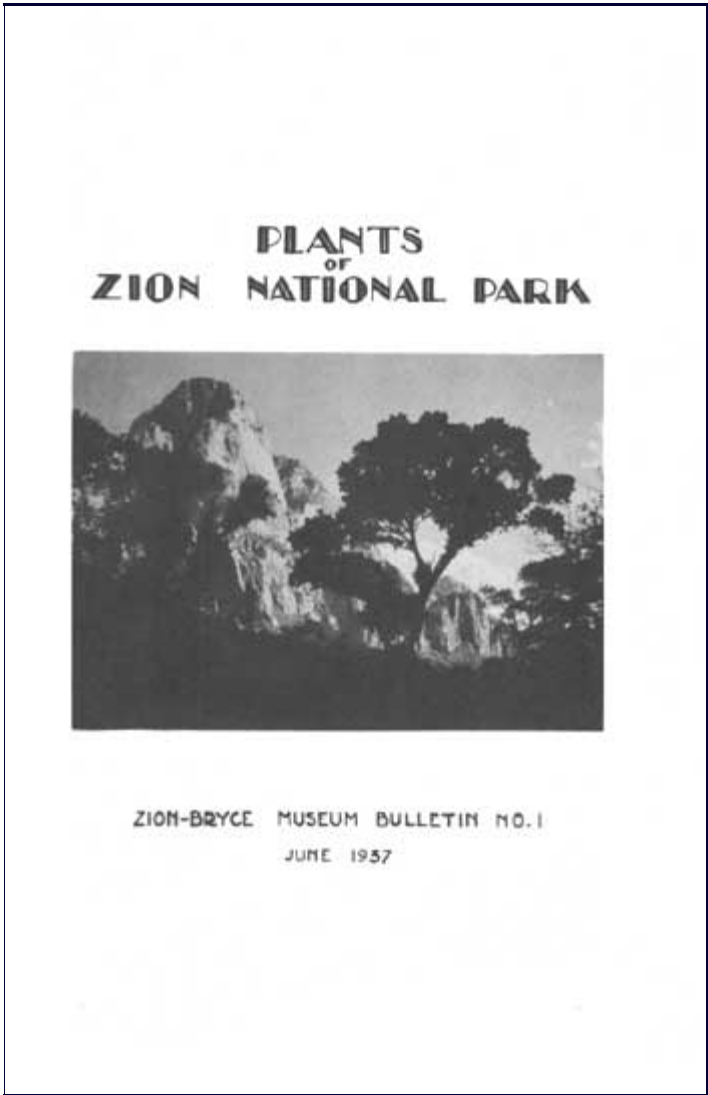


ZION

Plants of Zion National Park



**PLANTS
OF
ZION NATIONAL PARK**



**ZION-BRYCE MUSEUM BULLETIN NO. 1
JUNE 1937**

National Park Service
Zion-Bryce Natural History Association

zion-bryce-bulletin/no-1.htm
31-Mar-2006

ZION

Plants of Zion National Park



National Park Service
Zion National Park

Zion-Bryce
Natural History Association

June, 1937

Zion-Bryce Museum Bulletin

Number 1

This bulletin is one of a series published through the cooperation of the Zion-Bryce Natural History Association and the Naturalist Department of Zion and Bryce Canyon National Parks. The purpose of the series is to supply authoritative information on all features of general interest within the Zion—Bryce region. In order to secure the most widespread use of this information, none of it is copyrighted.

Bulletins are issued at irregular intervals throughout the year. Persons desiring advance notices of future bulletins should send their names to the editor, Park Naturalist C. C. Presnall, Zion National Park, Utah. Additional copies of Bulletin No. 1, at 50¢ each, are also obtainable from him.

P. P. PATRAW, Superintendent

ADVISORY BOARD

Dr. H. E. Gregory, U. S. Geological Survey	Geology
Dr. Charles W. Gilmore, U. S. National Museum	Paleontology
Dr. E. Raymond Hall, Museum of Vertebrate Zoology	Mammalogy
Dr. Joseph Grinnell, Museum of Vertebrate Zoology	Ornithology
Mr. L. M. Klauber, San Diego Museum of Natural History	Herpetology
Dr. Vasco M. Tanner, Brigham Young University	Invertebrate Zoology
Dr. Herbert L. Mason, University of California	Botany
Dr. Harold S. Colton, Museum of Northern Arizona	Archeology

<<< Previous	> Cover <	Next >>>
---------------------------------------	---------------------------------	-----------------------------------

<http://www.nps.gov/zion-bryce/bulletin/no-1a.htm>
31-Mar-2006

ZION

Plants of Zion National Park



June, 1937

Zion-Bryce Museum Bulletin

Number 1

PLANTS OF ZION NATIONAL PARK

Introduction

This bulletin is a popular guide to the plants of Zion National Park (exclusive of algae, fungi, mosses, and liverworts), and has been written in much the same style as that used by the rangers and naturalists when answering questions or guiding hiking parties. Descriptions have been made as simple and clear as possible, and illustrations have been used whenever obtainable. Keys have been usually omitted, and scientific terms used but little, nor are ranges outside the park given except in a few cases; all of this is obtainable in such standard manuals as Tidestrom's "Flora of Utah and Nevada", or Rydberg's "Flora of the Rocky Mountains and Adjacent Plains". Access to the Zion Herbarium is also available to students upon application to the park naturalist.

Persons interested in ecology will find valuable data in Woodbury's technical paper, "Biotic Relationships of Zion Canyon", (Ecological Monographs, Vol. 3, No. 2).

Several persons have contributed to this bulletin. Dr. A. M. Woodbury, formerly park naturalist, laid the foundation by making extensive collections, and issuing a mimeographed check list in 1929. In 1937 a revised check list was prepared by Ranger—Naturalist K. E. Weight, after two seasons of collecting. Identifications were made chiefly by the U. S. National Museum, and a few by each of the following: Dr. A. O. Garrett, Dr. Walter Cottam, the New York Botanical Gardens, the University of California, and the Bureau of Plant Industry. Supplemental collecting has been done by Pauline Mead Patraw, Gordon Y. Croft, L. F. Keller, T. B. Plair, and C. C. Presnall. The vegetation type map prepared by T. B. Plair has furnished considerable data on distribution. Photographs are credited as they appear in the text; lime drawings were made and contributed by Ruby Davis Presnall. Drafting of all this material into its present form was done by Park Naturalist C. C. Presnall, assisted by Pauline Mead Patraw.

<http://www.nps.gov/zion-bryce/bulletin/no-1b.htm>
31-Mar-2006

ZION

Plants of Zion National Park



June, 1937

Zion-Bryce Museum Bulletin

Number 1

PLANTS OF ZION NATIONAL PARK

Vegetation and Climate

The vegetation of Zion National Park is an interesting mixture of desert and mountain flora, due to the contrasting kinds of country within the park, which is located on the boundary between the high cool plateaus of Utah and the hot desert of the southwest. Here, at the southern edge of the Markagunt Plateau, the Virgin River (a tributary of the Colorado) has cut many deep canyons that open out on the deserts to the south; so that the park consists of three kinds of country, each with its distinctive climate and vegetation: cool plateaus 6500 to 7500 feet altitude in the north; a small strip of hot desert below 4000 feet altitude in the south; and a network of canyons between, which have an intermediate climate.

The plateaus, including numerous flat-topped peaks and mesas, are covered with chaparral and forests in which yellow pine is the dominant tree, with douglas firs and aspens in moist places. This indicates that they are in what is termed the Transition Zone, or Yellow Pine Belt; in other words, the climate and vegetation is similar to that found at low altitudes in the northern states where there is a transition between hot southern climate and the colder conditions of Canada.



Typical plateau scene in Zion National Park, showing oak chaparral and a small grove of quaking aspen in front of the belt of yellow pines and firs, — N.P.S. photo.

In the canyons, between 7000 and 4000 feet altitude, the climate is somewhat warmer, usually too warm for yellow pines, but favorable for such trees as Utah junipers and the pinyon pines, which form a sparse pygmy forest on all the dry slopes and flats between these altitudes. Along stream banks and other moist places in the canyons the firs and aspens of the plateaus are usually replaced by cottonwoods, ashes, and boxelders. This belt of climate and vegetation is termed the Upper Sonoran Zone.

Along the southern border of the park, where the canyons open out upon relatively flat semi-desert country, the pygmy forest gives way to desert chaparral, in which creosote bushes and black brush are the dominant shrubs. This is known as the Lower Sonoran Zone, and although only a few square miles of park territory are within this zone, yet it is important botanically because of the large number of species peculiar to it, and because of the interesting ways in which many of these species survive the extreme heat and drought.



Typical Zion Park scene, showing various vegetation types on the temperate plateaus, the warm talus slopes and semi-barren rocks, and the cool narrow canyons. —N.P.S. photo.

These three climatic zones can be easily recognized by any park visitor. Desert shrubs indicate Lower Sonoran Zone, pygmy forest indicates Upper Sonoran Zone, and yellow pines indicate Transition Zone. The vegetation is so naturally divided into these three groups that in this bulletin the distribution of many plants is given simply by zones.

However, one should not think that as soon as he passes above an altitude of 7000 feet on a trail or road, he will abruptly pass from scrub junipers to stately yellow pines. The change is always gradual, and may occur 1000 feet or more above or below the 7000-foot average. In a shaded canyon the climate will be much cooler at 5500 feet than at 6500 feet on a sunny south slope. For example, in going up the West Rim Trail, one finds yellow pines and aspens growing in a shady spot above Scout Lookout at 5600 feet, while at 7200 feet, on the south slope of Horse Pasture Plateau he will pass through groves of pinyon and juniper. The complex system of canyons in Zion causes many such reversals of the normal zonal distribution of plants. In this region the life zone idea should be considered as the basic pattern in which intricate variations have been produced by differences in sunlight, moisture, and soil.

The most noticeable of these variations is to be seen in the bottom of nearly every canyon, where much moisture and shade favor the growth of Transition or even Canadian Zone species no matter what may be the actual altitude. In canyons where water seeps continually from the cliffs there are great "hanging gardens" of ferns and other plants that would normally be found at a much higher altitude. The Narrows is the classic example of this, but dozens of other canyons have the same type of vegetation.

Aside from zonal distribution, the climate produces another entirely different phenomenon—a yearly cycle of blooming periods. The

moisture and moderate temperature of spring causes the most varied flower display of the year during March, April and May. In early summer, as the result of a hot drouth period during June, there are only a few species in bloom, mostly night-bloomers. From August to October the late summer thunder storms cause a second flower display nearly equalling that of the spring months.

(Note: Authorities for scientific names have been omitted, in the interest of economy of space. Nomenclature is chiefly according to the "Flora of Utah and Nevada", by Tidestrom. In grasses we have followed "Manual of the Grasses of the United States" by Hitchcock; and in trees, "Check List of the Forest Trees of the United States" by Sudworth.)



One of the many "hanging gardens" in The Narrows, where seepage water in a cool shaded nook has produced a luxuriant growth of ferns, grasses and flowers.

[<<< Previous](#)

[> Cover <](#)

[Next >>>](#)

<http://www.nps.gov/zion-bryce/bulletin/no-1c.htm>
31-Mar-2006