would like to have an expression from you. In every case where we sank a test we find that the foundation is of river boulders and I wonder if we might not dig down not over two courses until we come to that type stone and then drain to the center by sloping the floor. Another thing is that walls are much worse on the high walls than on the lower ones. That might be explained by the fact that the Sun does not ever shine on the first two feet of the north walls and almost every day on the South and East rooms. Just the way to remedy this feature we will fight out and certainly do the best we can. If you have your Aztec Ruins map I might say, for example, that conditions in rooms 78 and 79 are much worse than in rooms 37 and 41. Other tests bear this idea out very much."

Paris wrote Engineer Hamilton and in this letter quoted from Earl Morris' comments on the drainage problem:

"In regard to the drainage proposition, considering the depth at which you found water in your outside test pits, I do not think there is any necessity of planning a drain around the entire ruin at present. It is probable that the roofed Kiva is the deepest thing that we shall ever have to cope with. And if a satisfactory drain can be worked out ~~and~~ to take care of it, I believe that is all that is necessary at present. I very much doubt if there will be need of drainage for the Great Kiva. I am not clear at the moment as to how high the floor of it lies above that of the roofed structure, but believe it is a distance of several feet. It might be well, however, just as a safeguard, to dig a pit in the floor of the Great Kiva to see just how wet the earth seems to be there. But in judging the matter take into account how much of it is due to recent

rainfall which is the sort of thing that would be guarded effectively against when the building is roofed. It might not be a bad plan, however, to put at an appropriate place in the line which leads away from the roofed kiva a blocked tee so that if the future should dictate a drain for the Great Kiva it could be connected at that point. Of course I presume that you are planning to provide for surface drainage around the structure, presumably leading into the underground line.

"As to the matter of drainage for each room, frankly I am stumped. For years I have been trying to think out some method the use of which would prevent the disintegration of the walls immediately above the floor level, but I have hit upon nothing that appeals to me in the least. Whatever rain and snow falls into the rooms is bound to dampen the earth beneath them to some extent. I have noticed the condition that you report, namely, that there is no appreciable damage to the walls beneath the floor level, but that there is marked crumbling and exfoliation in the lower courses of the masonry immediately above the ground level. It is there that evaporation takes place. The moisture from below seems to soak up into the stone work and out for a distance of a foot or a foot and a half above the floors and of course during winter time frost acts heavily upon this dampened masonry. If the wall stones themselves were sufficiently hard they might be able to wear cement into the joints and obtain an effective result, but since most of the sandstones disintegrate very readily, I am at a loss what to do. I do not think that the placing of drain pipes would help very great and toward attaining the desired end. This is a problem that it seems to me the government engineers should have some idea how to cope with. One possible suggestion occurs to me. It might be that if one were to remove a few inches of the floor earth and put down a tamped layer of oil-filled material, thus to produce a surface comparable to that of our oiled highways, that the water would not soak through it and thus provide a source for the moisture which works upward into the walls. If something of this sort were done, whether it would be enough to put a gravel-filled sump at the center of each chamber, or whether it would be necessary to lead a drain pipe out of each room, I do not feel competent to decide. However, I would be interested to know the opinion of the government engineers in regard to the possible effectiveness of such a procedure. You might ask them also if there is any sort of water-proof material that might be painted upon the bases of the walls that would fill the pores sufficiently to prevent either absorption from the surface, or the working to the surface of interior moisture."

(End Of Quotation from Morris)

Comments: R. H. Rose:

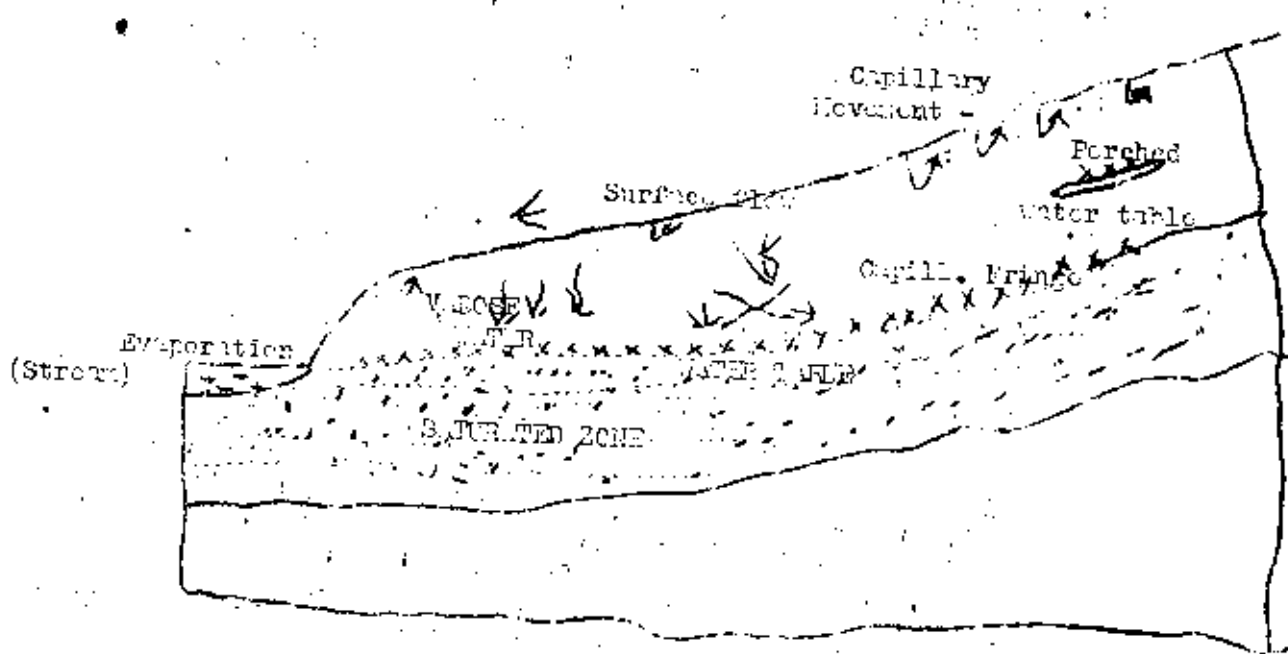
Excerpts of these letters of Messrs. Morris and Paris prove that there is a highly important problem in Ground Water Geology at this Monument. I am prompted here to introduce a few ideas on the principles of Ground Water flow. They may at least suggest the exact cause of certain damage noted in the ruins at Aztec.

Let us consider rain falling on an area the soil of which allows water to migrate downward through the spaces between the grains of sand, gravel and other porous formations. Of the total rainfall on the area, there will be considerable quantity carried away as surface flow. Another portion will represent evaporation and the remainder will seep into the surface of the ground. Of this quantity seeping into the ground, its distribution will be as follows:

1. Part will be retained in the upper soil area by capillary attraction. The amount so held in suspension as it were in the surface area will be greatest immediately after rain and diminishes by evaporation constantly. The amount of water in this zone cannot exceed the quantity capillary attraction can hold against the downward pull of gravity. This is the UPPER CAPILLARY FRINGE, OR BELT OF SOIL MOISTURE
2. Below this belt of SOIL MOISTURE immediately below the surface of the ground, comes what may be termed the AERATED ZONE. Because of irregularities in the spaces openings and fissures the movement of the water downward is concentrated along the larger openings and although a great amount of water passes through this zone, it is not saturated.
3. The true water table is below the AERATED ZONE. The idea of the Aerated Zone is reflected in the term VADOSE CIRCULATION which is given to this "wandering water" zone: VADOSE WATER may be applied to this water which wanders downward from the Upper Capillary Fringe along lines of easiest flow.
4. Below the Aerated Zone is the SATURATED ZONE. In this zone the spaces between sand grains and gravel are filled to capacity with water. They cannot possibly contain any more. The WATER TABLE is the surface defined by the upper limits of the Saturated Zone.
5. Then there is a capillary fringe above the water table. This may extend as much as 1 to 4 or 5 feet above the the Water Table.
6. The Ground Water Table is a subdued replica of the surface terrain where conditions of soil depth, porosity and other properties are more or less the same throughout.

PRINCIPLES OF GROUND WATER OCCURRENCE

(Vadose movement may be along cracks and joints or along courses of higher sand or gravel porosity, around the grains.)



- A. The Saturated Zone is a zone of free movement of ground water among the grains and spaces in the sands, gravels and other formations.
- B. Where a surface valley intersects the Ground Water Table there may result a stream of some size originating in a seep or spring.
- C. The Felt of Soil Moisture is due to capillary attraction which holds some of the percolating waters near the surface of the ground.
- D. Surface or Wandering Water finds its way to the Saturated Zone around grains and along fractures.
- E. In a moistened zone, the "Water Table Capillary Fringe" extends from a foot to four or five feet above the Water Table.

Relation of Aztec Problem to Ground Waters:

To thoroughly discuss the relation of Aztec's kivas and walls to occurrence of ground water would run into much greater space than is warranted here. However, from the following points the gaps in the discussion can be seen by the reader.

Let us consider the floors of the kivas or of the rooms in the ruins. Here are the possibilities:

1. The kiva may be deep enough that its floor is below the upper limits of the Saturated Zone, or WATER TABLE.
2. The kiva or room floor may not be as deep as the SATURATED ZONE but yet be as deep as the CAPILLARY FRINGE (between a foot and four or five feet of Ground Water table)
3. The bottom of the kiva may not even extend into the Zone of the Upper Capillary Fringe, but merely extend into the AERATED ZONE or Zone of Vadose Water Circulation.
4. All room floors or all kiva bottoms, unless extremely shallow, extend through the depth of the UPPER CAPILLARY FRINGE or the ZONE OF SOIL MOISTURE. Remember that this upper zone is Not a zone of free flow and is ~~not~~ a zone of water behavior in accordance with laws of capillary movement. Also we must remember that through capillary attraction the soil tenaciously holds the water in the inter-spaces between grains and very reluctantly gives this water up. In other words, TO EXPECT TO CARRY OFF WATER DUE TO EITHER OF THE TWO CAPILLARY FRINGES BY INSTALLING TILE WILL MEET WITH DISAPPOINTMENT. AS A MATTER OF FACT, IT IS ENTIRELY POSSIBLE THAT A POROUS TILE ITSELF CARRYING WATER WOULD GIVE UP SOME OF ITS FLOW TO THE SOIL THROUGH CAPILLARY ACTION THROUGH THE TILE ITSELF MERELY MAKING THE MOISTURE CONDITION WORSE RATHER THAN BETTER.

5. Of course, all kivas and other structures penetrate the area of surface flow of water.

Further Interpretation of Above Six Points:

1. As a rule, we are safe in saying that ANY KIVA FLOOR OR OTHER BOTTOMS OF STRUCTURES NOT WATER-TIGHT WILL HAVE STANDING WATER IF THEY ARE ACTUALLY BELOW THE WATER TABLE OR EXTEND INTO THE ZONE OF SATURATION.
 - a. When such situation exists, tiling in general can't be resorted to as a solution to the problem for two reasons: (1) Trenching for such tiling would have to be perhaps 8 or 10 feet underground which would be great expense in installation; and (2) unless the tile were some five or six feet below the room floors or the kiva bottoms, such floors and bottoms would still exhibit moisture due to the Water Table Capil. Fringe.

- b. Our general conclusion would have to be that tiling for purposes of DEPRESSING THE GROUND WATER TABLE SOME FIVE OR SIX FEET BELOW THE FLOORS OF ROOMS OR KIVAS WHICH THEMSELVES ARE ALREADY SOME TEN OR TWELVE FEET DEEP CANNOT BE SUCCESSFULLY DONE.
- c. In cases of where the Ground Water Table is above kiva or room floors, consider the possibility of going to the source of the water percolating into the ground, such as the Canal back of the Aztec Ruin. If this is the water source, then the slope of the water table is from this canal down toward the river. Here, perhaps by placing tile a few feet in depth the Ground Water can be reached. Depressing the Ground Water Table somewhere uphill from where this tile pitches beneath the Ruins, will cause a lowering of the whole Water Table Surface by several feet from point of tile to the river. In short, a condition of subdrainage of this sort may be corrected by tiling several hundred yards up the GROUND WATER SLOPE from the kiva or other structure we are desiring to drain.

2. Let us consider point two above-that is, a case of where the kiva or room floor doesn't extend into the Saturated Zone but merely into the Water Table CAPILLARY FRINGE. The floors and walls for a few feet above floor will show moisture by this capillary water though the water table is from one to five or six feet below such floors. NO AMOUNT OF TILING WILL REMEDY THIS FLOW UNLESS SUCH TILING PROPERLY PLACED SOMEWHERE UPSLOPE WILL RESULT IN A DEPRESSION OF THE WATER TABLE SUCH THAT EVEN THE UPPER LIMITS OF THE CAPILLARY FRINGE WILL BE THROWN BELOW THE FLOORS OF THE ROOMS OR KIVAS.

- a. Sinking tile into the Capillary zone only just went got anyplace. Again, it should be stated that water running thru a porous tile thru a zone of Capillary action or aeration will likely GIVE UP SOME OF ITS WATER to the earth itself merely making worse the water problem or moisture conditions.
- b. Kivas or rooms may even get water in them because the channels, fractures or other avenues of Vadose Circulation lead to the kivas or rooms. Generally, tile around such rooms or kivas cannot correct this condition because each little stream of water is an independent flow and the whole amount of water in the Vadose Zone doesn't obey hydrostatic laws as one unit as does the water in the Saturated Zone.

- c. Improving the surface drainage such that there is a SPEEDY RUNOFF giving little or no time for percolation of water underground will greatly improve kiva or room water due primarily to little streams of Vadose or Wandering water getting in.
 - d. Correcting against this Vadose Circulation may present the "hardest nut to crack" of all the drainage problems confronted by the Ground Water Geologist. REMEMBER THAT IT MAY BE A LITTLE DIFFICULT TO DETERMINE WHETHER IT IS WATER OF A SATURATED ZONE OR MERELY VADOSE WATER THAT IS CAUSING WATER TO STAND IN THE BOTTOMS OF ROOMS.
3. The third possibility, namely, that of the room floor or kiva bottom extending merely into Vadose or Saturated Zone is discussed in (b), (c) and (d) above.
- a. In general, I'll say (1) improving surface drainage, constructing "curtain walls", cementing or paving ground areas, etc. are possibilities in solving kiva or room water due to Vadose Circulation.
 - b. In general, tile will but little improve water due to anything except complete saturation.
4. Let's consider case 4: that is, all rooms or kivas penetrate the Zone of Soil Moisture or the Upper Capillary Fringe. The walls in rooms and kivas at the Ground Level and below for possibly 2 to 4 feet will show moisture due to Capillarity. The following facts stand out in this connection:
- a. Will tile correct this condition? No, except perhaps immediately after exceedingly heavy rains when for a brief time this upper Fringe may be completely saturated. DON'T EXPECT TO IMPROVE THIS CONDITION BY TILING. IT MIGHT BE MADE WORSE IF A POROUS TILE CARRYING WATER RUNS NEAR RUINS WALLS IN THIS UPPER FRINGE ZONE!
 - b. This moist condition just below ground level may not be apparent during the Summer because of rapid evaporation but with coming of winter be most apparent. (1) improving surface drainage; (2) construction of curtain walls; (3) protective coatings on walls of ruins themselves- these are some of things that might be resorted to to prevent this moisture of the Soil Moisture Zone.
5. Now for the last: all structures penetrate the surface. This portion of water due to runoff should be made as high as possible, and of course improving surface drainage in usual ways is the answer here.

DIAGRAMS ILLUSTRATING SOME OF POINTS DISCUSSED.

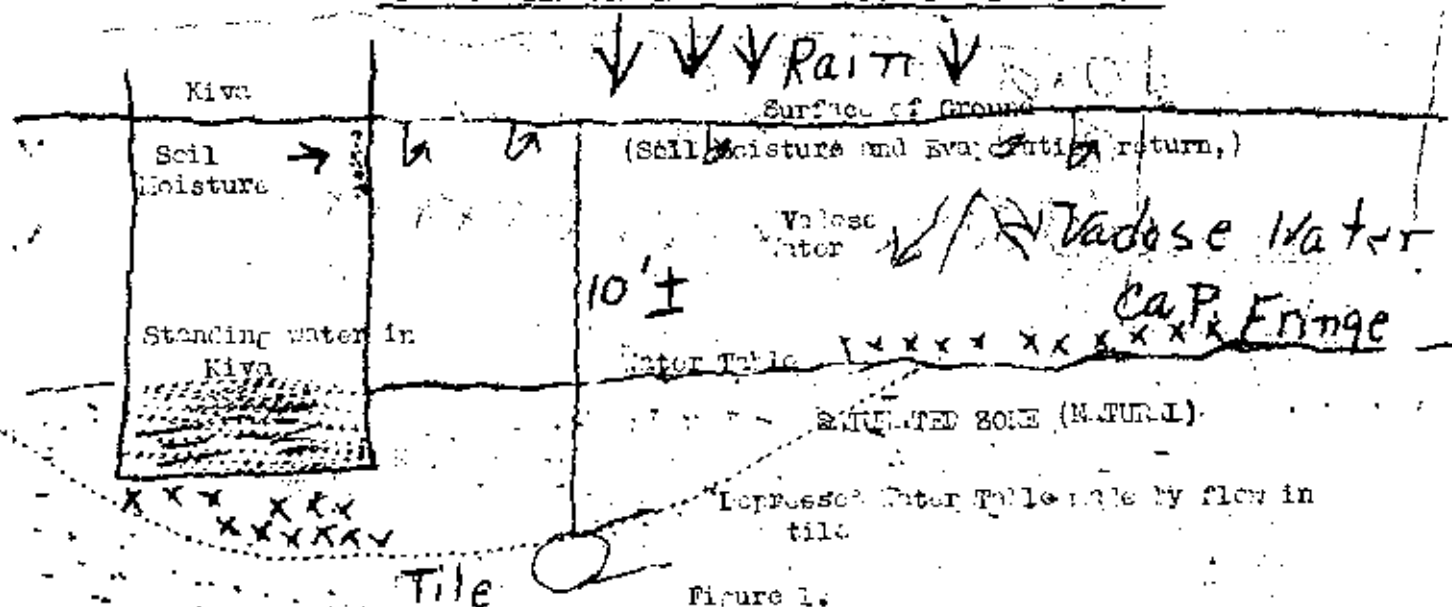


Figure 1.

Showing that tile to depress ground water table by any appreciable amount must be very deep if to do any good. Even with such tile close to ruin, capillary moisture will probably persist on lower walls and floors.

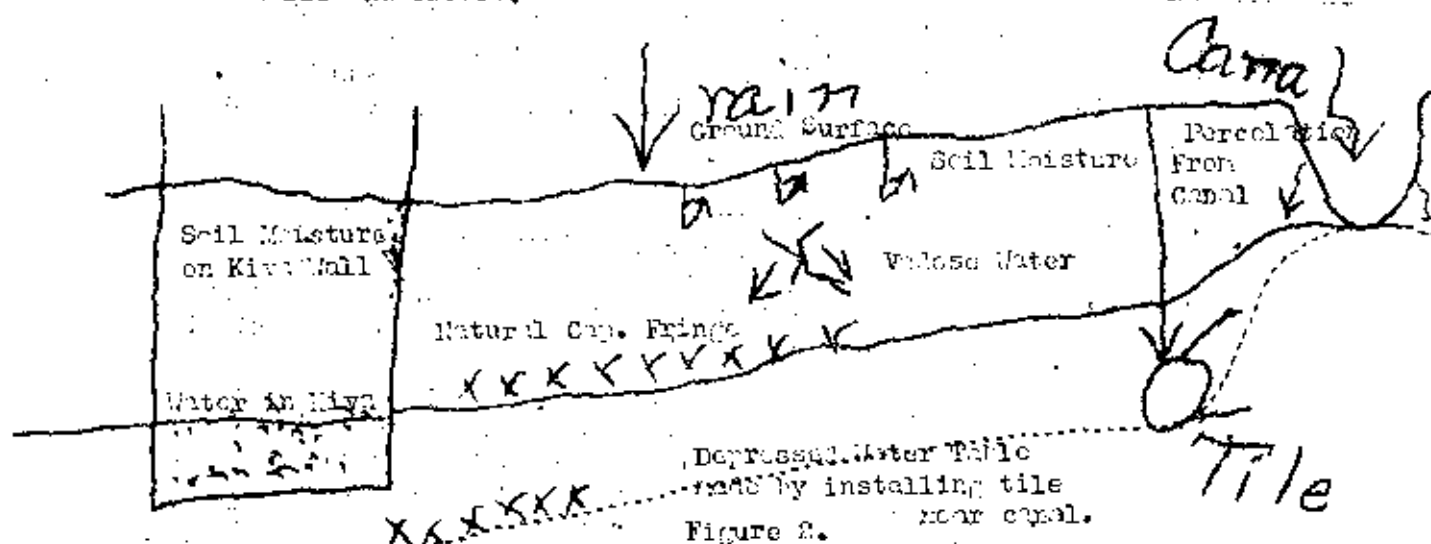


Figure 2.

Illustrating how tile near source of Ground Water percolation may depress ground water table hundreds of yards down slope from where tile is placed. If kiva such tile is installed to protect its floor in saturated zone then tile must be installed so as to get greatest amount of water table depression. This can often be done to depress Water Table Capillary Fringe so low it will come below kiva floor.

FURTHER DIAGRAMS ON TILING

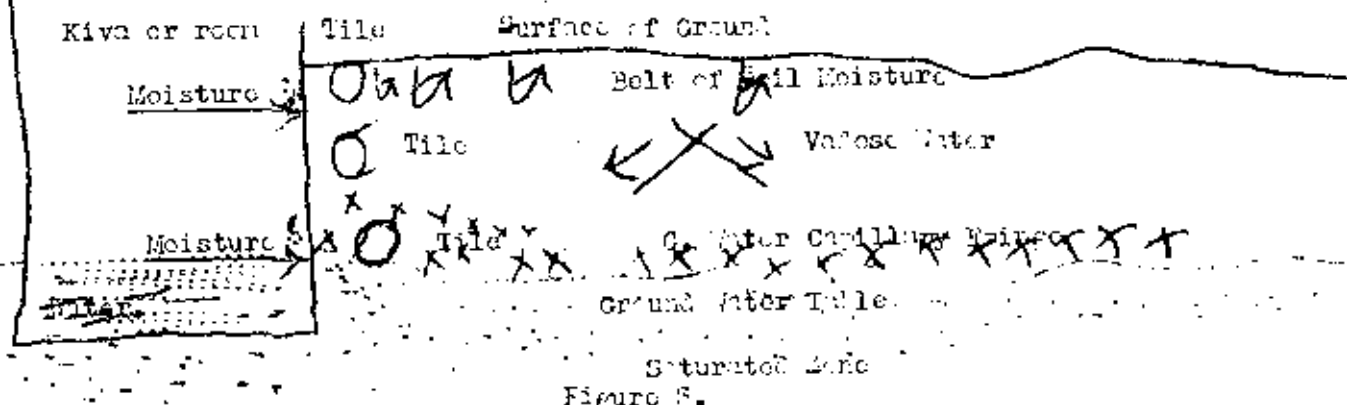
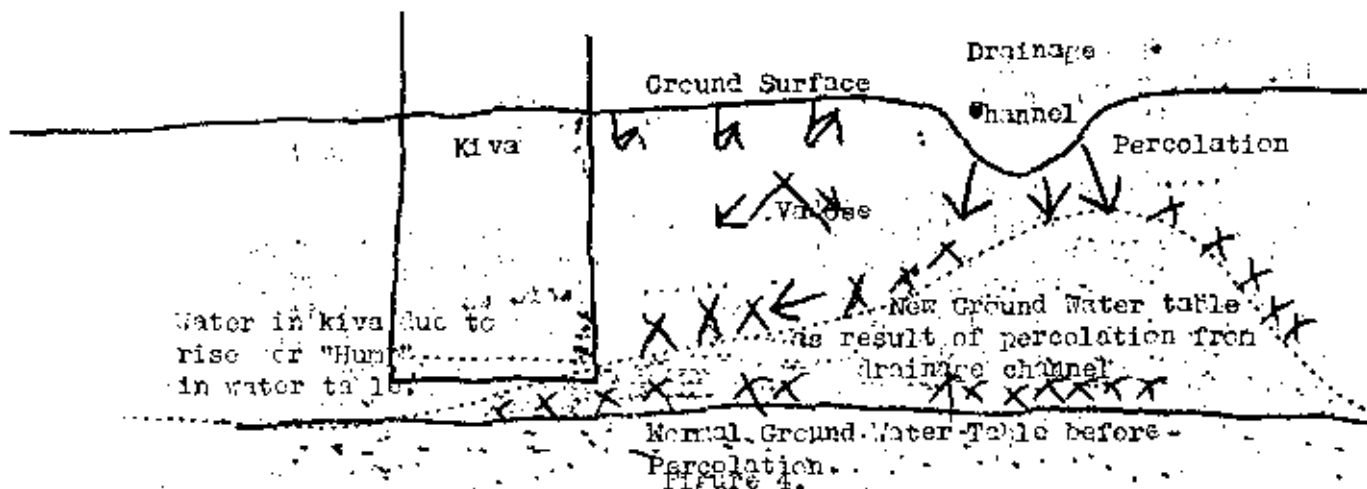


Diagram showing tiling in (1) Belt of Soil Moisture; (2) Zone of Aeration, or Vadose Circulation; and (3) Ground Water Capillary Fringe. None of these are zones of free flow. Zones (1) and (2) stubbornly cling to their water content and will not give it up to porous tiling. In fact if water flows in porous tile through these two zones, the earth may even rob the porous tile of its water by capillary attraction.

Other Problems:

1. Water-proof curtain walls installed deeper than the Upper Capillary Fringe would largely solve the problem of damage of walls by capillary water immediately above the ground line. It would also solve the problem of moisture on walls of rooms at and just below ground level.
2. Curtain walls wouldn't protect bottoms of walls which extend down into the Ground Water Capillary Fringe Zone. Page K, Figure 2 suggests a method of depressing the Ground Water Table so the Water Table and the Capillary Fringe just above it, will drop clear below the bottom of the room or kiva.
3. Endeavor to perfect the surface drainage. The least possible water allowed to percolate into the ground the better it is. Surface stream channels should be as water-tight as can be attained. Too much downward percolation from surface drainage channels might cause a local "HUMP" in the Water Table. If this local rise becomes too high, it might bring the ground water, or at least its Capillary Fringe into the bottom of the rooms or kivas.



Percolation must be reduced in surface drainage as low as possible to prevent enough seeping water from reaching Ground Water Table as will build the "HUMID". Water-proof surface channels would be desirable.

Thus, if too much percolation of water occurs from sluggish surface channel, the Ground Water Table might be raised high enough as shown in the illustration for water to seep into the Kiva. Even tho the Saturated zone is raised just a little, the Capillary Fringe might be raised high enough to begin to moisten the Kiva floors and lower wall portions.

(Page L, Figure 3).

It should be mentioned here that the Vadose Zone is not a zone of saturation and it is this water that it is hardest to control if wet blotches here and there on dry walls show its presence. Improvement of surface drainage as perfectly as possible is the first place to start. If curtain walls don't have to go unreasonably deep, some protection against Vadose Water may be thus provided. In cases crushed rock in a trench beside a water proof curtain wall, and loose jointed, non-porous tile might be a real help.

This discussion is presented here in an attempt to explain the exact cause of certain moisture conditions in ruins in the light of Ground Water principles. The nature of the moisture in each case must be known before the correct remedy can be prescribed. Tile will not extract water from earthen material wet by virtue of Capillary Water only; as a matter of fact, such soil moist by capillary water may, by capillary attraction, even "rob" a porous tile of some of the water flowing through it.

Thus, it appears that Curtain walls(water-proof), tile, rock filled trenches and the like would have to be varied greatly to solve the different moisture conditions arising in kivas and other ruins. Perhaps the discussion above will aid somewhat in suggesting remedial measures for different sets of moisture conditions.

(R.H.R.)

Tom Charles sends us a letter which was written to him by Dr. H. L. Kent, President of New Mexico State College. We quote parts of the letter here:

"....Saturday evening late Dr. O. F. Cook of the Office of Crop Adaptations and Acclimatization, was in my office discussing various projects in which he is interested. He ~~said~~ ^{said} he thought it would be a wonderful thing if some provision could be made at White Sands National Monument to use some men during the winter, for a planting of many varieties of cacti and other plants peculiar to the Southwest. His idea is that if this could be done and you could find an area inside of the Sands which is not covered by the sands and into which a road might be constructed, that in this area the government should attempt to make a sort of desert arboretum with cacti and other rather peculiar desert plants planted therein and each species labeled giving its name, its natural habitat and perhaps any other interesting data about it. Of course you can appreciate how much valuable and interesting information might be accumulated about some of these plants. For example, I have known the so-called "Mormon Tree" almost ever since I have been down here. I collected some of it to send to Clarence in England and he told me he did not care to have the material sent as they did not want to use anything except what the students themselves collected. When he came home this summer I talked with him about it and much to my surprise he told me this plant is a gymnosperm. That is, it belongs to the very great group the same as pines, spruces, junipers, etc. Of course that might not mean much to one who had had no botany but even with the little botany I have had that was exceedingly interesting. It is this kind of information which Dr. Cook had in mind when he suggested a desert arboretum as a part of White Sands National Monument.

"I am passing this proposal on to you for whatever it may be worth."

.....

This suggestion of Dr. Cook's which Dr. Kent has sent to Tom is packed full of interest. You know Tom over there has some little white mice, and certain other peculiar forms of life that have peculiarly adapted themselves to that pure white environment. A question of whether or not introducing an arboretum here and there in the area would disturb this strange condition of animal and plant life arises here. Also there is the problem of introducing some forms of plant life not exactly native of the White Sands locality. This idea carried out with reference to everything that could be considered native to any given locality would be a worthy project. This is a problem for both the Landscape and Naturalists division to consider.

The Boss fishes a letter out of the mails coming from Walt Attwell at Bandelier. He asks assistance in solving some domestic problems. Here's his story:

Dear Boss: Mrs. Evelyn Frey of the Frijoles Ranch, P. O. Box 1321 Santa Fe, N. M. has asked me to try to get you to send her a copy of your Southwestern Monuments monthly report..

She has borrowed the Rogers' ever since they have been here and now she has asked for mine. So if you can add one more to your colossal list, I know that the Frey's will appreciate it.

Now don't think that every silver cloud does not have a dark lining because I have a complaint to make against it. A few weeks ago my mail from home was seriously delayed and Bunnie comes out with an excuse that is water tight for not writing. I am sending you the first page of her letter so you can see how she has neglected me just to do like Mr. Albright used to do and that was "Read the S. W. Report first". So Boss, in the future please send it to her just the day after she writes me instead of the day before." Walt. (In the letter enclosed, Mrs. Attwell blames me for her neglect to write Walt on the usual time, and the Report caused it all).

This completes about all the Boss left with notations on to include in this Supplement, and some things he didn't leave.

Civil Works Programs have been approved. The brief period of work prescribed makes it necessary to push our end of organizing the work with utmost speed.

Please see Supplement of Report for last Month, last page, for letter Henton wrote Mrs. Udall to which the letter of Mrs. Udall in this Supplement is an answer. ****

Before another Supplement appears, Christmas will have rolled around. Therefore now is the proper time to both officially and personally extend best Christmas Wishes to our Park Service people both in Washington and in the Southwestern Monuments field. Thanksgiving has passed quietly and from reports coming in, Turkey Soup as a part of the daily menu is beginning to disappear:-a sure sign Christmas is just around the corner!

Cordially,

R.H. Ross.

R.H. R

The Boss

A last word from the Boss.

Dear Chief:

Hugh and I drove 420 miles yesterday coming in off a field trip, and caught the monthly report still on the press, so I will put in a last word; not that what I have read of the report is not all right, but I just can't pass up the chance to put my ear in.

We have just been over to visit Tom Charles and line up a road and get organized to start work. Chuck Richey and Ruth came down from Platt and Walt and Lyle Bennett came from Randolier and Hugh and I drove 420 miles Monday and climbed over Tom's Gyp outfit Tuesday and drove home yesterday. We all held two long Bull Sessions, which go by the name of conferences in the other Superintendent's reports; Monday night and Tuesday night, covering considerable territory and really clearing a good deal of ground.

We came pretty near having a rain over there Tuesday and I would have given good money if he had, but Tom's gods were kind to him and took the clouds back again after putting up a lot of them.

We found the percentage of error on a couple of our boys too. Hugh looked into a couple of abandoned wells out at the White Sands and reported that night that they were forty feet deep. Tom had told us water was only about five feet deep at that point and when we called him on it, he said those wells weren't but ten feet to water. Next morning when we all went to them and checked up on them we found the water to be at a depth of twenty feet. Walt figured that Hugh was all right, because there were two wells, which would make forty feet. These high-ball Engineers can always make the figures fit the facts; did you ever notice that, Chief? I might add right here, that Tom's error is a fluctuating one; you might think from the above that you would have to multiply all his figures by four, but if you did that on his attendance record, you would have to divide the result by something between nine and fifteen.

In drifting around, I find that the popular idea in Arizona and New Mexico is to distribute the Civil Works money on the basis that any work that comes out of it, is net profit. I'd like to rise to remark that in our end of the Civil Works expenditures we are expecting pretty close to the usual dollar and a quarter of returns for every dollar invested. I wish every man in the Southwestern Elements would avoid this 'come easy, go easy' philosophy. When these times pass, as they are sure to pass, make no mistake about that, there is going to be a long dry spell in the construction field among our Elements and you will be looking back with regret on any dollar you have out. It is true that in the process of gearing an organization, which was once expending about \$60,000 per year up to an expenditure of nearly \$100,000 per month, there is going to be some 'end-shake'; like Jackson of Montezuma, we have all made one mistake in our lives, another one might be excused, but anything like wilful waste will not be excused, and you'd better not be caught off your base in this matter when the inspectors

come around, and if you think those CWA and ECW expenditures are not going to be aired again and again in the next couple of years, you don't know the past history of the United States.

- - - - -

Bob left out a most important report which I will incorporate here; Bunnie Attwell really wrote: "I have been delayed answering your letter all on account of the Southwestern Monuments' Monthly Report. You see it arrived yesterday morning and, of course, I had to stop all work until I had read it through, cover to cover, and when I started the letter this morning, I lost another couple of hours reading it again. So you see it is all the fault of the Boss' report. This same report a year ago told about our trip through the Southwestern Monuments when he had that wonderful trip with the Boss, and what memories I have of it! I enjoyed it more than any trip before or since. It surely was one of the happiest experiences of my life and it will always be a delight to think about it."

That's the way we sell a customer on the Southwestern Monuments, Chief, and when we sell them, they stay sold, too.

- - - - -

This incursion into the realm of fancy, which we call our Monthly Report, is about to reach the deadline as to its subscription list. It is going to be too much of a problem if we let it go over a hundred copies. However, we want to assure Mrs. Frey that she falls within the 100 mark, and will get her copy.

- - - - -

We are moved to remark that in all this rush and jam of ECW and CWA, there ought to be no let-down in the quality of service which is being delivered to the visitor of the current day. Don't forget that Mr. and Mrs. Doc may never come this way again and, regardless of how mad you may be at something we have or have not written you out of this office, remember that your other Boss, Mr. and Mrs. Doc, are not to suffer because of it; they are entitled to the usual brand of service in unusual times.

- - - - -

We have increased the headquarters staff by a trifle of 130 pounds, called "Brownie". She is a sister-in-law of the Park Service, being a sister of Mrs. White Mountain Smith, and Hugh says she is going to make good in his office. You will probably hear more and more of her as the work piles up on us, and, since she is the official stenographer and assistant bookkeeper, you Custodians and Landseepers and 'High-ball Walt' can put all mailing errors, both of omission and commission on her head and the rest of us won't mind.

- - - - -

Chief, the real high spot of the month was a couple of hours visit with Mr. Albright. He dropped in here on his way from Los Angeles to Carlsbad, and it was certainly fine to see him again and gossip about one thing and another,

and I want to pass it on to the fellows who make up the monthly report that he said he always ready our Southwestern Monuments Report and that his heart was with us down here on the front line, for we are at about that stage of pioneering that the whole Service was when he came with us in '16. He sent his regards to all the Southwestern folks.

Which brings us down to the final end of this November report. I wanted to get something in the way of an expression out of the Chief Clerk into this report, but he has three days of work piled up on his desk, and he is likely to woof! if I go in and say anything, so we will let that pass.

Cordially,

The Boss



We Do Our Part.

Maximum hours,
70 per week.

SOUTHWESTERN MONUMENTS

AREA

10
Arches

520.24 59 MI.

Natural Bridges

Painted Bridge

UTAH

7
Pipe Springs

8
Hovenweep

9
Yucca House

4
Great Sand Dunes

12
Navajo

10
Altec

Four Corners

Capulin 10

11
Canyon de Chelly

12
Chaco

13
Chapatti

14
Pandelier

15
Montezuma Castle

16
El Morro

17
Gran Quivira

18
Casa Grande

19
White Sands

20
Petroglyphs

NATIONAL PARK SERVICE
LIBRARY
CANYON DE CHELLY
NATIONAL PARK

7

1

1

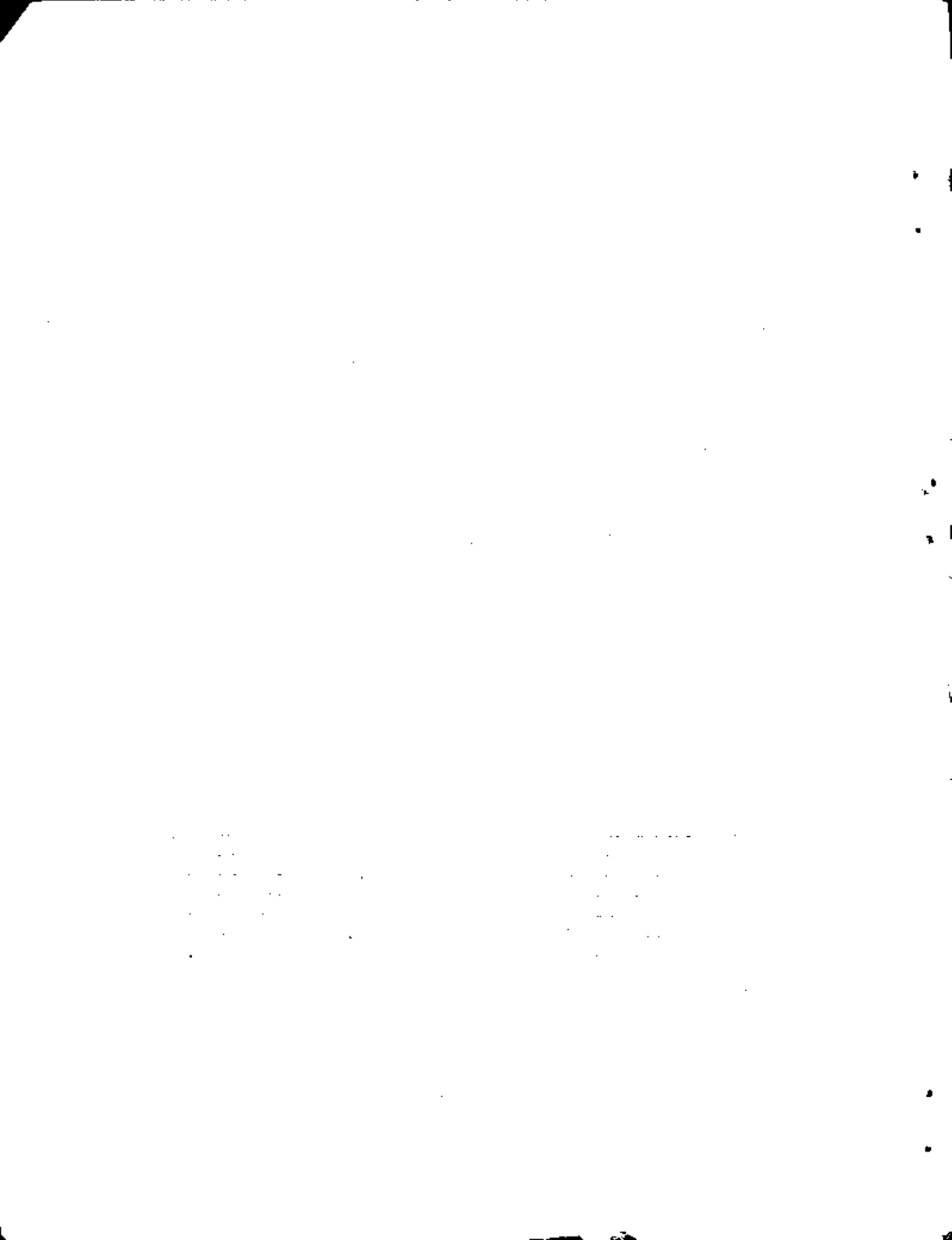
The Southwestern Monuments Monthly Report for December, 1933

Contents

Arches-----	1-6	Pipe Springs-----	17-19
Aztec-----	7-9	Tusasacori-----	11-12
Bandelier-----	19-21	White Sands-----	10-11
Capulin-----	13-14	Eupatki-----	12-13
Casa Grande-----	25-33	Bob Rose-----	35-36
El Morro-----	1-6	Walt. Attwell-----	34
Gran Quivira-----	15-17	Laurens Cone-----	35.
Montezuma Castle-----	16-17		
Natural Bridges-----	23-24		

THE SUPPLEMENT.

Museum Objectives-----	Bob Ross.	A-3
Hugh Miller, suggestions-----		K
Ten Ch. rics' Publicity-----		K
Personnel in stars-----		L-K



UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF NATIONAL PARKS, BUILDINGS AND RESERVATIONS
SOUTHWESTERN MONUMENTS

January 1, 1934.

The Director,
National Parks, Buildings
and Reservations,
Washington, D. C.

Dear Mr. Director:

Another month has slipped around and again we gather the reports from the Southwestern Monuments and present them for your inspection.

You will note that the weather has been fine throughout the district and it was fortunate for us that it was so because with an early winter we would have been terribly hampered in getting our Civil Works programs under way and in some places it would have been impossible. With the desert gods in our favor we are rounding into action and, when I consider the especial handicaps under which we labor in our particular field of the Park Service work, I am rather surprised that we have done as much and done it as well as we have in the short time that has elapsed since we have been given the word to go.

We will probably not be able to expend all the money we have set up by the time the dead line of February 15 strikes us, and I am not worrying about that so much as I am that we shall show actual results for the portion we do expend. As I told you last month, in expanding from a normal expenditure of \$5,000 per month to one of \$100,000 per month we are likely to have an end-shake here and there, but we are corking the holes as we find them and I am really pleased with the efficiency the organization is showing.

I think the individual reports from the various monuments will prove very interesting to you and the other readers of this report this month and you must remember that most of these men have stopped in the middle of a mountain of new work to get these reports to us on time. They are rising to their increase of toil and troubles in a mighty fine way.

EL MORRO NATIONAL MONUMENT. E.Z. Vogt, Custodian. Ramah, New Mexico.

Mr. Vogt, being the first on the ground, is given the order of preference this month and leads the reports:

"The past month has been a notable one around the historic old rock of El Morro. Things have happened which one familiar with these

silent places would never have dreamed could happen.

"The Civil Works program for this Monument got started off with a layout of greatly needed improvements and equally needed employment.

"I wish there was a way to get the word through to the President himself so that he would know what a wonderful far reaching effect this work has had on this whole country in western New Mexico. Before the beginning of this work there was so much idleness, dark doubt, want and desperate living, struggles which kept many a person awake through the night. When the first word came of the proposed program, along about the middle of November, many took hope but few believed it until they were actually put on the job.

"Now, by careful selection of heads of families whom we knew to be hard pressed, the whole region has taken on a new life. Not only have they been benefitted but the money coming in through their labor on this Monument, but it goes on its way blessing all the community. The cow man who has plenty of cattle but cannot sell his steers finds here an outlet for an occasional steer butchered and sold in quarters to the workers; the poor widow whose chickens produce unsalable eggs, finds a market for her eggs; the stores all begin to move their stocks and collect their accounts; children get shoes, school books, clothes, toys and Christmas candy. Everybody is happy and full of life and clicking along like a wound up toy planning for the future. Those who read and observe the progress of affairs marvel at the comprehensive plan of the President, the sustained determination and the great courage with which he pushes things over the top. That everyone is behind him to the man goes without saying. We pray for the success of his program and for his personal welfare and good health.

"Mr. J. B. Hamilton, of the Engineers, came in here with Mrs. Hamilton on December 7th and started the work with D.B. Clark, a competent local engineer from Gallup. Two chain men assisted Mr. Clark in surveying the boundary of our 240 acre Monument. Considerable difficulty was encountered in locating the official corner rocks of the section; in fact even with the official notes which Mr. Hamilton brought back with him from Santa Fe there was not sufficient information to enable Mr. Clark to satisfy himself about our lines. We have written to the Field Division of the General Land Office for the notes on other cornering sections and these may clarify the situation.

"Mr. Hamilton and I looked over the entire Monument carefully viewing the problems of preservation, erosion control, trails, tourist control, etc., but made no hard and fast decisions until we were joined by Mr. C. A. Richey who came out with Mr. Hamilton on the 11th.

"Meantime, our employees, secured mostly through the County Re-employment Office, began to arrive in wagons with camp outfits, some on horseback and a few in old cars and trucks without licenses, for our ranchmen have been so poor that out here in the sticks they have been unable to

buy licenses.

"Each group went to work fixing its camp, some with tents in well chosen tree shelter, others who had no tents under the friendly shelter of the overhanging cliff way to the south side of our grounds. Fires were started while shelter was devised and others started to melt snow in buckets for drinking and cooking water. In a short time the fires had burned down to coals upon which they cooked the meat, potatoes and beans and made biscuit and tortillas in dutch ovens. By night all were very comfortable and happy around their fires. Each man brought his ample bed rolled in cowboy bed sheets or tarps. All sleep on the ground on piles of pine needles or sheep pelts. None have cots or beds and are accustomed to go to work in cow camps, sheep camps or lumber mills in just that way. Our entire crew is made up of men of the west who have worked with live stock or hunted gold through lonely regions or tried to eke out a living on a section of homesteaded land.

"I personally am very glad of the type of man we have in this crew since they are go-getters for work, happy under any condition and able to maintain themselves against all weather conditions, be it a two foot fall of snow, hail, rain or sunshine. Our weather has been for the most part just a lovely parade of perfect days followed by clear, snappy nights with millions of stars coming down close to us. No disturbance except now and then a plane of the Transcontinental-Western Air Line upon whose air route El Morro is located, but the planes fly 'high, wide and handsome' through here and do not come low except occasionally.

"Our first work was to get the road approaching the Monument in shape so that we could get in and out. The wash of rains for several years with no work at all done by the county or state had left our Ramah-El Morro stretch of eleven miles so bad that we feared a snow might fall, cover up the holes and high centers and thus leave a road which would be difficult to follow with light cars and dangerous for laden trucks which readily get hung up in such places under our usual winter conditions. In four days with a crew of about ten men we were able to put the road in condition so that the distance can be driven without shifting gears, though we still have some of the bumps with us.

"Our clerk, Lon. P. Fletcher, arrived on the 14th and has taken hold with good initiative, loyal cooperation and painstaking care as regards payrolls, records and filing.

"After re-visiting Grants, where our re-employment committee lives, we managed to get lined up in such a way that we soon had a well selected crew of 30 men, which has now been brought up to 40, and we still have 18 to go.

"Under the guidance of Mr. Hamilton and Mr. Richey we planned the check dams in the three deep arroyos which had washed into our terrain to the south of the cliff.

"It took Mr. Richey and Mr. Hamilton and myself a long time to look over the possibilities of erecting a headquarters building. The mere location of it was a problem which took a great deal of thought. In the discussions which went on between Mr. Richey and Mr. Hamilton I learned a great deal about the many different angles which entered into such a problem. I have tried to be alert so as to keep up with some of the 45 high-power men one comes in contact with through the Park Service but I often find myself standing with open mouthed bewilderment when I try to follow their thought.

"It now seems that the best location for such a building is in front of the deep rincon on the north side of the Monument west of the inscriptions and pretty well up against the timber." With a proposed spur road coming in from the highway north of our line, Mr. Richey and Mr. Hamilton thought this location the best from every point of view. It gives us one man control of visitors with the greatest chance of showing them the complete circle of inscriptions, pictographs and both ruins.

"The trail to the ruins on top of the great mesa was mapped out and Mr. Clark surveyed and staked it upon which men went to work right away. By commencing on the shady side of the north slope we hope to finish the trail before we have the storms which we are soon due to have, thus leaving the sunny side for the more inclement weather. The north trail is now about half completed in point of time needed to do the work and about three-fourths of the distance. A great deal of chiselling work and heavy work with bar and pick is necessary to get a good grade and adequate drainage.

"We have found a good place to quarry rock but will not begin this work until after the first of the year as we have several days work on the hardest trail. The check dam work is now finished as far as it is laid out.

"Fifteen check dams of a very substantial nature were built. To effect a saving in both money and time we used the old cedar posts in our fence, now some fifteen years old, for retaining walls above and below. The old wire of the fence we used for tying these timbers together, then with great fills of dirt, lava rock, and brush, the dams were constructed of sufficient width, height and strength to stop any floods the short run-off will ever put onto them. In doing this work we secured all of our materials in the way of brush and rock off the Monument and in hauling them we tried to get it done with the minimum amount of damage to our wonderful nest of grand old.

Two of the men were put to work to clear out the vacant portion of the ranger cabin which Ranger Peterson used for his garage. The sacks of cement were brought for storage to ry house and we found dry places for the rest of the material. By the time that was done one of the men arrived with the 1,500 feet of lumber brought from a saw mill 70 miles away. Immediately the office was started, followed by the blacksmith shop next to it. So we now have the cabin, the office and the shop all in a row

and all in use. We next made a drawing table for our engineer and a table for our clerk with cubby holes and filing places. Not even a chair has been purchased. Our versatile blacksmith made the door hinges for his shop and is now busy fashioning rock chisels, sharpening picks, bars, and getting all tools in most efficient shape for finishing the trail and quarrying the rock.

"In the way of tools, we have insisted from the first that all men coming to work would have to bring axes, picks, bars, hammers shovels and spades and be prepared to furnish scrapers, chains and other tools which they owned and which would help us keep all the money possible for wages. In this way we feel that we have saved a good amount of money, though we found that we would have to buy rock sledges, heavy awls, a few wedges, tool steel and handles. I do not think that our tools will run over \$75 for the entire program of work since so much has been furnished by the men.

"Owing to delay in arrival of blank checks at headquarters, our pay checks did not come and in the emergency we managed to borrow the money for paying off the men from one of the Gallup banks. I took in the pay roll and my clerk got back just as we were breaking up the work for the holidays. Our men live from two to eighty miles from their work, all camp on the job, so that in view of the approach of Christmas and the suffering some of the families have been through I thought I was justified in getting the money to them so they and their families would not be disappointed.

"All camp material, tools, and even the ink, which might freeze, have now been carefully stored with one man on the job to watch over every thing while the balance of the men have left for their homes. All were in fine fettle when they left, exceedingly glad to be able to work again and genuinely interested in shaping up El Morro so that it will be more attractive and more accessible to the great American public. Men will be back to work on January 1 and will spend that day getting their camps set up, food simmering, and be ready to hit the ball on the second of the month.

"We have requisitioned the balance of our forces leaving open the places for the archaeological party you wrote us about. We look forward to the arrival of this group as well as for the return of Mr. Richey who will be back with plans and maps for further work. Mr. Hamilton visited us again on the 21st in order to keep us from going too far astray in our work. Together we drove around to the west side of our formation and entered the box canyon, coming well up with the car until it got so rough and wild that we had to go the considerable distance still remaining in the box on foot.

"It had been some time since I was up there and I had forgotten how really wild and unspoiled it was. It is so sylvian, so secretive and so beautiful that in discussing the proposed fencing on our west boundary we fell to wondering if we should leave a gate to the enclosure. Perhaps

it would be all right to leave a gate with a heavy chain and lock on it. Thus we could reserve the key for only the appreciative few, the students, or the honey moon parties who are wont to sleep in caves and in sheltering arms of the canyon, - - there's plenty to think about there.

"Some erosion and so much dead timber at places that some of it should be cleared out. Great pines, forced down by the heavy fall of snow in November of '31 add nothing to the landscape though some of the dead standing pines might be left. The erosion in the canyon is nothing serious. We looked up to where the prehistoric trail comes down from the south rim, but it was covered with a light snow and could not be spotted with the eye.

"The Navajo family living down that same canyon looked with wonder at the surveying, the cars, the bustle of the men and seemed uncertain what it was all about. I intend to visit them soon and explain our activity.

"Mrs. Vogt sent a package of candy out to each of the men on the crew before they left for their homes.

"We are going to send you some pictures of the trail work, our Civil Works headquarters, the erosion work and the camps so that you may see what we are doing. We hope they will give you a desire to visit us and that you will be coming over soon to give us the once over.

"With the greetings of the season to you and yours and the entire personnel of the Park Service as well as for the men who are a short time in our employ, I am, sincerely yours,

E. Z. Vogt."

"P.S. I forgot to tell you that I had a fine visit with Mr. Albright who spent several days at Santa Fe in the early part of the month. He seemed more carefree than in the old days when he was carrying so much responsibility and is very happy in his position with the U.S. Potash Company.

"During the holidays I am planning to get up the map and description of the Ice Cave region some 20 miles east of El Morro. Many people think that this should be included in our Monument. I am anxious at least to set forth the data I have gathered so that it will get proper consideration."

(I might interpolate a paragraph here, Chief, and say that the Pictures which Eazy mentions in his report came through in good shape and give one a mighty good idea of what he is doing. It has been more years than I care to recall since you and I visited El Morro in that old Dodge of Bill Turner's. Why not plan to drop off a day in Gallup when you are in this country next summer and have a look at the place again? You will find it hasn't lost any of its original charm because of the work the boys are doing there this winter. Think this over, won't you?)

AZTEC RUINS NATIONAL MONUMENT. Johnwill Faris, Custodian, Aztec New Mexico.

Johnwill turns up this month with a very good report as follows:

'Dear Boss:

Visitors for the month totalled only 88. The weather has been ideal and I have no reason to offer for the small number of visitors. We have, however, been very busy without any visitors and even though few do come they have been given every consideration and we appreciate the lull in this line. The early part of the month was spent on Public Works projects and the work under that head progressed with as satisfactory results as could be desired. On December 6th our entire Public Works crew was shifted to the new Civil Works program and of course we are working under that head at the present time.

"Your new set-up of Archaeological Reconnaissance work under date of December 15th has been completed with Oscar Tatman foreman of that division. His aides have been selected with every care and both yourself and Bob Rose have our assurance of the fact that this work will progress with every care and Mr. Tatman will personally see to its being exact from every standpoint. Mr. Tatman reports somewhat as follows: "My work has been under Project No.4, or General Clean-up. The ruin walls on the East, North, and West have been practically cleared of debris and this work has progressed much more rapidly than we normally could expect. The building stone was saved and the dirt is taken to washes and low spots for proper levelling and landscaping. In the court of the ruin all debris has been removed from around the Great Kiva and other stones and refuse carried out and disposed of as indicated above. The stone has been sorted into three classes: refuse, rough stone and facing stone. Refuse or disintegrated stone is discarded, the rough stones and facing stones are saved for ruins repairs. Some two thousand nine hundred wagon loads of earth have been hauled away to date."

"Mr. Thompson, my other foreman, reports as follows: 'Project No.1 is well under way and by the end of next week it will be practically complete. This project was the removal of a barn from the Monument. Little difficulty was encountered in bailing the hay and not nearly the trouble we expected was encountered in tearing down the old barn. While many of the boards will have to be replaced, the percentage is small in comparison with what we had expected. Project No.2 has consisted primarily in the entire removal of all interior fences and it remains only for the San Francisco Office to give us approval on the type of fence which we are to erect on the boundary of the Monument. Until this approval is received we cannot complete the project. In this connection we are telegraphing them in hopes of getting complete authorization for contracting this fence by the first of next week.'

"Project No.3, Mr. Thompson reports, is probably his greatest problem. This is levelling on which frozen ground has been the greatest draw back to date. In the early mornings it is practically impossible to do any plowing and luckily the late afternoon makes it possible to plow some and this earth is worked the morning of the following day. Mr. Borg and Mr.

Bell are assisting Thompson in the grades, cuts, fills, etc. and the worst of the dirt work will be finished in the next two or three days. Tuesday we hope to start on the curb around the island in the parking area. I might add that it is quite unusual to be able to plow at all this time of the year and we are indeed fortunate to have completed plowing almost the entire monument and of course getting the benefit of the winter freezes and thaws.

"Project No.4 of course takes in the entire Monument. Mr. Thompson's work in this connection has consisted primarily in cleaning away all dead brush, leaves, sticks, and other trash; raking various areas and the debris has been disposed with rusty and useless wire, in numerous washes for erosion control. Mr. Thompson mentions that Tom Marcott has been his chief aide and he finds his work very satisfactory. He adds a word for his men, saying: 'I find almost to the man they are a very willing crew and as for Oscar Tatman, it is a pleasure to work with him.'

"Mr. Berg has been in charge of our survey work and he gives us the following report: On project 1 a new barn location was made on the Abrams property. It was located east and west with the shed to the south on a site designated by Oran Abrams. Cross sections were taken in calculating the yardage moved in levelling for the building.

"In surveying the boundary for the new fence, angle points were dug in the boundary for the purpose of finding permanent markers. Only one was located. The old fence lines appear to be only approximations of the actual boundary. Early in the month a preliminary line was set for the north boundary to make a plowing line for clearing up areas in that locality.

"Two locations were made in attempting to fit the parking area of the Master Plan on the ground. The advice of both Mr. Hickey and Mr. Hamilton was followed in the final location. Mr. Berg has given us a location map of this parking area which I am including with this report. Stakes were set, hubs were offset and elevations set to the nearest hundredth, vertical curves were set around the curb on both walks and islands.

"On project 4 Mr. Berg set grade stakes in the picnic area, relocated a marker disturbed by plowing, and checked levels in every possible way.

"This more or less completes the reports from my various men and we will now deal in generalities.

"Under date of December 15th we have a very pleasant letter from Governor Hockenfull thanking us for our cooperation offered in his program of advancing the various state attractions.

"To fill one of the positions in the archaeological Reconnaissance party it was possible to fall back on one of our loyal friends. A University professor who had visited our ruins last year was contacted and he

personally arranged for a Mr. John B. Smith, graduate of the University of Oklahoma and taking a special course at the University of New Mexico, to do our drafting. It is certainly a pleasure to know that the Monument has persons who are willing to go out of their way to help us when help is most needed. In this connection I would like to add the fact that the San Francisco Office has certainly cooperated in every way possible. Mr. Kittredge has personally considered our problems in detail and with his efficient assistant, Mr. J. B. Hamilton, we have no worry from the standpoint of engineering. Tom Vint, as busy as we know he is in Washington, has considered several of our problems and we have letters to this end.

"Under date of December 12th you refer to a change of set-up that I requested as probably not being logical. Had I been functioning properly I would have changed this request for after all our original set-up is probably better fitted to our needs than my revised set-up would have been.

"Confirming our telephone conversation, bids were gotten out on Standard Form 33 for 1,700 sacks of quick setting cement. We hope to have delivery on this order not later than January 6th and the entire wall and curb will be a reality shortly afterward. I mentioned the fact that city paving was to be contracted December 28th and we sincerely hope this will prove a decided advantage in the laying of our parking area since it is probable that proper equipment can be rented which could normally be almost impossible to obtain.

"In closing, let me say that we appreciate the cooperation and help we are getting from your office. Without this, our entire program would be absolutely impossible. Please thank each member of your staff for the various members of mine.

Cordially,
John Will Faris."

"P.S. Boss, this report goes out at 11.20 p.m. and my new girl who has joined us since my regular stenographer joined the archaeological party, did not kick one bit. We are having a great time and are enjoying every one of the 14 to 16 hours a day of it. You know my typewriter and its period so don't blame the girl as this is her first time using it."

John Will does very well, Chief, to mention that willingness of the crew, from top to bottom, to hit the ball. I have noticed it all through this Civil Works program in this district and have been a little puzzled to account for it. It is more than the simple matter of being glad to have the work. The best I have been able to figure out of it is that, while nobody will put it into so many words, there is a feeling that the Country is in a hole and the President has done such a thorough job of taking hold of the situation on his end that the least we can do out here in the field is show him we are for him from sock to hock and we are not just rooting from the side lines but are willing to get in and hold their end up. At any rate, these gangs on our Park Service jobs are really hitting the ball instead of just killing time with a pick and shovel.

WHITE SANDS NATIONAL MONUMENT, Tom Charles, Custodian, Alamogordo, N. Mexico.

Just because he got in early with his report and to keep him from having to take page 13 again, we are going to give Tom space right here after Aztec. Here is his report:

"Dear Boss:

What a riot! No said there 'ain't no Santa Claus'? This White Sands infant was evidently unexpected. It was born into the official family without a rag of appropriation. We are probably indebted to the 'salubrious climate and delightful atmosphere' of this Valley for the child's existence to toddling age. On account of the kid's extreme beauty a rich uncle has now endowed it with a small fortune. No wonder the family gathered in to see it this month. Dad Pinkley and a host of good looking brothers and sisters swooped down upon us with plans and specifications for dressing the youngster up. You should have seen those kin-folk! This is a pretty baby if we do say so or shouldn't. Chuck seemed to want to do his best to put on a curl here and Walt to add a curve there. The 'nominal Custodian' had never seen any of these brass collars before. No wonder we were excited when we drew all the big guns at once. There was the boss, Chuck and Ruth, Walt, Bennett and Hugh Miller. About the same day we had word that a new daughter-in-law had been inveigled into the Charles family by the B.P.R. member of the group of four boys. All this is why the 'Nominal Custodian' forgot where he parked his car one day and his judgment was a little warped at times as to deep well measurements, etc.

"Here are some impressions:

Miller:- "Wait a minute! What I want to know is; where you going to get the money?"

Chuck:- "I'll look with disfavor -"

Walt:- "Yes, that was a pretty bridge - rich manure color!"

Bennett:- "-----!"

The Boss:- "Gentlemen; are we all agreed?"

"Embarrassments:

Sands like the Boss has an uncanny way of finding the weak spots. For instance, he insisted on putting the new road out to Miracle Point and the Giant Tracks and I had to admit that they are not even on the Monument! Neither could I side track Chuck Richey on the matter of the Red Lakes. He asked more questions about those lakes than the oldest settlers in that section could answer. I had to admit that 10% covered my knowledge in the matter and 90% was about what I didn't know.

Another embarrassing moment was when Walt, skimming over the Sands at about 60 miles per hour, would yell: 'Is there a hill in front of us, Tom?' How could I know if there was a hill? The gentlemen should have had a periscope; without it, good breaks were all that saved us.

"Water.

"Two feet of good water in a six foot hole. That is the report of Prof. Botkin, of the State College, on our test holes for water. The good water is within a half mile of the proposed entrance to the Sands.

The water is a little hard but that is caused almost entirely by lime.

'The Count.'

"It's uncertain. More uncertain, I believe, since I heard the Boss' remarks on revamping of the count at National Parks and Monuments. I really cannot tell you how many visitors we have had. On my last nine trips to the sands I have met an average of ten cars in twenty minutes. The most on any trip was fourteen and the least was six. I do not care if you divide that by five or fourteen or multiply (Killer measurements) just so you remember that thirty cars an hour for ten hours a day, with five people to the car, indicates that we have something like a half million visitors through the White Sands National Monument yearly.

"Speaking of Attractions:

"It looks now as though the wild ass of Asia or the Congressional variety have nothing on us. Investigators say that we have hundreds of wild asses out in the Sands, which are 'paint' in color, so fleet of foot that the fastest horse cannot turn them, so intelligent that they will dig down a foot or more for water with their front feet, so fierce that the best of the cow men do not care to contact them.

"Our project seems to be coming about right. We wish you all a very Merry Christmas and a Happy New Year.

Tom Charles."

You might know Tom would spill the beans by his quotations from one of those Bull Sessions when we were trying to put them over on you as a series of "contacts" which amounted to a "conference." Our water-survey crew has found water only four or five feet beneath that proposed parking area where the road will enter the Sands, and do you know what Tom wants to do? Dig a lake there! And I bet, if we don't watch his vouchers he will ring in seventy-five gallons of red dye on us and we will discover a red lake right out there on the road!

By the way, we got hold of a good yarn over there in Alamogordo. The Alamogordo Chamber of Commerce got hold of a dandy film of the White Sands which is mighty publicity for the town, and started it on its way across the country. Then the film got lost and they mighty near never found it and when they did they learned that Tom Bales had gotten hold of it and tacked on a few hundred feet of pictures of that enlarged Badger Den he has charge of and it was sailing under a Carlsbad Cavern title!

TUMACACORI NATIONAL MONUMENT, George L. Boundey, Custodian, Tubac, Arizona.

Mr. Boundey reports as follows:

"Dear Mr. Pinkley:

"We had 1134 visitors for the month of December. Thirty-four states and five foreign countries were represented. The nights were cold but the days have been warm and sunny throughout the month. The winter birds from the north came about three weeks earlier this year but

quite a number of our summer birds have not yet left for the south.

"We are anxious to get the work under the Civil Works program started at our Monument but have been delayed up ~~the~~ to the present for lack of an engineer to lay it out.

"Due to several Government projects under way at Nogales the business men report the best Christmas trade for the past three years. We had about a hundred visitors on Christmas day and a few of them were sober.

"We are receiving such poor service through our post office at Tubac that I am considering if it might not be advisable to have our mail come out by stage from Tucson. By Tucson stage we could get our mail 24 hours earlier.

"The thousand men being housed in the old army barracks in Nogales have been put to work building a road from Fort Huachuca to Nogales. This will shorten the present road and will bring considerable of the east traffic by way of Nogales and the Mission.

"We wish to take this opportunity to wish the whole force a very Happy 1934.

Sincerely,

George Boudney."

WUPATKI NATIONAL MONUMENT. Dr. H.S. Colton, Custodian, Flagstaff, Ariz.

Dr. Colton has the following report to make for the month:

"For the first two weeks of December Mr. TenBroeck Williamson and Mr. James W. Brewer, Jr., were employed by the Museum of Northern Arizona to test the dumps for C.I.A.A. Project 10. On December 15th, the Custodian took fourteen men to the Monument and established a camp in the canyon below Wupatki, and out of sight of the ruin. Work was begun the next day on the sight. Trenches were run to test the depth of the debris. On the eighteenth the company was brought up to twenty men.

"The Museum supplied four portable houses with stoves and built a kitchen and mess hall twelve by thirty-six feet to give shelter to the men. The Forest Service loaned their small house one half a mile away for an office, which is used by the draughtsmen and the clerk. A few of the men are lodged in Rooms 44, 36, and 36 of the ruin. The Museum has rented to the expedition the Museum 'pick-up' for the Foreman, and the trailer to carry water to the site for reconstruction purposes. The Museum has also loaned the expedition their plane table, alidade, etc.

"The Wupatki Expedition, as organized, consists of:

J.W. Brewer, Jr., Foreman.

Ten Broeck Williamson, Assistant Foreman in charge of archaeology.

Richard Vrankenber, Assistant Archaeologist.
J.C. Fisher Motz, Assistant Foreman in charge of reconstruction and Survey.
14 laborers, a clerk, and a carpenter's helper.

"On December 26, the Walnut Canyon Expedition took to the field with Mr. Dale S. King, Foreman and Archaeologist, with five men. On Saturday, December 23, the Custodian with Mr. King, visited the Walnut Canyon and found the conditions there, due to the high altitude, impossible for work. Snow covers the entrance trail and the shady sides of the Canyon walls. The road into the Monument was almost impassable with mud, and there is no water or shelter. Therefore, with the permission of the Superintendent of Southwestern Monuments, the party was transferred to the Citadel group of ruins, seven miles from Wupatki, on the Wupatki National Monument, in a lower altitude. The men are based on the Wupatki Camp and the Museum of Northern Arizona has constructed two portable houses to give them shelter. The men are using the Wupatki mess.

"On the day after Christmas Mr. Irwin Hayden, and his son, Julian, arrived and the next day they set out for Kayenta with Preston Coston, to take over the archaeological work at the Navajo National Monument, with John Wetherill.

Harold S. Colton".

From far distant Copulin comes this monthly report from Mr. Farr:

COPULIN MOUNTAIN NATIONAL MONUMENT. Homer J. Farr, Custodian,

"My dear Mr. Pinkley:

In making this report of the activities of Copulin Mountain National Monument for the month of December, 1933, I wish to state our weather has been the warmest for December in more than 25 years. I note that the cones which contain the highly flavored pinon nut are now budding out as large as a lead pencil and are full of the tiny nuts. In parts of this country the peach trees are reported to be in bloom, which is something never known before to the earliest inhabitant. We hope to suffer no extreme punishment for all these errors of our kind weather operator.

"On the 18th of this month we enjoyed a friendly but very brief visit from Mr. Walter Attwell, our genial Engineer, and his party of four, Stuart, Williams and Lyke, all of whom exhibited more pep and energy than the Custodian could match by their climbing this old mountain of volcanic eruption and surveying a circular trail from rim to the bottom of the crater and completely around the crater on the very brink of it. Engineer Attwell came within ounces of being pulled over into the crater by the surveying chain which had hung on a boulder of lava; however after a second of hanging on the brink of the crater he wheeled and regained his balance and went his way rejoicing none the worse for the wear or scare.

"Assistant Smoke Lyke, of the party, came near passing out in sur-

veying the rim, which Mr. Attwell explained was caused by his coming from sea level to about 9,000 feet in about forty-eight hours.

"The Custodian had things pretty well in hand as regards our Civil Works program and had ordered his men and equipment, so on the next morning after the departure of the engineering crew at 8 a.m. we were all at work with a crew of twenty-five men. Most years in December the weather would not permit us to work with any large degree of satisfaction, but this winter the weather has been lovely and not a moment's time has been lost. In fact six hours seemed to us rather short, but we have actually learned to take advantage of the six hour day and do as much good labor as before in eight.

"We began operations at the bottom of the two mile road and are working up in order that we might have the road cleared for our own daily travel. By the first Thursday the road was all cleared of rocks, fallen trees and brush. On the fourth day of our labor, George H. Sholly, from Bandelier, by request of Mr. Attwell, brought us a compressed air jack hammer outfit as the Engineering crew had pointed out to the Custodian the need of having about seven of the most prominent points on the road along the east side of the mountain blasted off and the depressions which are on each side of a prominent point, filled with the excavated material. Poor Sholly, after one and a half days of hard labor, decided that the air hammer could not be used successfully in this volcanic material. Sholly resorted to every known method of drilling but failed. This material is very hard to pick or drill by hand but is too crewly to drill by air hammer; however Sholly did his best and got part of the points drilled. We will drill and shoot the rest of them by hand churn drills.

"I never expect again to handle such a loyal two dozen men that can accomplish as much as we have in the past week. However none of them feel that they have been overworked and I believe all will be willing to 'hit the ball' next Tuesday.

"If we could only find funds available to erect a circular retaining wall around our turn-table at the top end of our road, build a retaining wall for about 1,200 feet to prevent material from sliding into the road, survey and fence our Monument with a good fence to eliminate the dozens of cattle which cause so much of our road trouble, erect a good view finder on the very tip top of the trail around the crater, place the Custodian on a regular and very modest salary and get his wife a new dress for Christmas; then I would surely believe in Santa Claus and the depression would begin to fade away.

"Last week the Custodian received from our County Administrator some very, very fine views taken about four miles away from an airplane. They are very good likenesses of our old Volcano and I am mailing one to our genial Superintendent; I only wish I had one to send to each of my fellow Custodians and Superintendents.

"Wishing you one and all a Happy Christmas and a delightful New Year,
Homer J. Farr."

GRAN QUIVIRA NATIONAL MONUMENT. W.H. Smith, Custodian, Gran Quivira, N.M.

"Dear Mr. Pinkley:

"For the month of December we have registered 295 visitors who entered the Monument in 74 vehicles, which shows an increase over the same month a year ago of 70 visitors and 21 cars. Among our visitors were several of our Park Service officials. On December 7th Mr. W. C. Attwell, of the Engineers, with Mr. Richey and wife and Mr. Bennett of the Landscape Division, were with us. They went over the plans for the Civil Works program for our Monument.

"It was agreed to put our road of approach on a six per cent grade for the first two thirds and to run into a 7 per cent for the last third before you turn south for the parking area. They also authorized the construction of a short lap of trail from the parking area around in front of the Mission as shown in the Master Plan.

"Again, on December 10th Mr. Attwell with Mr. Stewart and Mr. Williams all of the Engineers, were here and surveyed the road, staked it for grade, and put the men to work, getting the program started on scheduled time with Mr. C. A. B. Scharf as Foreman.

"The weather has been fine for the last month with bright sunny days and cool nights. This has been the most open weather I have ever seen in this country in the winter season; it certainly is fine for the workers on our Civil Works program.

"The work on the entrance road is progressing better than we expected. The personnel of the crew is made up mostly of dry farmers who are raisers of beans, corn and sorghum. They are good, strong specimens of American manhood, ranging from 21 to 50 years of age. It is easy to tell from their attitude, their merry laughter, and companionable contact with each other, with those in authority and the way they do their work, that they would much rather be allowed to earn their way than to have it given to them.

"We have moved 84 cubic yards of very hard blue limestone that laid in ledges approximately twenty inches thick, a distance of over 125 feet. We have moved 234 cubic yards of sand and caliche an average of about 400 feet. Both of the above mentioned of course were taken from the cuts and deposited in the fills. When we have finished the approach road to an 12 foot highway of a 6 per cent grade we will expect even the historic 'Henry' to gallop up to the parking area in high gear. The above work was accomplished at the relative small cost of \$400, which included some engineering. Considering the rocks and their hardness, moving 318 cubic yards an average of 150 feet for \$400, or \$1.26 per yard is very reasonable as I have known of large contracts in easier ground to have cost considerable more. In conclusion, I feel safe in saying that there has been no waste or incompetence in handling the Gran Quivira Civil Works project. I am well pleased with Mr. Scharf and consider that we are fortunate in getting him as our Foreman. He certainly is able to build roads and handle men, and is diplomat enough to handle some very

grave situations. He has been heard to say that he has never gone into a community where he has been better treated. In concluding this report I will ask Mr. Scharf to add a few words.

Cordially yours,
W.H. Smith."

"It can be said without being officious that Mr. Smith is very efficient and conscientious in his duties both to the visitors and to the United States. He is very interested in getting a good highway to come by Gran Quivira and to get good accommodations established at the village of Gran Quivira to care for visitors who wish to stay and especially for those who want to come and study our wonderful prehistoric southwest. More power to him; he is the right man in the right place.

"Money could be judiciously expended at Gran Quivira for a large museum, a garage, and an administration building as well as for further excavations and repairs to ruins. Within a radius of 30 miles there are at least ten buried cities, insuring plenty of artifacts for a large museum. Having worked for four of the best archaeologists, Dr. J. Walter Fowkes, Mr. Jesse L. Nusbaum, Dr. Morley, and Dr. Kidder, I believe I ought to know a fruitful field when I see one, especially when it is as magnificent as this one. I get almost as enthusiastic as Mr. Smith when we get to talking about what could be done here and how fine it would be for the visitors and what a treasure for the one who would be really interested in the prehistoric southwest. It would be a shame to let these hidden treasures be buried from the American tourists any longer than it will take to efficiently get them out and arrange them in a suitable place for the pleasure and education of our people.

Respectfully,
C.A.B. Scharf."

I just want to remark here that the American Legion at Mountainair, New Mexico is doing its part toward boosting the community. The restaurant men there gave Walt one of their envelopes on which is printed the following: "Mountainair is surrounded by the most interesting ruins of Indian and early Spanish civilization in the Southwest.

"When travelling through here arrange to spend a day or two and visit the Gran Quivira National Monument, which was a thriving town when the Spanish discovered New Mexico, and whose ruins are still complete enough to show the life of these ancient people and the efforts of the Padres to convert them to the Church. Gran Quivira is 25 miles south of Mountainair.

"North of Mountainair is the oldest apple orchard in the United States, planted before the landing of the Pilgrims and still bearing fruit."

MONTAZUMA CASTLE NATIONAL MONUMENT. M.L. Jackson, Custodian, Camp Verde.

"Dear Pink:

"For the month of December, Montezuma Castle has had 1,045 visitors of which number 275 made the climb into the building. Seventeen states and no foreign countries were represented. The weather has been good in

the Valley with a little snow on the higher roads while the Valley roads have been in fair condition.

"We are due to have some activity here for a while. A portion of our Civil Works program was started on December 18th after receipt of approval for a job of archaeological research and repair to ruins. Ten men are employed on this work, under the direction of Earl Jackson, a graduate archaeologist from the University of Arizona.

"Engineer Walt. Attwell arrived on the 20th, with his crew of engineers, and they immediately went to work laying out the different parts of our project which had yet to receive approval before we could start the work. The engineers now have enough of the work laid out to start our full quota of men tomorrow, the 26th, the main project being to improve the entrance road from the highway leading down to the Castle. The work is coming up at a very opportune time, as Mr. R. W. Wingfield, the local relief agent, reports that it is pretty well taking care of the unemployed married men of the district. These men are all approved by the C.W. Administrator.

"We are very glad to get this Civil Works money, as it will catch up a lot of loose ends. We had been wondering for years how appropriations could be had to take care of them, and this work answers the problem. Walt. has assured us he will drop in from time to time, so we have no fear of any engineering problems through the duration of the project.

"On the whole, travel seems to be holding up quite well through the winter, roads are being improved all through the Valley, people in the Valley are at work and are optimistic, our museum collection is being improved, and the Monument is being helped generally, so we are wading into the new year with high hopes."

Cordially yours,
Earl L. Jackson."

PIPE SPRINGS NATIONAL MONUMENT. Leonard Henton, Acting Custodian.
Pocahontas, Arizona.

"Dear Boss:

"A Merry Christmas to you and the other members of the Southwestern Monuments family, and I also wish you a Happy New Year.

"If you folks are having as fine weather as I am you certainly ought to be happy, as this morning, while going around getting an idea on what work I want done next week by the C.W. A. fellows, I kicked up some dry leaves and much to my surprise, found thistles and grass coming through the ground, some nearly an inch high. There has not been a cloud in the sky for a week and the ice that is frozen during the night is gone by noon. This is some different from a year ago when we were under some twelve inches of snow and the mercury hovering around the zero mark for several weeks, and the travel stopped by the heavy snow drifts. I only hope this weather continues so we can accomplish what we have set out to do.

"The travel for the month of December, beginning November 24th and running to December 24th, is as follows:

Arizona, ~~1111~~	252,	passengers,	102 cars.
Arizona -----	148	"	58 trucks.
Utah-----	28	"	13 cars.
Utah-----	37	"	30 trucks.
California----	16	"	8 cars.
California----	8	"	3 trucks.
Park Service---	7	"	4 cars.
La.-----	3	2	1 car.
Horse back riders	60	"	0
Live Stock-----			534.
	~~388~~		
	578	passengers.	222 vehicles.

"Number conducted through the fort, -----29.

"Our standard compared with last month is a decrease in live stock of 641; in passengers, 24; in contacts, 44; increase in vehicles, 17. On the whole the indication is that travel is about normal.

"On the 14th I received a call from engineer Cowell, of Zion National Park, about the Civil Works program, after which I called Superintendent Pinkley about starting to work. Then I immediately went to Short Creek to confer with the local Civil Works Administrator about getting my men. I asked him for eight men on the 16th and eight more on the 18th.

"On the 15th I went to Kanab end, after getting bids on some small equipment from the different stores there, I purchased \$15.43 from the Bowman Mercantile Company. On the 16th Mr. Cowell arrived from Zion and eight of the men showed up. At 9.30 we started work on the road working east from the top of the hill just east of the ponds. Mr. Cowell and myself, with the help of two of the men, surveyed the road from the west to the east boundary. December 18th five more men came in and by December 23rd I had all the sixteen men allotted me for work. The reason that the last eight men were so scattered was that some of the men who were called had other work and new names had to be drawn.

"The past week I have had the men working on the road and cleaning up about the meadow and the tunnel. We had a surprise in digging out the road where we are taking a part of the hill off. After we had taken off about eight inches of dirt from the highest part we began to find cedar and pine logs which had hardly decayed at all. When we reached the 13 inch level we dug up about 20 feet of two inch pipe, 15 feet of one inch pipe and some scrap iron. There were several different colors of dirt, indicating that it had been hauled in at different times and from different places. After talking with some of the old timers about my finds, I found that at one time the troughs for watering stock were about in that place and the timbers had been put there to keep the ground from getting soft and sloppy. I am taking this hill down about 24 inches and putting the dirt in the low place east of the ponds.

"In cleaning out the tunnel, I found that what Bob Roast and I supposed

to be the bottom was only dirt that had fallen in and that the original bottom is $2\frac{1}{2}$ feet or more below that. If we rock up the sides of the tunnel as we had planned it will mean that the upper meadow pool will be lowered about two feet. I will therefore wait until some Landscape man comes in before I rock it up.

"I believe I am getting along fine with the work and will be able to do a lot of good in the way of improvements before February 15th.

Sincerely yours,
Leonard Heston."

I might interject at this point, Chief, the interesting fact that Leonard was the first of the field men to come under the fire with a voucher that didn't need nine different corrections. Most of the boys were so brilliant and so anxious to make dirt fly that they couldn't be bothered with the pages and pages of instructions that Hugh sent out for their education, as a result of which they have been perfectly ingenious in finding and developing the wrong ways of making out papers. It looks like Leonard knew he wasn't real smart about this paper work and of this game and he prayed over those detailed instructions until he has turned in the best papers that have come out of the field. Hugh will have something to say about this a little later on in this report, but he won't say half there that I have heard him say when he open the mail and find two or three new ways of doing things wrong, and it is a poor mail that doesn't bring that many.

BANDELLER NATIONAL MONUMENT. M.C. Evanstad, Acting Custodian, Santa Fe.

"Dear Boss:

"Although I have not kept an absolutely accurate account of visitors for this month, the approximate count is 110. This includes a picnic party which was here on November 29th and which arrived after the November report had been submitted. Today we ran 18 but some days were blanks. The month has been one full of activity except the first when we were in more or less of a dormant state while digesting the turkey Thanksgiving dinner we received at the hands of the army. The entire then existing population of the Canyon were invited to share turkey with the Army, which offer was accepted without undue deliberation.

"Our E.C.W. work continued actively throughout and on the 9th the first car drove down into the Canyon. This honor was reserved for Engineer Attwell and he had with him Mrs. Frey, who operates the hotel known as the Frijoles Canyon Ranch. Mrs. Frey said she had been waiting for this ride for nine years. Although as yet the road is only passable, most of us choose to use it in preference to the 'long, long trail'. Mr. Attwell left on the 14th for a trip which will include many of the Southwestern Monuments.

"The weather has looked quite threatening at times, and twice it began to look as if real serious winter weather was coming,, but it cleared off and we are at present enjoying weather that permits our work to go on without interruption. Old residents of Santa Fe proclaim this the finest winter weather for twenty years.

"In the middle of the month our first contingent of Civil Works men arrived. The prospects of their arrival and their barracks raised a sanitation problem for the Army C.C.C. camp. This was at once taken care of by the Army furnishing about 4,000 feet of two inch pipe and by furnishing the labor, and running the line from above any possible point of contamination. By the 21st the C.C.C. camp was getting water out of the new line, which, as yet, has only a temporary intake point. Prior to this the camp was getting its water from a near point on the creek, pumping it into a tank. To insure against frost the new line was buried four feet or more below the surface depending on the contour of the ground.

"Comfortable quarters have been arranged for the Civil Works men by cleaning out Mr. Frey's stable and moving a double section of the truck shed into the Canyon and boarding it up. Bunks, both uppers and lowers, were made out of boards and ends of lumber. We have bunks for 64 men and by staggering the work periods, we expect that our present quarters will take care of the housing problems for the whole quota. The entire force is boarding at Frey's hotel for 25 cents per meal.

"Chief Ranger Lawrence F. Cook, of Sequoia National Park, arrived here on the 15th to study fire fighting and fire prevention work. A conference was held with Ranger Buchanan, of the Forest Service, on the 17th and many points were discussed. The result of this, as well as our own observations enabled us to map out a tentative program which is the subject matter of a report made by Mr. Cook to Fire Control Expert, Coffman, a copy of which you have no doubt received by this time. Mr. Cook impressed me as being a very capable man, well versed in fire problems, and his recommendations should be given serious consideration.

"We were delayed at times by breakdowns on the Electric Tractor-Bull dozer outfits, but repairs were speedily secured from Denver and as a general thing, delays were negligible. The Forest Service trucks, loaned to us at the start were all taken back on account of C.F.A. work springing up in their Service. In order to speed up the work to avoid possible inclement weather, it may be necessary to rent a few trucks for a limited period. Culvert pipe sufficient for our drainage needs on the entrance road has been secured and hauled out to the location, and the first work of laying the pipe began today. We are going to push the work along as fast as possible in order to complete the road as we have no guarantee that the winter will run in open.

"Several accidents occurred during the last few days. Two of the C.C.C. boys, returning from Santa Fe with a load of culvert pipe on the 24th, upset their truck near the utility area at the top of the hill. Both were quite seriously injured according to reports given me and are

now undergoing treatment at the Veterans Hospital at Albuquerque. Alfred Lisko, C.W.A. Superintendent, and Harry F. Brown, another C.W.A. worker, were driving on the road south of Albuquerque on the morning of the 24th when they blew a tire which caused the pick-up they were riding in to collide with a car driven by an Indian. Both cars were badly damaged. Mr. Lisko received some head injuries, and is being treated by a doctor in Santa Fe. He is attending to his duties, however, against our advice. One of the C.W.A. workers from Algodones hurt his back while working on the pipe line ditch on the 28th, and was taken to his home and placed under the care of the C.W.A. doctor at Bernalillo.

"Thomas F. Martin, Landscape Foreman, reported for duty on the 26th, and Paul Reiter, with two other men expects to start an archaeological party on a survey of the various ruins on the Monument tomorrow. Mr. Reiter is connected with the School of American Research at Santa Fe.

"Season's greetings to all the personnel of the National Park Service and hopes that the New Year will bring all of us happiness and prosperity."

Sincerely yours,

----- L.O. Evenstad."

ARCHES NATIONAL MONUMENT. Marvin Turnbow, Custodian, Moab, Utah.

We have the following report from Cliff Pressnell, Park Naturalist of Zion National Park, on the establishment of the Civil Works program in Arches National Monument.

"In accordance with instructions issued December 11th, I left Zion Park on the 12th in company with Superintendent Patraw to organize the archaeological party authorized under C.W.A. for Arches National Monument. The 13th was spent at Salt Lake City conferring with C.W.A. officials and searching for a scientist to head the expedition, Frank Beckwith, of Delta, Utah, being finally secured.

"Since the State C.W.A. Administrator instructed us to requisition most of our personnel from Carbon County, I spent the 14th at Price selecting a crew, and on the 15th went to Moab where a local foreman, packer and cook were hired, completing the allotment of fifteen. From the 16th to the 18th inclusive I assembled camp equipment and established camp at Willow Springs, the only living water located advantageously to the Monument. It is five miles from highway 80 and three miles from the Monument, necessitating the use of pack and saddle animals. In spite of the consequent difficulties in transportation, and vexing delays in securing equipment, it was possible to start the entire crew of fifteen men to work on the morning of the 19th. The men gladly agreed to work from dawn to dark the first week, thus hastening the preliminary camp and trail improvement, and giving them their full forty hours of allowable time.

"On the 19th I rode over a portion of the Monument in company with Frank Beckwith, leader; Ralph Anderson, engineer; and Marvin Turnbow,

packer and Custodian of the Monument. We determined upon a program of work, and selected camp sites for a mobile surveying group of five men, to whom water and supplies would be packed; thus allowing the survey to be speeded up and kept ahead of the more leisurely study conducted from the base camp.

"The program as roughly outlined is as follows:

- 1-Survey: Ralph Anderson and four helpers: to make an accurate large scale map with as much topography as practicable; and to work with Beckwith and J. C. Anderson in locating points of scenic and scientific interest.
- 2-Archaeology:- Frank Beckwith and helpers as needed: to make a thorough study of the Archaeology of the Monument and as much of the surrounding country as is necessary for correlation.
- 3- Geology:- J.C.Anderson and helpers as needed: to map the geology in detail; to assist Beckwith; and to take all official photographs. Mr. Anderson believes he can secure publication of the Expedition's report as a Bulletin of the University of Utah.
- 4- Conduct of Camp and labor: Jack You Van, Foreman: charged with overseeing all labor, checking camp and mess accounts with clerk and cook, and directing packing of supplies. Any men not engaged under the first three jobs will be kept at necessary trail improvement, transportation into camp being at present a serious problem.

"The 20th and 21st were spent in returning to Zion Park with a crippled automobile, including a lay-over of 24 hours for repairs.

"Expense of equipping the expedition was rather heavy (being approximately \$350) due to inability to borrow or rent in that isolated region. The local Forest Service and C.C.C. camp loaned to the limit of their ability, which was not great.

"The personnel of the camp is as follows:

Frank Beckwith, Arch. ecologist and leader-----	\$48.68 per week.
Jack You Van, Foreman-----	38.00 " "
J.C.Anderson, Asst. Geologist-----	1.10 per hour.
Ralph Anderson, transition-----	1.10 " "
Habor Christensen, Cook-----	1.10 " "
Orson Larson, Rough Carpenter-----	.90 " "
Bert Milano, Clerk -----	.75 " "
Marvin Turnbow, packer with 2 mules-----	.75 " "
Additional mules-----	.12 $\frac{1}{2}$ " "
1 rooster-----	.80 " "
1 Ch. chicken-----	.70 " "
1 Ternster-----	.60 " "
1 Truck driver-----	.60 " "
Truck when needed-----	.50 " "
3 Laborers -----	.50 " "

In connection with this Archaes job, I want to quote part of a letter from Superintendent Petrows:

"Accompanied by Park Naturalist Presnell, I left here on the 12th going to Salt Lake. On the 13th we called at the State Civil Works Administrator's office and arranged for requisition of the allotted number of men. We had considerable difficulty locating an archaeologist to place in charge of the work and were about to wire Berkeley for the selection of a California man when we got in touch with Mr. Frank Beckwith, of Delta, Utah. Mr. Beckwith is a man of mature age and has indulged in archaeology many years and has prepared several publications on the subject. Mr. Presnell left Salt Lake in the afternoon and drove to Moab for the purpose of inspecting the monument, organizing a crew and outlining the project. Mr. Beckwith probably reported on the job yesterday."

While the above extract is a part of the history of the project and is therefore made a part of this report, my real reason for bringing it in, Chief, was to give a little publicity to that exquisite phrase; "Mr. Beckwith has indulged in archaeology for many years." I know now why all these bone diggers are a little different from common folks, not really foolish, but a little touched; they have been indulging too much in archaeology! The phrase is good and I believe will have a long life among the Southwestern Monuments.

NATURAL BRIDGES NATIONAL MONUMENT. Zeke Johnson, Custodian, Blanding Utah.

Zeke made the Salt Lake papers this month with a bang. The following write-up also carried a picture of him, a much better looking than Zeke of course but quite complimentary as showing they had done their best to get a likeness.

"Zeke Johnson, who has been watching over the Natural Bridges near Blanding in San Juan County for 23 years, will never be appeased until his long cherished dream is realized -- construction of a highway from the bridges to connect with the highway at Hanksville in Wayne County.

"Zeke boils with enthusiasm when he visions this 80-mile stretch of road, which will divert thousands of tourists from Mesa Verde National Park through Utah, into Zion Park and Bryce Canyon. These tourists whom Mr. Johnson talks about are now going south to Gallup New Mexico, and swinging over to Flagstaff, Arizona. Many, in fact the majority, he says, are missing scenic southern Utah.

"The vicinity of the Natural Bridges, where primitive Hopi Indians roamed," he declared, "is new to the tourist, but will be one of the most popular play grounds in America. There are numerous ruins of cliff dwellings in the vicinity of the bridges perched in the canyon walls in almost inaccessible places.

"But that isn't all we have down there", says Zeke, "The Monument consists of 7,400 acres. It includes two large caves which are located some little distance from the bridge region. There are three large bridges and four small ones."

Explaining how these bridges originated, Mr. Johnson pointed out that

they are the result of stream erosion in an elevated region. Doubtless, he said, thousands of similar ones have been formed and destroyed in past ages and many more will be made and later destroyed in ages to come.

"But Zeke is not the only one who can see the value of building a road through the region, which will make scenic San Juan and Wayne counties available to the motorist. He announced that George W. Dorn, Secretary of War and former Governor, is one of his staunch supporters. He has taken the War Secretary through the region.

"You can't realize how beautiful that country is until you traverse it," opines the veteran Custodian. "I have been there every summer for 23 years. Fourteen years ago I was officially appointed Custodian through U.S. Senator, William H. King."

"Mr. Johnson is a native of St. George. He was born April 16, 1869. He has a family. He winters in Salt Lake but the minute spring officially arrives, Mr. and Mrs. Johnson are en route to 'his' natural bridges for the summer.

"Zeke issues an invitation to Salt Lake to 'come down some time and see what your state has to offer!'"

"Zeke has the following to say about one of his problems, writing under date of December 28th: "The road from just below the Bears Ears to the Edwin Bridge doesn't seem to belong to anyone. It was built with \$10,000 appropriated by the St. to four or five years ago and there has never been one cent spent on it since, only just the little I have been able to do to keep it passable and another good rainstorm or two will take it out. On that hill coming down off the mountain there are no culverts and the water just runs along the rocks and it will soon be a thing of the past unless we can get some work done on it, and it won't take much but neither the county nor state will claim the road and there are no funds for it. I have talked and begged for some help from the county commissioners but never have been able to get one cent. As yet I have no prospect for any money unless you can do something for me, and something must be done or the road will soon be impassable."

"I am still living in hopes of having a Custodian's quarters out at the Monument. There are enough visitors go out there now to justify quarters. I would love to live out there all summer but I cannot live under a tree and feel comfortable and my old tent is all worn out and I hate the idea of buying another. I would be willing to jackass water up that hill out of the Canyon for several years yet if I could only have a cabin to live in."

I wish the State of Utah would put that road of Zeke's on the Civil Works program for the State. It looks to me like that would be the logical solution of it. The local county is too poor to do anything and under the law we cannot expend our money outside the boundaries of the reservation. I will ask Zeke to look into this and see if his road cannot be put on the Civil Works list when spring opens up enough to let the crews get in there to work.

We have been trying to get the Custodian's quarters for the last couple of years, thus far without effect.

NAVAJO NATIONAL MONUMENT, John Wetherill, Custodian, Kayenta, Arizona.

On December 19th, John wrote me as follows:

"Dear Frank:

"We are ready to start our camp at the mouth of the Tsagi in Marsh Pass as soon as we arrange for the transportation. We will be located there until the party is assembled. It will take about ten days in the pass to get all the party together. When we start for Kit Seal we will need pack stock. We may make two camps on the way for the workmen. The scientific party will move on to Kit Seal and go to work there.

"When we are located at Kit Seal, we will be 288 miles from Holbrook, our county seat, thirteen miles from Canyon road, 160 miles from the nearest railroad point at Flagstaff, and 25 miles from the nearest telephone."

John doesn't know how lucky he will be in that location. Many, many times in the last month or so have we wished we were that far from telephones, telegraph stations, railroads, and C.M.A. people specifically and in general.

We were very glad to have Irwin and Julian Hayden join John's archaeological party. Irwin ran the Los Angeles Museum- Van Bergen Expedition here at Casa Grande three or four years ago and we have the assurance that with him on the bone digging end of that work, it will be well done.

CASA GRANDE NATIONAL MONUMENT, Hilding F. Palmer, Custodian, Coolidge Ariz.

The following report was received on January 1st.:

Dear "T. Pinkley:

"For my report this month I have had the men who are in charge of the various projects going on at the Monument submit reports of their activities; some of these reports I am submitting as they were submitted to me, others I have worked over. This has been one busy Monument, but, probably, no busier than the others under your charge. Many needed and valuable improvements have been accomplished under both the Public Works and the Civil Works Programs."

"The following report of visitors and weather conditions was submitted by Ranger Frank L. Fish who, with the help of Francis Seagoe, a temporary Ranger, hired because of the regular personnel being so busy with the C.M.A. program, efficiently handled the guests who visited the Monument during the month:

"There was a decided increase in the number of visitors compared with the same period last year. Most of the gain occurred during the holiday season. During the last eight days of December of this year 1002 people arrived and were taken through the Ruins and Museum; all types of persons were represented, from the scientific minded to a type represented by the lady who remarked after her first few minutes, 'These must have been wild Indians.' Evidently she considered the Casa Grande was not built by Fred Harvey.

The total number of visitors for December of this year was 2343 as compared with 1671 for the same month last year. This was an increase of 672 or 40 percent. All states of the Union were represented with the exception of Alabama, Delaware, Louisiana, Maine and West Virginia. Other territories and foreign countries represented were Alaska, Hawaii, District of Columbia, Canada, Germany, Uruguay and British East Africa. Out of State people made up 46 percent of the visitors. California furnished the greatest amount with 18%, the same as the year before. People using the facilities of the Monument but requiring only momentary service of the personnel numbered 254, making 805 visitors of this character during the past three months period. Guided trips through Compound A 275 and through the museum, 240. The quarterly number of visitors for this year is 6,119 as compared with 5576 for the same quarter last year; this is an increase of 543 or 9 percent. This increase for the month and the quarter certainly shows that conditions must be getting better and more people are on the road.

The weather was ideal for traveling during the greater part of the month. The minimum temperature was 20 degrees on the 18th, the maximum 79 on the 26th. The mean maximum for the month was 68.3, the mean minimum 31.7 with a mean for the month of 50 degrees. Precipitation was only .09 of an inch for the month as compared with 1.91 for the same month last year. There were 26 clear days, and 5 partly cloudy."

(I am greatly pleased with this visitors report showing such a decided increase over last year.)

" Work under the Public Works Program was continued during the month and the program with the exception of on project is practically complete. There are small balances in each account which will be used during the coming month to take care of a few small unfinished details. A detailed report of each project follows:

Project #F.P.118 - Camp Ground Development.

This project is complete with the exception of the few details mentioned above; 210 feet of remedas or brush shades were constructed according to a plan submitted by the Branch of Plans and Design; twenty new picnic tables were built and painted and 15 old ones were repainted to match; seven fireplaces with steel cooking plates were constructed of adobes and plastered; a new ~~stand~~ hydrant was purchased and installed to replace the standpipe used formerly; a two swing swing standard and a double tester standard for the children made from 1 1/2 inch pipe are now in process of construction. This picnic area is becoming increasingly popular each month and is being used by a large number of people; each day and especially Sundays finds many people bringing their lunches and seeing the features of the Monument, after using the conveniences of the picnic grounds.

Project # F.P.119 - Repairs to Two Quarters.

This project is now complete and one quarters is already occupied

and the other will be beginning January second. One quarters now occupied by the Assistant Superintendent Southwestern Monuments was redecorated on the inside and several repairs to base boards, closets etc made and a coat of stucco given the outside, the window sash repainted and repaired; the other was the old office and museum and it has been completely remodelod; the walls were plastered inside and stuccoed outside, new wooden floors installed to replace cement ones that had gone to pieces, a new roof was placed over the building, new closets built, two new connecting doors cut through the walls, a new window put in, the walls and woodwork painted and kalsomined and the building converted into a first class four room employees quarters. The exterior of both quarters have been stained to match the other buildings on the Monument.

Project #120 - Water Systems Extensions.

This project is also complete except for one or two details. With the \$900.00 allotted to this project all 3/4 inch water lines have been replaced with 1 1/2 inch lines, and fire lines have been run to each building in such a way that with 50 feet of hose all parts of each building can be reached. The water storage has been increased from 1000 gallons to 2000 gallons by replacing two 500 gallon storage tanks with two 1000 gallon tanks. This fire protection system was not intended to extinguish any large fire after it had gotten under way but to serve to prevent any fire from spreading to the adjacent buildings. From the nature of our construction we have very little fire hazard and consequently an expensive outlay for fire protection is unnecessary. The small balance in this account will be used to purchase hose.

Project # F.P. 121 - Walls Around Administration Building.

This project still has some work to be done on it. The walls are all up and plastered and stained according to a plan furnished us by the Branch of Plans and Design; unsightly guard rails of wood on two sides of the Parking Area were removed and cement curbing constructed to take their place. The curbing and walls act as an effective barrier to keep visitors from going to the ruins directly from the parking area without registering or obtaining a guide, thus cutting down the danger of vandalism to the prehistoric ruins and making it much easier to handle visitors efficiently on busy days.

All four of the above projects have been handled by force account. Work was first started on September 6th and has been carried on continuously ever since. The total allotment for the four projects was \$6,300.00. There is still left for expenditure in the four accounts \$370.00, making \$5,930.00 expended to date on the four projects. This has been divided as follows, LABOR \$3,590.15 MATERIALS \$2,339.85. There were 5,698 men hours of employment given to workers on the four projects. All men used were, of course, secured through the National Reemployment Service.

And a word might not be amiss here regarding the advantages of this Service. I have found the County Manager efficient and willing to cooperate in every possible way; practically every man furnished has been capable and has given good work. Only two men furnished through this

Service for our Public Works Program proved to be inefficient and had to be discharged and we could have gotten along with them if there hadn't been so many more willing workers needing a job. There is no question but what an efficient Reemployment Service can do better in placing men who need the work than the individual employer.

We have one other project under the Public Works that has not been started yet. This is the construction of a new employee's quarters which will be handled as a contract project. The Branch of Plans and Design have advised us that the working drawings will be ready January tenth; the bids will be advertised for and the contract let immediately thereafter.

Our Civil Works Program is progressing splendidly. We received word on December 5th that our program had been approved and that we had been allotted 34 m.m. On December 8th we were at work with a full crew. The men according to instructions were obtained through the National Reemployment Service with the same excellent results as noted above under Public Works. Only one man has proved unsatisfactory so far and had to be discharged.

Ruins repair and grading of compounds was to be our principal program but pending approval of the Branch of Plans and Design and the Engineering Division of the procedure the men were kept busy on several other projects that have needed caring for for a long time.

The foreman's report shows that 6 men were employed $2\frac{1}{2}$ days in opening a trench 1 foot wide and sixteen inches deep and 1053 feet long in which our telephone line from the residential area to the Monument boundary was conduited in $\frac{1}{2}$ inch galvanized pipe; (the line from that point to the Administration Building had already been conduited) the pipe was laid by two men in $1\frac{1}{2}$ days and the wire was run in and the final connection made by the Telephone Co. in a little less than a day; the ditch was backfilled in two days; the workmen were exceedingly careful about destroying shrubbery and no injury to any vegetation resulted from the trenching operation. During the course of the ditch digging however a large and a small mortar of prehistoric manufacture were uncovered and have been added to our museum collection. This conduited line replaces five poles that have been a blot on the landscape for many years.

The shoulders of our entrance road had never been completed and the foreman's report shows that seven men were started on this project on December 8th; the drainage ditch along each side of the road was straightened and the shoulders raised to the height of the pavement and covered with peagravel which was rolled in thoroughly with a 700 pound hand roller as it was laid; fortunately just as this operation was completed we had a light shower which put those shoulders in just the right condition for compaction and the roller was hitched behind a truck and they were rolled, re-rolled and rolled some more. I think we now have shoulders on each side of our entrance road that will last a long time.

with very little expense for upkeep; at least, if nothing more has been accomplished, the appearance of the road has been improved 100 percent. Even Harry Langley said nice words about it. The original crew of seven men was augmented off and on by men that were transferred from other projects that had been completed or did not need their full crew. Sometimes four or five men, sometimes a dozen were working on this project; It was completed December 26th.

At the time that the State Highway Department put in the road along our east and north boundary they dug deep barrow pits along the right of way to furnish material for grading. This left a bank from one to three feet high along our boundary. At the time of every hard rain, water running from the reservation lands out into the barrow pits cuts the bank with many fissures and in many places our fence is in danger of being washed out. The foreman's report shows that when men can be spared from other projects they have been placed on this fence line and are building this bank up about 6 inches higher, feathering the grade off on the inside so that it doesn't show, so that the water instead of running off at all points will drain to specified points where it can be taken out into the barrow pit over a concrete spillway.

An archaeological reconnaissance party was started on December 11th excavating a pure red on buff site in the southeastern part of the Monument. The work is still in a preliminary stage but Russell Hastings, of the Gila Pueblo, of Globe Arizona, who was loaned to us through the courtesy of Mr. Harold S. Gladwin to take charge of the work is very pleased with the results so far and is looking forward to getting some very interesting information from the site. This project is important to us because it is probably the only real early prehistoric site on the Monument. After the excavation is completed the site will be backfilled for preservation. Mr. Hastings report on the work to date is as follows:

PRELIMINARY REPORT ON EXCAVATIONS AT CASA GRANDE 1933
BY RUSSELL HASTINGS.

A site for excavation was chosen after examination of several of the mounds on the Monument. Surface indications of the site chosen were a group of three mounds lying close together near the southeastern corner of the Monument, sherds from which ran all the way from Colonial red on buff to Classic red on buff; however no particular area gave sherds of only Colonial period or of only Classic period. No polychrome sherds were present. It was felt the site would run from early sedentary times to early Classic times. There were no indications of dwellings. The culture seemed 100 percent Hohokam.

Excavation was begun December 11th, the first operation being to trench each of the mounds preparatory to taking stratigraphic tests. On the completion of these trenches, exploratory trenching was begun around the mounds in search of dwellings and cremation areas. No cremation areas have as yet been found but several floors were struck and the indicated

r

rooms are now in process of being excavated. The exact number of rooms open is not certain because of the several areas of excavation have not yet been joined and there is a possibility of walls between them that have not yet been exposed. All excavation has been accurately surveyed by the Engineer and detailed maps of significant areas will be made. Approximately 45 specimens consisting of stone, bone, wood and pottery artifacts have been removed from the site.

Significant features located to date are (1) one room covered by rubbish mound #1. (2) Three clay lined pits exceedingly well fired and very hard occurring above floors and certainly due to a later occupation than the rooms so far opened. (3) One pit containing charred bone fragments and ash, felt to be a cremation pit. (4) One floor area approximately 15 ft. square (excavation has not yet reached the limits of this area) containing upwards of thirty pieces of pottery, all considerably broken but in such a state that many of them can be restored. (5) Possible superposition of three walls, definite status of these to be determined later.

During the grading operations in Compound A a room was located and at Mr. Palmer's request has been partially excavated; the walls of this room appear to be caliche with wooden posts. Several fragments of charcoal which may be datable on the Douglass tree ring method were recovered from this room and sent to Mr. E. W. Haury, Assistant Director and Dendro-chronologist, Gila Pueblo, Globe, Arizona for examination.

(This is a fine report and we certainly thank Mr. Hastings for it. He is doing an excellent job of excavating.)

The vegetation on the Monument (trees, bushes etc) have never had any particular care taken of them; trash, dead timber, etc has accumulated all over the ground; although there are very few completely dead trees or bushes, very near every tree and bush has much dead timber in it; all the mesquite trees have a large amount of mistletoe growing in them and it is thought that it saps the life of the tree. Five men according to the Foreman's report have been busy since the inception of the GWA in cleaning out all the dead timber from the trees, cleaning up and burning all the trash and wood on the ground and removing part of the mistletoe from the mesquites. The timber that is suitable is hauled to the wood pile and will be used for fuel for quarters.

During the construction work that has been carried on on the Monument during the past three years, particularly when the old roof was removed from over the Casa Grande, a large quantity of scrap lumber had accumulated and had been stored in a high pile at the wood pile. Employees have been using it for kindling. The pile presented a very unsightly appearance and three men have been employed in cutting it up into kindling lengths and stacking it in neat piles. This utility area now presents an very much improved appearance.

A truck was rented locally for two dollars a day and has been kept

busy hauling gravel, wood, water for sprinkling, poles for remada repairs etc.

And now I come to that part of this report that gives me the most pleasure. Eversince I have been at Casa Grande it has been a constant source of worry to me that very little in the way of ruins protection has been done except to the Casa Grande itself. Year after year I have seen valuable outlying walls gradually weathering away. No funds in any quantity have been available to carry on any program of protection. This CWA program has given me an opportunity I have long sought and we now have all the necessary approval for placing concrete curtain walls on each side of the low lying walls to stop the capillary attraction of water from the ground into the walls. Lumber for the construction of forms is on the ground; cement has been contracted for and will be delivered in a few days; sand and gravel is being hauled and Tuesday morning we will start on ruins repair that will last as long as the CWA is carried on. We will not be able to finish all of it but we are at least started and SOME of our walls are going to be protected. Work is being started on the outside wall surrounding the village to give the workmen experience before we try working around the more complicated house walls inside the village. In connection with this repair work an engineer is surveying the Compound and we are grading it so that all water will be drained away to the outside of the village as soon as possible after it falls. This grading operation will also result in a very much better appearance for the Compound. I am hopeful that the Director will be able to secure for us money from the Public Works Administration to complete this work after C.W.A. is over. In my opinion nothing is more important at this Monument than the carrying on of this project to completion.

In addition to these major projects we have found time to do a few little odd jobs such as repairing remadas, building a case or two repairs to buildings etc.

In concluding his report to me the Foreman makes the following statement; 'The 34 men assigned to me are all good men; I have had to discharge only one of them; they are punctual in reporting for work; in accordance with the written instructions issued to them when they reported for work, they are careful about injuring shrubbery, trees or any other features of the Monument; they take good care of their tools and their subforemen say that they are anxious to do a good job.'

A pretty good report it seems to me for a gang of ex-miners, ex-farmers, ex-clerks, ex-mechanics etc.

The timekeeper's report speaks for itself and I am copying it verbatim:

During the month of December, under the Civil Works Administration on U.S. project #2 which comprises work at the Casa Grande National Monument I have the following to report:

We have worked a total of 36 men, who have worked a total number of 3716 hours for a total labor charge of \$1,980.27. We have spent the following for material:

Tools - - - - -	\$ 90.20
Hardware, pipe and fittings- - - -	260.94
Lumber- - - - -	168.28
Cement - - - - -	509.60
Lime - - - - -	89.18
Misc. supplies- - - - -	116.22
Total for materials	1234.42

We have most of this material on hand that has not been used on the CWA program but we will start using it during the coming week.

The men working are very conscientious in their duties performed and are showing their appreciation for ~~xxx~~ employment by performing their work in a careful way.'

I might say; supplementing this report that the cement and lumber is for the curtain walls for the ruins repair project and none of it has been used yet which does not make the proportion high between the amount expended for labor and that spent for materials.

An indication that there is an upward trend and that all these recovery plans are having a good effect is the fact that four men who have been working on this CWA program here quit last Saturday night to resume their former work in the mines near Superior.

From all of these facts you can see that we are accomplishing many worthwhile things at Casa Grande and when the "lean" days come after all of this relief expenditure is over, as you prophesied they would last month, we at Casa Grande are not going to have to look back and wish we hadn't wasted that dollar. We are getting our money's worth out of these men and could use from ten to twenty-five more advantageously.

We started the CWA paying only 40 cents an hour for common labor. Other CWA projects in the vicinity were paying 50 cents so permission was requested and received from the State Civil Works Administration to raise our rate to 50 cents. When the timekeeper informed the men two days before Christmas that their pay for that week was to be 50 cents an hour instead of 40 cents one of them remarked 'Gee, there is a Santa Claus after all isn't there.

I was interested in knowing just what the men thought of this program of providing jobs for them and so I asked four of them to write for me an answer to the question - What Benefit Has This Program of the President's Seen to You. Their answers follow:

1

'I have derived numerous benefits from both the Public Works Program and the Civil Works Program. Since my employment in September I have been able to keep out of debt, have provided for my family and

Now that this report is finished I can go back to work.

A little nature note in conclusion: one of the men who is camping on the monument tells me that he has seen both red and gray fox and badger near his camp. I was surprised to learn that we had them on the monument. There are many doves and quail around also.

And so the work goes merrily on and we are all doing our utmost to get good jobs done. Mr. Langley has inspected us and given his approval to the landscaping features of the program and Mr. Atwell has done the same for the Engineering Division. They have both given us a lot of valuable advice. After all is said and done what would we do without the valuable cooperation of these two Departments.

(I believe that the program is appreciated by these men)

Just a word of appreciation for this employment plan. As a worker under the Civil Works I have received my first regular employment since 1931. Men can at least hold up their heads now instead of seeking charity. I hope everyone is as appreciative of this program as the laboring man.

#4

Yours for a six hour day.

I went to work on the Public Works Program at Casa Grande National Monument about October 15th. I had been out of work before I got this job about two months. I have six children to support and if I hadn't have gotten this job I would have had to have taken them out of school. They were all out of clothes and I had been making just barely enough to get them food to eat. During the summer my son, nephew and I worked for \$7.50 a week. This was just enough money to get groceries for my family of eight. We worked from 10 to 11 hours a day! I sure enjoy working six hours a day because I can spend more of my time with my children.

#3

This job under the Civil Works Program has meant much to me. I was a mechanic in partnership with a brother-in-law in a garage business. Business fell off to such an extent that there was not sufficient to keep two families and it was necessary that one of do something else. It fell to my lot to be the one. I had been out of work entirely for four months and as I had no income at all I do not see how my wife and self could have gotten along this winter. Since I have been working on this job and getting what we needed to live I feel very much better and have a very much better outlook on life. In every way this work has been a great help to me. I have been working nearly a month and hope it will last for some time.

#2

been able to keep my children in school. The six hour day has proven very satisfactory! It provides ample time for transportation from home to work and still leave time to spend at home with the family.

Here is a report from Walter Attrell as to what he has been doing for the last four or five weeks:

"Dear Boss:

"My activities for the month of December were centered mostly on establishing Civil Works crews in the different Monuments. The month was started at Bandelier National Monument with a 204 man C.C.C. camp and 104 man Civil Works crew.

"The C.C.C. camp is under the supervision of E.H. McGill. Its work is the construction of a truck trail into Frijoles Canyon, the construction of a cliff trail and trail to the Ceremonial Cave, and the re-conditioning of many fire trails.

"The C.A. crew is under Mr. A. Lieske. That crew is scheduled to widen the entrance road from 12 feet to 20 feet, fence detached sections of the monument and construct water and sewer systems.

"At White Sands National Monument, a 104 man C. A. crew was organized with Tom Charles as Superintendent and Peter Rose as Engineer. The work at the Sands consists of the construction of three miles of entrance road, four miles of roads through the sands, surveying the Monument boundary, location of limits of the sands, development of water at several places within the boundary, development of the parking areas, taking topography, and location of points of interest as Red Lakes, groves of trees, ruins, etc.

"I established a 21 man crew at Gran Quivira with C.A.B. Scharf as foreman. The contemplated work consists of regrading one mile of entrance road, plating the sandy places with caliche and clay, constructing a parking area, cattle guard, eradicating old roads and trails, and the establishment of the west boundary.

"A twenty-six man crew, under Foreman Homer Farr was organized at Capulin. There I expect to regrade the three mile entrance road, slope the banks, construct a three quarter mile rim trail around the crater and a trail down into it; also to establish the boundaries.

"Montezuma Castle has rated a 48 man crew on its entrance road, revetment work and ruins excavation. The road work is well under way and two bad curves have been improved. Earl Jackson, archaeologist, with ten men is opening up the ruins west of the Castle. His work has impressed me as being very careful and thorough.

"After leaving Field Headquarters on February 17 and being in the field for 10 months, I was in the home office one day and home three days and then returned to the field for another season.

Walter G. Attrell."

Walt withholds the fact in his report that Dinnie came back into the field with him for a three weeks trip, to the very great pleasure of our Southwestern Monument folks.

Here is a new man's angle on one of our jobs. It is a letter from Laurence Cone, a new landsman on the White Sands job, and incidentally Tom Charles' monument story is another slice of publicity in this report.

"The work is going on all with the exploration party bringing in some fine things every day; things that are going to prove great attractions, especially to the many people who are going to come here to view

these Sands. Mr. Charles is surely the personification of 'stick-to-it-iviness' as far as these sands are concerned and he is glowing as each day's new features are discovered that may inspire some new publicity. During these last few days I have been going out into the Sands far enough to keep ahead of the engineers and their plans for the road, and each day I have found added beauty in this new National Monument. I have been trying to get a series of pictures which may be sort of a before and after set of records; the first ones have been more or less successful. Along with that I am going to keep a record of the work as it progresses and that should prove an interesting record when the work is completed.

"The road into the Sands is coming nicely and with it also is developing added interest on the part of the Alamogordians, for I really think that they have been somewhat timid about the proposition and fearful that their Sands might be spoiled. It has been my distinct pleasure to inform them that my special job is to preserve all of the natural features of the Sands and to see that none of the beauty will be taken away. I have been asked numerous questions concerning the work and what is going to be done to the roads when there is a sandstorm, and many others too numerous to mention. It is giving many of them something to talk about besides the weather and whether the eight fifteen will be on time tonight or whether it will be its usual half hour late.

"I was especially interested in a paper we received yesterday in regard to the preservation of all natural features of the Monument, for it will make the Landscapers place more secure in their minds. I have several times had to remove plants which were in the way - plants that were going to prove useful in later planting, and the looks of patient pity that I have been given, have been more amusing than some of their humor.

"I was in getting a hair cut the other day and two cow punchers were talking. One said: 'Well Bill, whatcha doin' now?' The other replied: 'Nothin'. Then the first said: 'Where at?.' To which Bill made the brilliant reply: 'Over yonder!'

"Things like that give you some idea of why I am growing increasingly fond of this place.

"Another thing that I am going to do while I am here is collect as much of the natural plant life as I can find and press it into a book to go with my account and pictures. Each additional item which will be collected will tend to make the report more interesting for those who look over the record in the future.

Lawrence D. Cone."

These observations from a new-comer in our ranks are mighty interesting for they stir up our own ideas on our work. Much luck to Mr. Cone in his work.

Ass't. Sup't. Report(R.H. Ross):

My activities during the month have centered principally about the planning of specific projects to be undertaken in the revised Civil Works set-up in which some positions have been reserved under the Historical Division.

At Aztec Ruins National Monument (1) cataloguing the museum collection; (2) preparation of measured drawings of the pueblo; (3) extensive

repair of pottery and other museum materials; and (4) repairs to ruins are included. Cataloguing is being done on the standard form cards. As a project, this recording of all known data about each museum piece is one of the most important.

At Casa Grande National Monument Historical Division projects include (1) cataloguing the museum collection; (2) preparation of label and chart material for the Civil Works staff in the Berkeley laboratories; (3) archeological survey of the monument; and (4) rearrangement of the museum collection and manufacture of additional museum cases. The field work is engaging practically all of the available time of supervisory personnel because of the technical nature of such work, and inside work is being pushed as rapidly as possible considering this monument is experiencing a very heavy tourist travel during this time of year.

The additional cases are being designed such that the artifacts and pottery can be displayed with better effect. The cases are being made 22 inches wide at the bottom on a solid 10 inch base. They will stand 6-feet tall and taper to 5 inches wide on top. This will give something of the same effect as adjustable shelves of wide dimension at bottom and getting less toward the top of the case.

The museum is being arranged such that greatest emphasis will be placed upon the Ho-ho-kum. Red-on-buff pottery, cremation burials, and other exhibits peculiar to the resident peoples of the valley regions for some two thousand years will be shown in the main exhibit room.

Polychrome pottery and earth burials will be features of the next exhibit room in which the so-called Classical Period will be emphasized. It appears that after the Ho-ho-kum had occupied the valley regions for many centuries they were joined by a true pueblo people from the north. It is the period from the time of appearance of the newcomers until the final abandonment of the villages or compounds that will be emphasized in the second exhibit room.

Modern Indian materials now on display in a main exhibit room will find a place in the Preparation Room while the room now given to modern exhibits will house the textiles, ornaments ceremonial objects and other cultural materials.

IN GENERAL

This report has run into greater length than we expected. All I need to say in closing, is that we have been especially blessed with good weather all over the district during the month of December and our Civil Works projects have profited by it.

Visitors are picking up at the Monuments where we have winter peaks and it looks a little like we are back on the road to the days before the depression.

Cordially,

Frank Pinkley
Superintendent.

CHACO CANYON NATIONAL MONUMENT. Hurst R. Julian, Custodian, Crownpoint, N.M.

Proving we must stick to alphabetical order, Julian's Chaco Report takes a "Z" position because we didn't include it in alphabetical order. "Dear Boss: I am writing this report two days earlier in the month than I usually prepare the monthly report. I have some time now and when the 25th comes I'll have a great deal on hands.

"I wish you would look over the mailing list for our completed and accumulated monthly report and see if the Chaco is on it. I believe that the Chaco did not get the last two issues.

"The visitors have been rather few this month, although the roads have been in much better condition than they were last month. Too, perhaps I have not seen many of them when at least some of them arrived. My count for the month is 208, the register shows but five states represented, Colorado and New Mexico people being ~~the~~ in the majority.

"The Archeological Reconnaissance, Civil Works Administration, University of New Mexico, School of American Research, Museum of New Mexico, party arrived the twenty first to go to work on a drainage plan for Chetro Ketl. It will, in all probability be worth while, in fact I am somewhat enthused over the prospects of accomplishment which this work shows. Gordon Vivian heads the group.

"As to C.W.A. in general, nothing has yet been done. First there is the matter of clearance of the funds and plans through the Field Office. This problem is unduly complicated, as is usual with anything that we undertake in the Chaco, by the land situation. Then there is the matter of the definition of the term "local" in the instructions to secure the men from the "local C.W.A." Both San Juan and Mc Kinley Counties claim to be the "local" administration. Both administrators have received instructions to furnish the Chaco with men. Rather than to antagonize either faction, I simply put the matter up to the State Administrator, and asked them to furnish the men, when, if, and as, we need them.

"We can get good out of the appropriation because we can get a few Indians and cow boys from the immediate region to come here and camp and do some of the work. People on charity rolls in either county will find it hard to supply themselves with tents, bed tarps and bedding, cooking utensils, and in addition bring in enough fuel and food to run them for several weeks, and on top of that, bring them in from 60 to 100 miles.

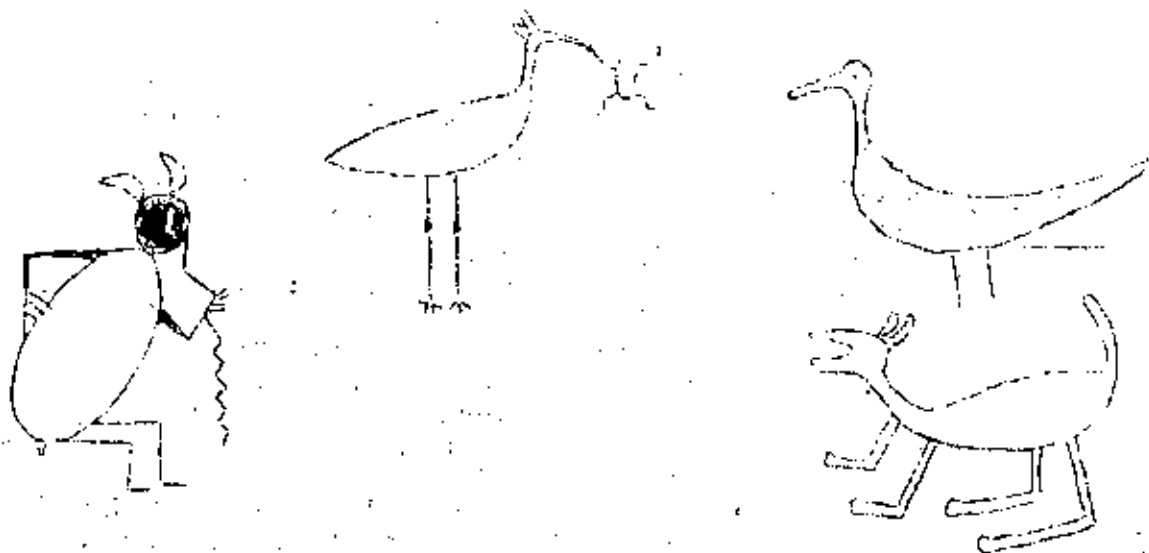
"Mr. Vogt has had some success with such arrangements at El Morro where he has drawn his men from a ranching community, where every man can cook, has camping equipment, and has slept out of doors in all kinds of weather for many years. Also there is firewood at El Morro which helps in weathering any storm. The parks have had a measure of success with the system where it is not 100 miles to the nearest grocery store. Also firewood and shelter were available. Our local Trader, Mr. Springstead, can always be depended upon to assist us in every possible way. He will find it hard to supply sufficient food at reasonable prices.

Fortunately for all of us in this region, we have Jim Hamilton assigned to our projects. The Engineers Office may have a better man but I don't know how it would be possible to secure one. With him to head our plans and undertakings, it is with a great deal of assurance that we go forward.

"I have watched John Will Faris and his organization click along as nicely as though it had been in operation forever. If we get started in the Chaco, I would like to lure some of John Will's organizers away from him. However, in all probability, it would be necessary to take John Will himself in order to get the desired results in the Chaco. (note: I'm not trying to borrow money from him either). Harst Julian.

As the press is about to close, Mr. Palmer and Mr. Rose report that arrangements are complete for transferring a fine collection of cultural materials, chiefly of the pure Red on buff, to the museum at the Casa Grande National Monument. The collection was gathered by Carl A. Mooserberg, Scientific Aid of the Field Station, U.S. Dep't. of Agriculture at Sacaton, Ariz. It came from a site being destroyed by agricultural developments. Very careful field notes are available on this fine collection which adds greatly to its scientific value. The museum is being arranged for display of this material along with our present collection. The cataloguing of the entire Mooserberg Collection will be done at once after transfer.

U. S. DEPARTMENT OF THE INTERIOR
Office of National Parks, Buildings and Reservations



PETRIFIED FOREST NATIONAL MONUMENT
Holbrook, Arizona

January 2, 1934

The Director,
Office of National Parks,
Buildings and Reservations,
Washington, D. C.

Dear Mr. Director:

The narrative report covering activities in the Petrified Forest National Monument for the month of December, 1933, is respectfully submitted.

GENERAL:

The most important happening in this monument was the inauguration of the Civil Works Projects. Soon after the first of the month the sum of \$28,890 was allotted for the 13 projects proposed within this monument. This fund was allotted at the ratio of \$22,574 for labor and \$7,316 for expenditures other than labor. Pursuant to your instructions, I communicated with Superintendent Tillotson of Grand Canyon National Park, and Superintendent Pinkley of the Southwestern National Monuments, for the purpose of arriving at some other distribution of the 500 men authorized for the State of Arizona for national park and monument projects should either officer feel that he could spare any of the man power allotted to his particular unit. There did not seem to be any desire to make any change, so I went ahead on the original basis.

By appointment I met Superintendent Tillotson at Williams, Arizona, on December 3, and leaving my automobile there proceeded with him to Phoenix, Arizona. December 4, 5, and the morning of the 6th were spent almost continuously in contacting and conferring with various officials connected with the State Civil Works Administration. These were Miss Florence M. Warner, Executive Secretary of the State Board of Public Welfare and as such, State Civil Works Administrator; Miss Esther Robman, Special Disbursing Agent for the Veterans Bureau; Ray Gilbert, State Reemployment Director, and others. I was designated Civil Works Administrator for the Petrified Forest National Monument, Federal Project No. 7, and was designated by Miss Warner to do our own purchasing and also to make purchases in excess of \$100 without reference to her office on the ground that we are experienced and competent to do so in accordance with the standard Government fiscal procedure. Mr. Hugh M. Miller of Casa Grande was designated Assistant Disbursing Agent for this monument. I brought back a supply of the approved Civil Works forms for use here, arriving home about midnight on December 6.

On December 7 I made requisition on the local National Reemployment Office for 25 men and on December 11, Civil Works Projects were under way. The first week we had 69 persons employed, the second week we had 105 working, and the final week of the month found 129 on the rolls. We have disbursed for labor (including the payroll for the week ending December 28) \$4,256.45. This money has gone immediately into circulation and has done an amount of good that cannot be overestimated. It has made possible a happy Christmas for many times the number employed, has caused a brighter outlook for the coming year, and has caused a marked acceleration in business for all merchants and business men in all adjacent towns. A dollar in value, and more, has been received in work for every dollar expended. Additional men have been requisitioned which will bring our force up to the maximum January 2.

Projects under way or completed are as follow: No. 1, cleaning ditches and hand sloping banks on the trans-monument highway, 75% complete. No. 3, campground development, no work started - plan just received from the Branch of Plans and Designs and forwarded to your office for approval. No. 6, completing trail in Rainbow and Third Forests, steps to top of Panorama Knoll, and extending trail to Agate House Ruin, 95% complete. No. 8, to complete First Forest road to Eagles Nest Rock - Public Works funds exhausted and Civil Works started, grading about 50% complete. No. 10, Side road to Newspaper Rock and 500' of trail - trail complete, road not started. No. 13, Drift fence, 4-wire 30 miles long. Materials contracted for and about 5,000 juniper posts have been cut and hauled in. A crew of 14 Navajo Indians are engaged in cutting the posts.

On receipt of the data for the Archaeological Reconnaissance from your office, I immediately got in touch with Superintendent Pinkley, Park Naturalist Robert Rose, and Jesse L. Musbaum of the Laboratory of Anthropology at Santa Fe, and our ideas as to what should be undertaken in this monument seemed to coincide to a remarkable degree. We were all very keen on the restoration of the Agate House Ruin as the first project, and an outline of the general plan follows:

1. Partial restoration of Agate House Ruin.
2. Location and mapping all ruins and pictograph areas possible.
3. Use of the camera before starting any particular work, during progress, and upon completion.
4. Cleaning out and protecting portions of Indian Ruins at Rio Puerco.
5. Sherd collections and recorded data.
6. Thorough notes and cataloging or preparation which may be done at this time.
7. Restoration and protection of a slab or pit house site on large Flattop.
8. Make one or two trenches in Indian Ruin Pueblo at Rio Puerco. (To be covered up after examination).
9. Well prepared architectural or engineering maps of any important ruins if possible.

Mr. Musbaum has cooperated to the fullest extent. Through him we have secured the services of Dr. H. P. Mera as technician in charge of this project and he also recommended Mr. C. B. Cosgrove of Tucson, Arizona, who has been secured to be in direct charge on the ground. Mr. Cosgrove's father and mother have both been very active in archaeological work for many years and for the past seven or eight years have been employed by the Peabody Museum of Harvard. They have a splendid publication on the Swartz Ruin in the Mimbres drainage. C. B. Cosgrove has been trained by them and has done considerable independent work himself.

Mr. Cosgrove arrived here December 23, and Dr. Mera arrived December 26. To date they have excavated most of the surface of the Agate House site and are now getting outlines and floor levels of at least six rooms of which some are probably storage rooms. A portion of a badly disintegrated burial has been found which the jawbone indicates was an adult. One fairly good floor level has been located with what is probably a fire pit in place. Dr. Mera plans to raise the walls of this ruin several feet and when completed it will make a very intriguing exhibit. Dr. Mera places the age of this ruin as Pueblo No. 2. A crew of about four men, including one mason, have been employed. On holidays and at other times Dr. Mera and Mr. Cosgrove have done considerable reconnaissance work.

In all we have requisitioned 120 men from the National Re-employment Offices of the two counties in which the monument lies. An exceptionally efficient office force has been gotten together and consists of the following: Dean Kirk, clerk under Public Works, has been designated acting chief clerk. Mr. G. A. Kyes has been designated timekeeper, and Mrs. Dorothy Harrison who formerly was secretary for Superintendent Tillotson at Grand Canyon is the other clerk under C.W.A. The machine is hitting on all cylinders and at this time all office and clerical work is right up to date.

WEATHER:

The weather conditions in this monument have been ideal with fine warm days and cool nights. This certainly has been a fine thing for the men employed as it has given them a chance to earn some much needed dollars and has given us a chance to get a great deal of worthwhile work accomplished. Truly in this case the quotation has held true that "God tempers the wind to the shorn lamb". A table of the weather statistics follows:

High temperature for the month was 63 degrees on the 11th, low was 2 degrees above zero on the 17th. Mean maximum was 53.3 degrees, mean minimum 23 degrees. Precipitation for the month totaled .29 of an inch. Three inches of snow fell on the 16th and 18th. There were 23 clear days, 7 partly cloudy, and 1 cloudy day.

ADMINISTRATIVE:

All office and other work is well up to date. I have inspected the monument at such times as I have been outlining projects to the Assistant Engineer and foremen, and as often as possible at other times. However, a great deal of my time has been taken up with work in the office in order to keep up with our great expansion, which took place almost overnight. The office force is now well organized and I will have opportunity to exercise more direct supervision in the field. Approach roads to the monument are all in good shape and the grading and surfacing of U. S. Highway No. 66 through the Painted Desert area and to the east is being pushed rapidly. A small section of this newly completed road was opened to the public during the month. The road through the monument is in fine shape, having been graded since the small snow storm which occurred on the 16th.

PUBLIC WORKS PROJECTS:

Our Public Works Projects which were authorized under force account have all been completed or the funds have become practically exhausted, with the exception of Water and Sewer development.

Under this project we are working on a deep water well at headquarters, and a shallow dug well at the Indian Ruins at the Rio Puerco. Work has been carried on at the deep water well at headquarters all month. The old hole was reamed out to take larger casing to the former depth of 634 feet, which was the top of the Coconino sandstone, but it was found that this old hole was quite crooked so considerable work was spent in straightening this. Then the Coconino was penetrated eight feet and the undesirable water was shut off with gumbo clay. The hole was then cleaned out, but after penetrating the Coconino about 18 feet the drill broke through into a more porous sand and water came in. For a time we thought we had found the top water in the Coconino, but as the water reached almost exactly to the former level, we decided that it had broken through under the casing. On the advice of Mr. H. H. Womack, who had been in charge of water development for the Indian Service for 25 years, we continued to drill in the hope of finding a flow strong enough to overcome the force of the flow of salt water. However, we came to a thick stratum of finely cemented sandstone at 652½ feet, so we have now pulled the string of 5-1/16" casing and will effect a shut-off in this cemented sandstone and then continue drilling. On lifting this casing we found a band of gumbo still in place entirely around the casing above the shoe. It was evident that the shut-off had been good but that the salt water had migrated through a crevice in the weathered Coconino sandstone and had come in underneath at the place where the drill broke into porous sandstone.

The well at the Indian Ruins is dug to about 10 feet below the surface at this time.

LABOR SITUATION:

The labor situation is much improved in this locality, although there are yet a great many persons unemployed in the nearby counties.

NEW CONSTRUCTION BUREAU OF PUBLIC ROADS:

The construction of the overpass at the A. T. & S. F. R. R. north of the Rio Puerco has been at a standstill most of the month on account of the contractor not being able to secure delivery of the structural steel from the factory. I understand that this will be put in place immediately but that work will then be suspended until spring, as it will not be feasible to pour the concrete slab while there is danger of severe cold weather.

Of the seven bridges over dips which are under construction, four of these are practically completed and ready for the grading.

Everly & Allison were awarded the contract on grading up to

the overpass and bridges mentioned above, as well as other miscellaneous construction, including the grading of that portion of U. S. 260 within the monument. This company intends to start work in earnest January 2, 1934.

LANDSCAPE WORK:

Mr. H. J. Cremer was selected for duty here by the Branch of Plans and Design and he reported on December 20. Assistant Engineer C. M. Bell is in charge of all construction work in the monument, including C.W.A. Justin Dean Kirk was appointed clerk under Public Works and entered on duty December 8.

RANGER AND MUSEUM SERVICE:

We are so sadly lacking in ranger personnel in this monument that we have one man for each post that just has to be occupied. Acting Chief Ranger Frank J. Winess is on duty at the Painted Desert Checking Station, Park Ranger Thomas C. Miller is on duty in the Museum, Park Ranger Phillip F. Murray is on duty at the Indian Ruins at the Rio Puerco, and Park Ranger, Temp., Stanley Oismore is on duty at the checking station at U. S. 260. If one of these men is allowed a day off, or any annual leave of absence, that post must necessarily be abandoned. However, in spite of this, adequate service has been given to the traveling public, which is 132% in excess of last year. There has probably been some vandalism which we are powerless to prevent with this small force.

ANIMALS:

There were about 25 head of antelope in one band reported within the monument below the checking station on U. S. 260.

TRAVEL:

On account of the brighter general outlook throughout the country, and locally on account of the ideal weather, our travel is much in excess of last year.

The travel increase of this month over the corresponding month of last year, for the entire monument, of 6,037 people or 117%, is due to the fact that this winter has been open and very mild, and tourists have been taking advantage of the weather to travel across the country over the shortest route, Highway No. 66. Last year at this time the weather was very bitter with almost a foot of snow on the ground, and tourists were taking the southern route to escape the hazardous roads across the northern part of Arizona.

All but 3 states were represented during the month, Delaware, Mississippi and Rhode Island not showing up. Visitors were registered from the foreign countries of Canada, Mexico, China, England, Colombia, South Africa, and Cyprus.

			3,795
For the month, Petrified Forest section, cars,	1,728,	people	~~1,728~~
Previously reported	" 4,712,	"	12,480
Total to date	" 6,440,	"	16,264

For the month, Painted Desert section .,	" 1,766,	"	7,381
Previously reported	" 5,820,	"	20,762
Total to date	" 7,586,	"	28,154
Grand total for the month	" 3,494,	"	11,186
Grand total to date	" 14,026,	"	44,418
Grand total same month last year. . . . ,	" 1,736,	"	5,149

SPECIAL VISITORS:

Special visitors during December included Mr. David J. Reese, an officer of Rotary International, and party, who were guests of the Superintendent on the 1st. Mr. B. H. Yoakum of the U.S.G.S. arrived on the 10th. He is making a topographical map of the Forest. Mr. Levant Brown, San Francisco, and W. R. F. Wallace, B.P.R. Engineer, inspected the bridges across the monument on the 14th. Chief Ranger L. F. Cook of Sequoia National Park, who had been conducting a fire control reconnaissance in Bandolier National Monument, stopped in for a few minutes on the 19th. Dr. H. P. Herra, archaeologist of the Laboratory of Anthropology in Santa Fe, came in the night of the 26th.

MISCELLANEOUS:

On December 10 Mr. and Mrs. A. W. Davis of New York visited us and brought greetings from Mr. Albright, former Director of the National Park Service. As they were proceeding west of Holbrook that evening they crashed into a parked truck and their car was almost demolished, which caused them both to be under a doctor's care in Holbrook for the following week, when they departed for their home by train.

Very truly yours,

Chas. J. Smith
Chas. J. Smith, Superintendent.

P. S. When you see the pictures on the first page don't reach for the Flit. One is a copy of a pictograph which occurs perhaps more frequently over the Southwest than any other. It is the Munchback Flute Player and he comes out with a variety of costumes. Another is the first picturization of the familiar stork which is recorded. This is a faithful copy of a pictograph near the Indian Ruins, while another may be the first picture Fido ever had taken. The other is a picture of the first domesticated bird, the turkey. They all may be a thousand years old, or more.

P.P.S. I see that Supt. Pinkley says, in his last month's report, "we do our part", and reports, apparently with pride, that their maximum at Casa Grande is 70 hours per week. Shame on you "Pinkey." We've found out that we can easily work 140 hours a week, and use the other 28 for planning while we are asleep.

CJS

SUPPLEMENT TO THE
DECEMBER REPORT OF THE SOUTH-
WESTERN MONUMENTS

(Dealing with people, "Shop Talk, and news of interest)

MUSEUM OBJECTIVES
(R.H.Rose)

In the Supplement of our Report for July 1933, a list of facts developed in National Parks museum work is found. Of particular interest is the first which states:

"In the national parks the real museum is the out-of-doors. Man-made museums, here, are to be regarded as a species of elaborate label."

This objective has developed out of the fact that trips afield in parks and monuments offer rare opportunities to 'discover' facts and theories first hand whereas in schools and classrooms we learn these things second hand. Too, we realize in the national parks and monuments we can teach these same facts avoiding some of the undesirable features of classroom instruction.

Thus, in the national parks we seem to give the out-of-doors the place of chief importance. Museums are regarded principally as means to an end; that is, the function of the museum is filled if through labels, specimens, charts and diagrams, greater interest and appreciation are developed in the natural wonders termed "the out-of-doors". As we think this problem over we feel it is as it should be. Thus the parks museums can be made to carry out their purpose as 'species of elaborate labels', or 'stimulants to appreciation and understanding through knowledge'.

Modification of this Objective for Archeological Museums.

In regard to archeological museums, I would like to raise the question as to changing this objective which has been quoted above. Doesn't the fact that SINCE WE HAVE GATHERED THE BURIALS, POTTERY, TOOLS AND WEAPONS AND OTHER MATERIALS FROM THE SITES OUT-OF-DOORS AND PLACED THEM IN OUR MUSEUM STRUCTURES, mean that we have moved some of the "Out-of-Doors" into the museums and thereby increased the importance of the Museum in relation to the whole Museums-Field Trip layout ?

I bring this question up for this reason: If the fact is sustained that the museum does occupy a relatively more important position, then

we must recognize the fact in our installation plans.

PARK MUSEUMS AS SPECIES OF ELABORATE LABEL

We would gather from this heading that the function of the park museum is to increase the visitors' appreciation and knowledge of the out-of-doors which he contacts during his stay in the park. The museum accomplishes this by means of labels, charts, maps and specimens. Consider the Norris Museum in Yellowstone. Obviously, the geysers of the great Norris Geyser Basin are the central theme of interest. Yet it will never be necessary to 'move any of these geysers into the Norris Museum' in order to preserve them. On the other hand, the entire object of the Norris Museum is to kindle appreciation and perhaps inspiration through increased knowledge. The labels, diagrams, pictures, charts, and specimens, with the assistance of the museum attendant, are the 'tools' used in developing this knowledge and appreciation. At best, these charts, labels, etc. will only supplement those great natural wonders they seek to explain. Such museum is indispensable; yet what would such museum be without the great natural phenomena that are observed in the vicinity? Thus, I believe under these conditions, the museum, though invaluable, is a means to an end, and is not an end in itself. Getting this idea clearly in mind is necessary for the understanding of the points to follow.

ARCHEOLOGICAL MUSEUMS AS A PART OF "THE REAL THING" IN ADDITION TO BEING "A SPECIES OF ELABORATE LABEL"

Picture what happens in assembling an archeological collection. The pottery, burials, tools, weapons, textiles and other cultural materials, have been taken from their original position and deposited in our museums. The perishable and fragile nature of these cultural materials makes it very unwise to attempt to preserve them in situ in the dwellings. Thus, we have a situation somewhat akin to what we would have if about half of Yellowstone's natural wonders had to be collected and put into a museum building to protect them from disintegration. Thus, if we had to do just that in Yellowstone then the museum would increase enormously in relative importance; we could no longer class the museum merely as "a species of elaborate label"; it would be that and a whole lot more.

Then, I wonder if the point is clear in respect to Archeological museums? The more of the materials around which the primary interest centers, we have to bring into the museums, the more unbalanced the statement regarding museums as 'species of elaborate labels' becomes. Dwellings are the only features of prehistoric life that are of major interest and importance. Evidences of arts, crafts, ceremonies and other features of their daily life are just as interesting and important. As a matter of fact, the buildings and cultural materials as means of interpreting past life, become the relationship we build upon. And

here we find the museum assuming a place of importance equal to that of the dwellings themselves. We also find the museum becoming more and more an end in itself; the museum would continue to be an entity in itself even if the ruined walls of dwellings by chance vanished. It would appear, therefore, that in archeological parks and monuments the importance of the museum forges to the front line with the dwellings themselves. This fact, it seems, would still hold even if we were to go intensively into the restoration of life-size figures in the act of going about their everyday duties of life. Suppose we did this on a large scale, THE MUSEUM WOULD CONTINUE TO BE THE DEPOSITORY FOR THE PRECIOUS TURQUOISE AND SHELL ORNAMENTS AND CEREMONIAL OBJECTS, TEXTILES, POTTERY, TOOLS, WEAPONS, AND OTHER CULTURAL MATERIALS. Hence, getting down to the case cards, the museum still holds its place of importance alongside the field trips themselves in archeological monuments.

I should not neglect to state that the objective quoted at the beginning of this discussion still applies in a large measure. However, in archeological monuments we want to realize that THE REAL MUSEUM IS THE MATERIALS EXCAVATED AND DISPLAYED AS WELL AS THE DWELLINGS.

Finally, we might say that in the case of parks museums the museum becomes a type or 'species of elaborate label' and the real objects of study are the wonders of nature or the 'out-of-doors'. In the case of archeological museums such as we have in one park and many monuments, the museum becomes (1) in part the 'thing itself' as well as (2) a species of elaborate label.

It would appear, therefore, that although MOST PARK MUSEUMS HAVE ONE PRIMARY CHARACTERISTIC IN BEING SOMEWHAT OF A SPECIES OF ELABORATE LABEL, THE ARCHEOLOGICAL MUSEUMS HAVE A DUAL NATURE.

RELATION OF THE DUAL CHARACTER TO INSTALLATION PROBLEMS.

We are now coming to the principal reason for outlining this discussion, namely, the manner in which this dual character must be taken into account in installations.

In view of this dual character of archeological museums it seems we should have two types of installations:

- A. In the one type the major stories should be the keynote. These should be told graphically with charts, maps and pictures. ; label text should be included but kept to a very minimum. Such subjects for charts must be selected most carefully and the methods of portrayal be most carefully done. THE FAILURE OR SUCCESS OF THE INSTALLATION WILL DEPEND ENTIRELY ON HOW WELL THESE TWO POINTS ARE OBSERVED,

- B. In the second type, the cultural materials themselves must dominate. This is the same as saying that in the Norris region, the natural phenomena in the out-of-doors dominate. The explanatory materials intended to build up proper perspective and kindle appreciation through increased knowledge, are in the Man-made-Museum structure. Thus, in archeological museums the textiles, turquoise ceremonial materials, and other remains of the culture, are in part equivalent to the natural phenomena of the Norris region.

Limited room space in monuments museums makes it difficult to carry out this plan of installation to the fullest. Granting that sufficient space were available, the installation would be pictured something like the following:

1. The first exhibits contacted by the visitor would be chiefly those which orient him to the subject of archeology. Large charts and maps designed to give the visitor the proper perspective would be here and there in the room, and especially in that part of the room first contacted. A CHART, FOR EXAMPLE, ON "THE ANTIQUITY OF MAN ON EARTH" ACCOMPANIED BY ANOTHER LARGE MAP-CHART ON "THE ANTIQUITY OF MAN IN NORTH AMERICA" would comprise ideal subjects in that portion of the museum the visitor first contacts. This would hold as much for the self-guiding museum as for our monuments museums where every party of visitors is personally conducted. CAREFULLY NOTE THAT SUCH SUBJECTS AS ARE SELECTED OCCASIONALLY TO CREATE PROPER PERSPECTIVE MAY NOT REQUIRE ONE SCRAP OF LOCAL MATERIAL TO SUPPLEMENT THEM.
 - a. Tree Ring Charts (Supplementary beam material from local ruins would work in to advantage here).
 - b. Various methods of pottery making explained. (This would require examples of paddle and anvil and goaded soil ware in various stages of manufacture. Perhaps not more than one finished vessel of each of the types would be required.
 - c. Exhibits Foods and their preparation.
 - d. Theories on Migration Routes of Mankind
(Observe here that the stories are primary here while actual local materials are secondary, or are not required at all.)
2. Perhaps there will be as many as a half dozen of these more general exhibits designed to give the proper perspective. WE THEN HAVE A SECOND TYPE OF EXHIBITS IN WHICH THE CULTURAL MATERIALS THEMSELVES ARE DOMINANT. In this type of exhibit more detailed stories are emphasized--stories dealing strictly with the particular culture in the vicinity. Visitors then contact two types of exhibits; (1) the general type designed to build up a perspective of the whole field; and (2) the particular type designed to give more intensive knowledge of the local culture.

Where museum space is limited it is necessary that the cultural materials and the illustrative charts, maps, and specimens be housed in the same rooms. It is possible to work out a very effective installation letting the actual museum materials be woven into the story as frequently as possible. However, if there is a vast amount of museum material for display, the quantity may be so great as to cut down on the effectiveness of a display where, for example, we are wanting to "describe the various methods of making pottery with examples of finished vessels made by each of the methods". One vessel of each kind would suffice here. It wouldn't help matters as far as this one story of pottery making methods is concerned to have two rooms full of pottery there to illustrate the one point. The bulk of the material must be used in some of the other stories. For example, a display of VARIOUS TYPES OF POTTERY DECORATION, THEIR GROWTH AND DEVELOPMENT AND SIGNIFICANCE, OR INTERPRETATIONS OF VESSEL SHAPES would by their very nature require many pieces of pottery. Here we would make use of as many different designs of vessels and of as many types of decorated ware as would contribute to the story under consideration.

It seems that in addition to (1) installations in which the illustrative material is dominant and the artifacts secondary, we should have (2) types of exhibits in which the artifacts are primary and the illustrative material brought in as a medium of organization of this material. Where space is limited, we must make the two types of installation coordinative. When such installation is completed, the dual nature of the museum will be apparent as one studies the organization. In one space will, for example, be a display on "ANTIQUITY OF MAN IN NORTH AMERICA" in which no local artifacts are used; or a big chart and map on "DATES OF CONSTRUCTION OF VARIOUS PREHISTORIC RUINS". Studying these particular exhibits will show no museum materials are used to supplement the chart and map. However, look in another section of the room where the subject of the exhibit is "DESIGNS AND DECORATION OF RED ON BUFF POTTERY AND THEIR INTERPRETATION". To our surprise we may find every scrap of red on buff ware in the museum was used and then no overcrowding was evident. It just narrows down to two types of exhibits; one type which drives home certain broader facts which improve the visitors' perspective of the whole field of archeology; the other the type of exhibits which try to bring out in the clear certain facts about the local cultural materials.

It appears that if we regarded the archeological museum merely as a 'species of elaborate label' to supplement the field trip along the prehistoric dwellings, and neglected to consider the importance of the irreplacable ornaments, textiles, and cultural materials generally, we wouldn't be making the best of our opportunities. I leave the thought here that where the park museum may be a 'species of elaborate label with the cut-of doors as the real museum', the Archeological Museum is that, and still more. The Archeological Museum encroaches

greatly upon the position held by the natural phenomena themselves in the national parks. If this viewpoint is sustained, it necessarily follows that proper museum installation in archeological museums would require a knowledge and understanding of this relationship.

RELATIONSHIP BETWEEN ARCHEOLOGICAL MUSEUMS INSTALLATIONS AND THE VISITOR:

In regard to archeological museums installations the problem arises as to how the general exhibits will be handled in, let us say, a half dozen installations. Considerable duplication will result in the different museums, especially with those exhibits designed to give the visitor a broad perspective of the whole field of archeology before taking up the special local story.

If the visitors to a particular archeological monument visited just that monument, and no others, the problem would be simple and it follows that duplication of exhibits and efforts would be very worth while. In Southwestern Monuments, we do not believe that more than 10 percent of our visitors in any one season visit more than one of the national monuments. This means upwards of ninety percent are being contacted the one and only time during the entire season at any particular monument. The ten percent who have visited other monuments museums, it is true, will recognize some duplication of general materials. However, it appears that the importance of giving the 90 percent a complete story, perspective and all, outweighs the objections that 10 percent of the visitors will be getting some of the general stories twice or three times.

Construction of new connecting roads and improvement of old ones will mean a great increase in the number of visitors who, in the course of a season, will visit several of the monuments. However, I wonder if just now, this is a serious problem?

A survey of the number of visitors at any one monument who have visited one or more others, would help us solve this problem. Just now, I should feel it would be unfortunate to deprive the 90% of the visitors who visit only one monument in a single season of the benefits of these general archeological stories designed to give them a good perspective.

One approach to this problem would be variation in the methods of graphic portrayal of the same general thought at the different monuments. In this way, the visitor who has been at other monuments during the journey, will find the same information presented in another way. Such varied presentation might continue to fascinate the visitor as well as fix the same general facts more firmly in his mind.

When we stop to consider the matter, we find some interesting examples of repetition in our museum work. I want now to consider what is true in the case of several national parks.

Let us take as an example all national parks in which the SCULPTURE OF MOUNTAINS BY GLACIERS is at least a major, if not the outstanding, story. Tackling this subject as an academic problem in logic without reference to any particular mountainous region so sculptured, the following facts are developed:

- A. Glaciers transform V-shaped, stream-cut valleys into U-shaped troughs.
- B. Mountain glaciers originate in enormous snow and ice packs which form on mountain summit areas when the average annual dissipation of the snow and ice by melting and evaporation is less over a period of years or centuries than the amount which accumulates.
- C. Terminal, medial and lateral moraines are found in glaciated mountain valleys and represent material excavated and moved by glaciers.
- D. Serrated crests, cirques and hanging valleys are expected in mountainous regions that have been glaciated.
- E. Glacial polish and striae are usually found on the rock surfaces sufficiently durable to have preserved them.

Points A, B, C, D, and E, are not peculiar to Yosemite, Glacier, or Rainier national parks alone; these points are facts that are true for all glaciated mountainous regions anywhere on Earth. In short, these points represent general facts. All museums in such regions usually attempt to drive home these facts through (1) relief maps and pictures; (2) diagrammatic cross-sections; (3) labels; and (4) specimens, and best of all, actually visiting the places where these facts can be observed first hand.

In (1) Yosemite, (2) Glacier, (3) Rainier, (4) Mount McKinley, (5) Rocky Mountain, (6) Grand Teton, (7) Crater Lake, and perhaps to some extent in (8) Yellowstone and (9) Lassen Volcanic, museums would have to stress certain of the fundamental points common to glaciation in all of them.

Consider Yosemite and Rainier; as far as the exhibits go which explain the way glaciers modify a region riven with stream-cut valleys, IDENTICAL GENERAL FACTS ABOUT GLACIERS WILL BE BROUGHT OUT IN MUSEUM INSTALLATIONS IN BOTH of these great parks. This seems entirely

justified so long as so few people who visit one museum also include the other in the course of a travel season. Even then, it might be to the visitors' advantage to have some of the same fundamental facts brought to his attention a second time. The psychology of the statement just made is this: (1) knowledge would be increased through repetition; and (2) visitors often take a delight in seeing certain facts with which they are already familiar. A familiar face in strange surroundings is always a source of joy. I might meet a friend on the streets of Phoenix and take rather casual notice in recognizing him; but Oh Boy, what a meeting it would be if by chance I met up with him in the heart of Africa, or other strange place! Thus, in regard to the Story of Glaciers at least, we find a great deal of duplication. Repetition not done to excess may be a pillar of strength in our educational system rather than the symbol of weakness. If we unconditionally avoid repetition in our parks and monuments museums, we might be neglecting to use a psychologically sound method of teaching facts to the layman. Then there is the other extreme to consider—that of repetition to the point of tiring the learner. In this case, variation in method of presenting the same facts may be the correct answer.

The results of duplication of general exhibits come down to these points when applied to the monuments:

- A. If we duplicate material of a general nature intended to build proper perspective:
 1. About 10%, and in extreme cases 25 or 30%, of the visitors will find this a duplication of what they saw at another monument or park visited in the course of their summer's travels.
 2. About 90%, or in instances only 70 to 75%, will have the opportunity to visit one, and only one, of the several museums. For this great majority, there is no factor of ~~duplication~~. IF THEY DON'T GET THESE GENERAL PERSPECTIVE-BUILDING PRINCIPLES PORTRAYED AT THIS PARTICULAR MUSEUM THEY MAY HAVE THE BAD FORTUNE NEVER TO GET THEM.
- B. If we eliminate duplicatory explanatory material intended to build perspective, results are:
 1. About 70 to 75%, and perhaps even 90% of the visitors must suffer the lack of those exhibits which (a) orient the particular culture in the whole field of archeology; and (b) tend to give a museum a definite beginning idea and an end. Museums without such would appear to have neither beginning nor end.
 2. The remaining minority of 25 to 30 %, and often as low as 10% would be served through this absence of duplication. As pointed out above, duplication or repetition, skilfully

put into effect, may be turned into a powerful and psychologically sound, method of appealing to the layman. Remember the thrill that comes from meeting familiar faces in strange lands.

In order to make the repetition of general perspective-building installations in several museums psychologically sound for the minority of repeaters as well as the majority of 'one monument' visitors, we should be guided by the following general rules:

1. Hold the number of these general perspective-building exhibits to a minimum; select carefully only the most important lead ideas needed for orienting the particular culture under study. So many of our visitors are 'one monument' visitors, it seems they would suffer if we left out the general exhibits altogether and merely concentrated at each monument on the local culture represented there.
2. Adopt as wide variation of installation and portrayal of general facts as possible where such facts are important to several museums at the same time. Repetition may often prove stimulating to the visitors' appreciation and desire for knowledge, rather than a bore.

Unless we are very certain that 50% or more of our visitors at one archeological park or monument visit at least one or two more in the system, it seems we would be making a grave mistake if we omitted all perspective-building general material and emphasized only a particular part of the story at each monument.

Before abandoning the idea of general exhibits repetition in several monuments and parks shouldn't we first strive to attain pleasing variety in repetition THEREBY TURNING WHAT MAY ON ONE HAND BE A WEAKNESS, INTO A FEATURE OF STRENGTH?

I fear if we limited museums development at individual monuments such that the visitor who travels from one place to another carrying from each monument only a part of a completed story which can only be secured by visits to a whole series of localities, we will have let ourselves be governed by the educational needs of the minority. If we could but formulate a plan of complete stories at all monuments and parks, making each monument or park a complete story, varying such repetition as will arise such that visitors will feel that "they are meeting old friends in new places each time", perhaps we could make repetition a power and advantage rather than something to be avoided. If we are able to solve the problem in this way, rather than emphasizing a limited part of a story at each park or monument, we will have gained in two ways: (1) Each museum will deliver 100% service to its 75 to 90% of all visitors who may never visit another museum in one season; and (2) the 25 to 10% minority will be benefitted by this repetition if such repetition is varied and made psychologically sound.

At each monument we should emphasize in our museums particularly those things WHICH DISTINGUISH IT FROM ALL OF THE OTHERS. If we stress these outstanding qualities of individual archeological parks and monuments, letting such exhibits be central in importance, we can give each museum character of its own. It's true that the general exhibits must not be so extensive that the individual character of the particular story is lost. ~~By taking~~ care to select a minimum number of general exhibits subjects and by using all local cultural materials possible in the local stories to be emphasized, we ought to be able to work out the proper installation at each park and monument.

R.H.R.

Here Bob turns this stencil over to me, Chief, to go ahead and finish up. It seems to me he has said some things in the above article which ought to cause some discussion in the Educational Division. I am quite sure there is a difference between our Monument museums and the average Park museum. It might be worth while, if we could get hold of a specialist who would be capable of doing it, to study and experiment with the people who go through these museums. Do you know whether anybody in our Service ever held a stop watch on one of our museums long enough to find how long the average visitor remained in it and then rearranged the contents to see if that time could be lengthened? It seems to me some experiments along that line might produce some interesting results. Did anyone ever try shifting a label so it didn't apply to the specimen to which it referred, and see how long it was before the first visitor caught it? Did anybody ever seek to analyze the reactions of the first thousand visitors through a museum room with an idea of changing the displays on the basis of the results? It occurs to me that we have been figuring out how the visitor ought to react to our displays and it would be much easier to go ask him and study him and find out how he does react and then change our methods to fit his reactions. Visitors are funny folks on the whole; I've been working with them thirty years and they can still spring a new trick every few days.

Department stores pay men big money to study the flow of crowds and figure out why you can sell more soap on the right hand side of a store than on the left; to find out why a crowd circulates to the right instead of to the left, and so on. They must have faith in the results of these studies for they risk hundreds of thousands of dollars on them. This is a very real branch of research, and to my mind, a very important branch, and I wish we could call upon the Branch of Research and Education for a man who could come out here into the field and study each of these museum problems of our for two or three weeks, giving us some concrete facts on which we could base our methods of display. Big businesses have a way of solving these problems; let us take a leaf from their experience.

Add here is what Hugh Miller contributes concerning the paper end of the Civil Works program:

"This report finds us embarked on our Civil Works program and well out to sea. In certain respects, particularly in the preparation of papers, it may fairly be said we are at sea. The purchase procedure required under the Civil Works allotment seems to be a matter of difficulty, stress and bitterness at almost every moment, and on almost every monument. While it is admittedly a bother to secure competition on small purchases, the requirement may be simply met by securing verbal quotations, either over the telephone or by personal contact. It isn't beneath your dignity to get prices from at least three dealers even on relatively small purchases. If the dealer doesn't want the business badly enough to confirm his quotation in writing, he doesn't deserve it; and there's nothing complicated about writing up an order on Form 10-131 to confirm your purchase from the man whose quotation was the lowest. It's true that if you were going to buy yourself a hat, you would just drop in at a brother Elk's place of business, select something from the stock he carried, and pay the price asked without quibbling. Socially this method is more graceful, but haven't you often, even in personal matters, felt that it was a little shiftless?

"The Civil Works program is an opportunity to get many things done that might otherwise have been postponed for years. We are all wrong if we resent regulations which compel us to spend the allotted funds in a business-like way. Even if we should belong to the tribe which flatters its ego by tirades against Government red tape, it is well to remember that the slight inconvenience of securing competition is nothing compared to the embarrassment which results when a voucher covering a purchase made in good faith is disallowed."

Tom Charles broke into print with his White Sands last month. Here is what H. S. Hunter ran in his column in the El Paso Times:

"Tom Charles, Custodian of the White Sands National Monument, is up in the air--up somewhere about the seventh heaven of delight. Here's a jubilant spasm from him:

"I want to cry on your shoulder a minute. We have finally gotten the promise of the development of the Great White Sands. You will remember that some ten or fifteen years ago, you and I, and Cap Simons, Dr. Woolford, Moe Stevens and a few others banded together to get some way to cross these silvery sands.

"Well, we've got 'er. Superintendent Pinkley stood up on one of the highest peaks of the Sands yesterday and said: 'Tom, we are going to build a road across there.'

"Think of it! The long promised trip that you have agreed to take and we have agreed to give is now in sight. Too bad that Dr. Woolford and Moe Stevens have gone across those other sands some time ago. But maybe you and Cap. Simons can come up and take the first trip over the new road out to where the sands are really good.

"Work is starting at once. Three miles of road will be built into the Rincon of the Sands, then some four or five miles of plated highway will be built back over the sands themselves. Gee, what a sight,

what a thriller! Even Tom Boles with all his entrenchment in the Caverns will look with envy upon us when the landscape man gets his plans worked out and this scenic wonder is put on display.

"I am sure you will be pleased to know that your efforts have finally been rewarded: call Cap. Simons and tell him that we want you both to come up and see the thing, America's Greatest Playground, from the cushions."

"O.K. Tom, now here is an extension of your idea, see what you think of it:

"When you get your road all fixed, your other improvements made, and everything shipshape, let us know and we'll organize a Sunday trip up there, getting everybody to go who can possibly get away. We believe we can assure you of three or four hundred cars from El Paso if the weather's decent."

Needless to say Tom has accepted the offer and we will all look forward to the big day when the road is finished and the parking grounds are ready.

Gay Rogers is our Payroll and Personnel clerk here at headquarters now. She has to wrestle these bum time sheets that come in through the mail into shape and check them up and down and crosswise and then work them up into a pay roll and draw the pay checks to cover them, - - and if she makes a mistake on a pay check, Hugh goes to jail; isn't that something to have hanging over your head? Gay says she likes her work and it would be pretty easy if the boys would take a few days off and read the instructions which we have sent out to them so the stuff wouldn't come in here all messed up. These boys who are so intent on throwing dirt and can't be bothered with making forms out right are going to make up with a lot of rejected vouchers on their hands and they will have to settle with the merchants personally. Bring in a hurry is no excuse to those boys over in the General Accounting Office; you may be in a hurry but you had better be right or your vouchers will get suspended.

Another new man makes his bow this month too. His name is Bud-long and since his first name is Bob and we have one of them around here, he goes under the name of 'Bud.' He is a regular fellow and has been hitting the ball like nobody's business every day since he has landed. Brownie and Gay and Hugh and Bud have handled this Civil Works business up to now and I am proud of the way they have done it. No pay roll has laid in this office overnight when Hugh had checks on hand to pay off.

The other day the Disbursing Clerk over in New Mexico finally came across with her blank checks. The checks arrived here at 11.00 in the morning and five hundred of them went out in the mail that night. You have no idea how much checking and cross checking all this takes. If, with a clerk, a stenographer and a time keeper on some of these 50 or 75 man jobs, we can't get time sheets that are correctly set up, you can readily imagine that these four people handling the business of fourteen such jobs must be busy.

We have noticed that the visitors at Casa Grande are grading high this winter for some unknown reason. Has anyone a reason to offer?

As we go to press, we want to pause here long enough to thank the Engineers and Landscapers for the way they have backed us up in the rush and hurry of the last month. We have to spoof them now and again, Chief, for their own good, otherwise they wouldn't be fit to live with, for they are inclined to get the idea now and again that without them the Park Service would fall apart, whereas the Superintendents and Custodians are inclined to believe that the very strength of the Service is shown by the number of Landscapers and Engineers it can carry and still function.

Just as we have been hammering our own people two or three times in this report for wanting to tangle their paper work all up just to get to throwing dirt a few days earlier; so we have had to watch ourselves and get all the necessary clearances from these two Divisions before we could turn the Custodians loose.

We want to tell you here that they have not failed us; they have jumped their men across a state or two on telegraphic notice to clear us on some engineering or landscape problem, and they always come with a smile! In our Bull Sessions we sometimes get pretty well warmed up; an outsider might think we were peevish; but, so far at least, we have always parted good friends.

And so we want to thank them in your presence as it were for their help in getting things under way and the manner in which they have stood by in our hour of need.

Any time they feel like taking a crack at us we will be glad to furnish them space in this, which we, in a flight of fancy, call our Monthly Report.

Cordially,

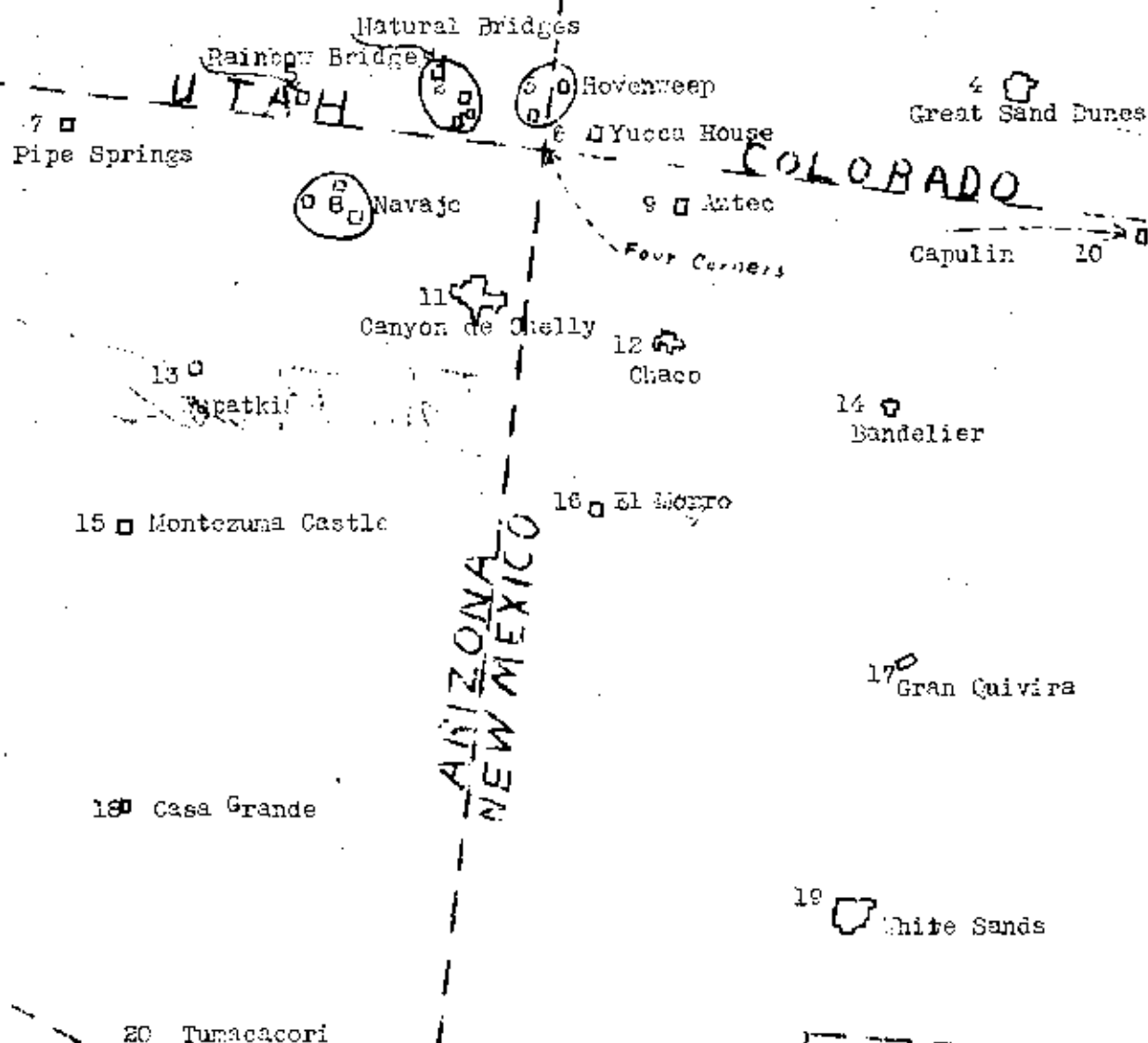
The Boss

SOUTHWESTERN MONUMENTS

AREA

10
Arches

520.24 SQ. MI.



LIBRARY
CARLETON CAMPUS
NATIONAL PARK