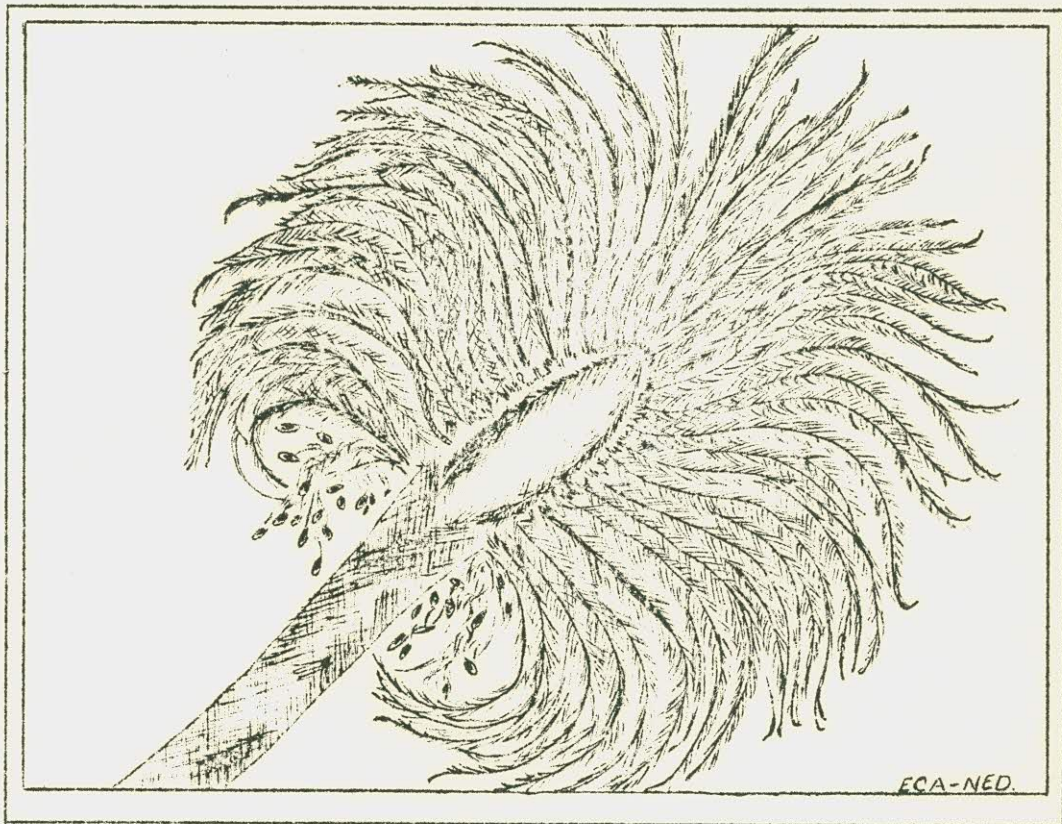


NATURE NOTES

Crater Lake National Park

- OREGON -



ANEMONE ~ WIND-FLOWER
(CROSS-SECTION)

VOLUME XI ~ JULY 1938 - NUMBER 1.



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CRATER LAKE NATIONAL PARK

NATURE NOTES

Volume XI

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Number 1

Nature Notes from Crater Lake National Park are issued during the summer months. These pamphlets contain articles describing the natural features of the Park, Oregon Caves National Monument and Lava Beds National Monument, the two monuments being administered by the staff of Crater Lake National Park. Copies of Nature Notes may be obtained from the Park Superintendent, Crater Lake, Oregon. The reprinting of the articles appearing in Nature Notes is encouraged. Please give credit to the pamphlet and author.

E. P. Leavitt
Superintendent

John E. Doerr, Jr., Editor
Park Naturalist

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by Nancy Elliott Doerr
from a photograph by Elmer C. Aldrich

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by Elmer I. Applegate

PREFACE

CRATER LAKE NATIONAL PARK

The park includes an area of 250 square miles on the crest of the Cascade Range in southern Oregon. The area was established as a national park in 1902, preserving the unsurpassed scenic beauty of Crater Lake, a deep lake, the clear fresh water of which is famous for its everchanging hues of blue. Its setting is unique. The lake, having an area of 20 square miles, is cupped within the crater of an extinct volcano. Cliffs 500 to 2000 feet high completely surround the lake. The crater walls are partially mantled with hemlock, fir, and pine trees. On the gentle outer slopes of the mountain which one ascends in approaching Crater Lake there are deep canyons, magnificent forests and open meadows supporting a colorful display of mountain wild flowers. Hiking and fishing are popular outdoor sports during the summer months. Skiing is popular in the winter, the park being accessible throughout the winter months by the west entrance road from Medford and the south entrance road from Klamath Falls.

OREGON CAVES NATIONAL MONUMENT

This national monument, an area of 480 acres, is located in the Siskiyou Mountains in southwestern Oregon. The caves, named "The Marble Halls of Oregon" by Joaquin Miller, are truly marble halls. Underground water penetrating to great depth along fractures in the marble formation has dissolved out an extensive system of chambers. Water dripping from the ceilings and walls has decorated the halls and passageways with fantastic stalactites and stalagmites which stimulate one's imagination as well as one's appreciation of the beauties of nature in caverns never touched by sunlight. In the magnificent forest around the cave entrance there are trails along which one gets inspiring views of forest-covered mountains and valleys. Along the trails one can observe many species of trees, mammals, and birds.

LAVA BEDS NATIONAL MONUMENT

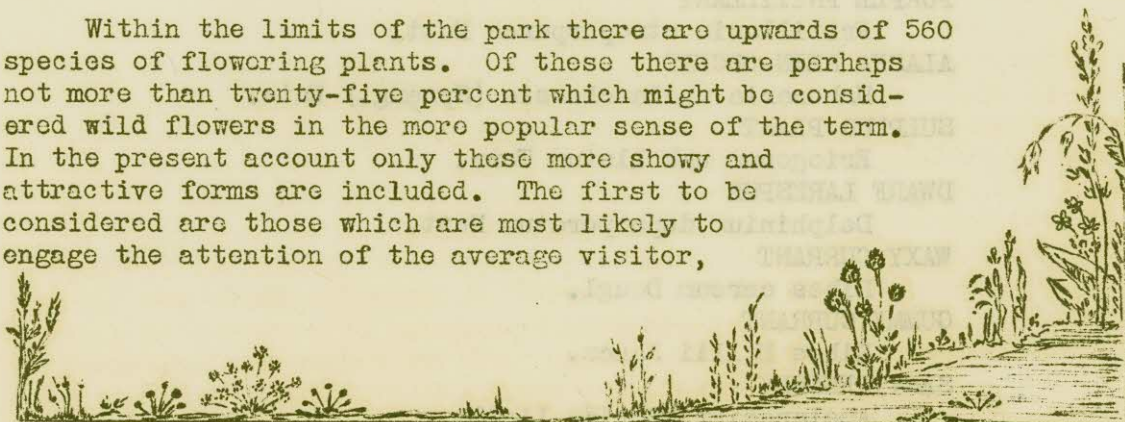
Located in northeastern California, the monument includes an area of 45,000 acres. As the name suggests, volcanic formations, some of quite recent origin, are of greatest importance. There are hundreds of lava tubes which were once the passageways for streams of molten lava. Volcanic cones rise above the general level of the adjacent country. There are excellent examples of various types of lava. Within the monument there are interesting historical features including battlefields of the Modoc War of 1872-73. There are important ethnological and archaeological features. Petroglyphs on cliffs and pictographs in caves are evidence that the region was inhabited by primitive people long before the coming of the white man.

The Editor

The FLOWERING SEASONS of CRATER LAKE PLANTS

Most of the Crater Lake National Park area is occupied by the truncated cone of Mt. Mazama, the crater of which cups the lake. The basal altitude is about 4,000 feet, culminating in the higher points of the crater rim at approximately 8,000 feet. Mt. Scott on the eastern margin is nearly a thousand feet higher. For a considerable portion of the year the park is covered by snow. Even at the south entrance, which reaches the edge of the level valley, not infrequently there are remnants of snowdrifts until late in May; and not before July is the ground entirely bare on the south rim. Rarely drifts remain a month later. Consequently the flowering season is very short. Usually there are few, if any, flowers out before the first of June; and the season is practically over by the middle of September. Beginning at the lower levels, they continue up the mountain slopes following the retreating snow. In general there is a gradual replacement by other forms. Some of the lower forms, more adaptable, find themselves at home on the higher reaches. Those, however, for the most part, ascend the warmer, more exposed slopes, just as plants of the upper levels tend to drop down the cold streams and shady sides of canyon walls. Radiating glacier valleys and stream-cut canyons, wet meadows, bogs, rocky walls, talus slopes, pumice flats, forest areas--all these are among the local contributing factors in distribution and time of flowering.

Within the limits of the park there are upwards of 560 species of flowering plants. Of these there are perhaps not more than twenty-five percent which might be considered wild flowers in the more popular sense of the term. In the present account only these more showy and attractive forms are included. The first to be considered are those which are most likely to engage the attention of the average visitor,



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such plants are to be seen along the main thoroughfares, improved trails, about camp grounds and other more frequented places. A second group includes those found off the beaten paths and in more distant and inaccessible places, in reach of visitors who have more time and interest in plant exploration.

The growing time is so brief that it is difficult to draw the line between seasons. Late spring soon merges into early fall. By the first of August, normally, before the first flowers are gone, most of the latest plants are in bloom; thus for a short season nearly all are in flower at the same time. So in an attempt to list the plants with reference to their time of blooming, it seems convenient to divide them into two groups: (A) the earliest or lower level flowers typically associated with the ponderosa pine, as at the south entrance; and (B) the later appearing flowers of the upper slopes, characteristic of the hemlock forest area, as for example around Park Headquarters. Between the hemlock and the ponderosa pine is a more indefinite belt dominated by lodgepole pine. A similar situation exists in the more open spaces above the main hemlock belt, extending up to the highest points, such for example as Cloudcap and Liao Rock. This area is typified by the white-bark pine, a timberline tree of the higher peaks of the Cascades and other ranges. Much of the moisture is here lost in the loose soil and by the more rapid evaporation characteristic of high altitudes. These conditions limit the plants both in number of species and of individuals. While a few mat plants with well developed root systems and other adaptive features are peculiar to this windswept area, and a lesser number of the ponderosa pine association occur here, most of them are found in the main hemlock region below.

Group A

The earliest or lower level flowers typically associated with ponderosa pine, arranged in accordance with their respective habitats.

(1) Dry Land Plants

PURPLE FRITILLARY

Fritillaria atropurpurea Nutt.

ALASKA REIN-ORCHID

Habenaria unalaschensis (Spreng.) Wats.

SULPHUR PLANT

Eriogonum umbellatum Torr.

DWARF LARKSPUR

Delphinium depauperatum Nutt.

WAXY CURRANT

Ribes cereum Dougl.

GUMMY CURRANT

Ribes Hallii Jancz.

SERVICEBERRY

Amelanchier florida Lindl.

GLANDULAR FIVE-FINGER
Potentilla glandulosa Lindl.
 BITTER-CHERRY
Prunus emarginata (Dougl.) Walp.
 BITTERBRUSH
Rhus tridentata (Pursh) DC.
 NAKED-FRUIT ROSE
Rosa gymnocarpa Nutt.
 MOUNTAIN ASH
Sorbus sitchensis Roem.
 DOUGLAS SPIRAEA
Spiraea Douglasii Hook.
 SCOULER WILLOW
Salix Scouleriana Barr.
 SQUAW CARPET
Ceanothus prostratus Benth.
 SNOWBRUSH
Ceanothus velutinus Dougl.
 FIREWEED
Epilobium angustifolium L.
 OREGON SUNSHINE
Eriophyllum lanatum (Pursh) Forbes
 YELLOW COLLONIA
Collomia grandiflora Dougl.
 SCARLET GILIA
Gilia aggregata (Pursh) Spreng.
 DOUGLAS PHLOX
Phlox Douglasii Hook.
 CURLY-BLOOM
Phacelia heterophylla Pursh.
 WESTERN HOUND'S TONGUE
Cynoglossum occidentale Gray
 PINE PAINTERBRUSH
Castilleja pinetorum Fernald.
 HEART-LEAF ARNICA
Arnica cordifolia Hook.
 ENTIRE-LEAF RAGWORT
Senecio integerrimus Nutt.
 GREEN-LEAF MANZANITA
Arctostaphylos patula Greene.
 PINEDROPS
Pterospora andromeda Nutt.
 SNOWBERRY
Symphoricarpus albus (L.) Blake

(2) Streambank and Meadow Plants

SLIM SOLOMON
Smilacina sessilifolia Nutt.
 MONK'S HOOD
Aconitum columbianum Nutt.

BANEBERRY

Actaea spicata arguta Torr.

COLUMBINE

Aquilegia formosa Fisch.

HENDERSON BUTTERCUT

Ranunculus occidentalis dissectus Hend.

BIG-LEAF AVENS

Geum macrophyllum Willd.

ST. JOHNSWORT

Hypericum Scouleri Hook.

MEADOW PAINTBRUSH

Castilleja miniata Dougl.

COMMON MONKEYFLOWER

Mimulus guttatus DC.

Of the foregoing lists, the earliest to bloom are purple fritillary, slim Solomon, Douglas phlox, gummy currant, waxy currant, serviceberry, bitter-cherry, ragwort and manzanita.

Group B

The later appearing flowers of the upper slopes, characteristic of the hemlock forest area, arranged in accordance with their respective habitats.

(1) Dry Land Species

SPOTTED CORALROOT

Corallorrhiza maculata Raf.

MERTENS CORALROOT

Corallorrhiza Mertensiana Bong.

RATTLESNAKE PLANTAIN

Peramium decipiens (Hook.) Piper

GORMAN STONECROP

Gormania Watsoni Britton

NEWBERRY KNOTWEED

Polygonum Newberryi Small

PYROLA-LEAF ERIOGONUM

Eriogonum pyrolaefolium coryphaem T & G.

MOUNTAIN SORREL

Oxyria digyna (L.) Camp.

PUSSY-PAWS

Calyptidium umbellatum (Torr.) Greene

WESTERN WINDFLOWER

Anemone occidentalis S. Wats.

CRATER LAKE SANDWORT

Arenaria punicola Coville & Leiberg

BROAD-POD ROCKCRESS

Arabis platysperma Gray

CRATER LAKE CURRANT

Ribes erythrocarpum Coville & Leiberg

TOLMIE SAXIFRAGE

Saxifraga Tolmaei Torr. & Gray

FAN-LEAF FIVE-FINGER

Potentilla flabellifolia Hook.

CREEPING RASPBERRY

Rubus lasiococcus Gray

DESERT LUPINE

Lupinus aridus Dougl.

MAT MANZANITA

Arctostaphylos nevadensis Gray

PRINCE'S PINE

Chimaphila umbellata (L.) Nutt.

STRIPED PYROLA

Pyrola picta Smith

ONE-SIDED PYROLA

Pyrola secunda L.

BLUE STICK-SEED

Hachelia Jessiae (McGrogg.) Brand

APPLEGATE PAINTBRUSH

Castilleja Applegatei

SPIDERWEB PAINTBRUSH

Castilleja pilosa arachnoidea (Greenman) Jepson

DWARF MONKEYFLOWER

Mimulus nanus Hook. & Arn.

LOUSEWORT

Pedicularis racemosa Dougl.

DAVIDSON PENTSTEMON

Pentstemon Menziesii Davidsonii (Greene) Piper

ROCK PENTSTEMON

Pentstemon rupicola Howell

RED ELDERBERRY

Sambucus racemosa callicarpa (Greene) Jepson

BLACK TWINBERRY

Lonicera involucrata Banks

RED TWINBERRY

Lonicera conjugialis Kell.

COVILLE ASTER

Aster lodophyllus Gray.

BLOOMER RABBITBRUSH

Chrysothamnus Bloomeri (Gray) Greene

THOROUGHWORT

Eupatorium occidentale Hook.

(2) Wet Land Species

WESTERN TOFIELDIA

Tofieldia occidentalis S. Wats.

GREEN CORN-LILY

Veratrum viride Ait.

BOG ONION

Allium validum S. Wats.

ST. JOHN YELLOW LAMBSTONGUE

Erythronium grandiflorum pallidum

BLUE-EYED GRASS

Sisyrinchium idahoense Rick.

LADIES' TRESSES

Spiranthes Romanzoffiana Sharn. & Schl.

WHITE BOG-ORCHID

Habenaria dilatata (Pursh) Hook.

GREEN BOG-ORCHID

Habenaria stricta Lindl.

SMARTWEED

Polygonum bistortoides Pursh

SPRING-BEAUTY

Claytonia lanceolata Pursh

GORMAN BUTTERCUP

Ranunculus Gormanii Greene

BREWER MITREWORT

Mitella Breweri Gray

DENSE-FLOWERED SPIRAEA

Spiraea densiflora Nutt.

KLAMATH LUPINE

Lupinus latifolius ligulatus (Greene) C. P. Sm.

YELLOW WOOD VIOLET

Viola glabella Nutt.

WHITE BOG VIOLET

Viola Macloskeyi Lloyd

MOUNTAIN LAUREL

Kalmia polifolia microphylla Rehd.

ALPINE SHOOTING-STAR

Dodecatheon alpinum Greene

LEWIS MONKEYFLOWER

Mimulus Lewisii Pursh.

PRIMROSE MONKEYFLOWER

Mimulus primuloides Benth

ELEPHANT HEADS

Pedicularis groenlandica Retz.

GRAY BLUE FLEABANE

Erigeron salsuginosus (Richards) Gray

Among the very earliest of the last list are: yellow lambstongue, spring beauty, western windflower and alpine shooting-star.

The following list is made up of flowers not included in any of the foregoing, plants found in outlying sections not often seen by

visitors. They are more common on the west slope of the Cascades, especially in the deep glacial valley of Redblanket Creek which at the southwest corner of the park drops to about 3700 feet altitude. This provides a gateway for the entrance of many westcoast plants. A few of these plants reach the east side via the Klamath Gap, reaching the park up Annic and Sun Creeks.

FAIRY BELLS

Disporum oregonum (S.Wats.) Benth. & Hook.

TWISTED-STALK

Streptopus amplexifolius (L.) DC.

WAKE-ROBIN

Trillium ovatum Pursh

OOKOW

Brodiaea pulchella (Salisb.) Greene

WHITE BRODIAE

Brodiaea hyacinthina (Lindl.) Baker

CAT-EAR

Calochortus elegans Pursh

LARGE CAMAS

Camassia Leichtlinii (Baker) Wats.

KLAMATH LAMBSTONGUE

Erythronium klamathense Applegate

WASHINGTON LILY

Lilium Washingtonianum Kell.

CALIFORNIA IRIS

Iris californica Leicht.

TWAYBLADE

Listera carina Piper

WOOD-ANEMONE

Anemone deltoidea Hook.

DRUMMOND WINDFLOWER

Anemone Drummondii S. Wats.

MARSH MARIGOLD

Caltha biflora DC.

TALL LARKSPUR

Delphinium scopulorum glaucum Gray

DEER-FOOT

Achlys triphylla (Smith) DC.

MOUNTAIN OREGON GRAPE

Mahonia nervosa (Pursh) Nutt.

PIPER OREGON GRAPE

Mahonia Piperiana Abrams

INSIDEOUT

Vancouveria hexandra (Hook.) Morr. & Dec.

GRASS OF PARNASSUS

Parnassia intermedia Rydb.

SYRINGA

Philadelphus Lewisii Pursh

OCEAN-SPRAY

Holodiscus discolor (Pursh) Maxim.

THIMBLE-BERRY

Rubus parviflorus Nutt.

BAKER VIOLET

Viola Bakeri Greene

ROUND-LEAF VIOLET

Viola orbiculata Geyer

CLARKIA

Clarkia rhomboidea Dougl.

CANADA DOGWOOD

Cornus canadensis L.

NUTTALL DOGWOOD

Cornus Nuttallii (T. & G.) Coville

MADRONO

Arbutus Menziesii Pursh

ROUND-LEAF PYROLA

Pyrola rotundifolia incarnata DC.

STAR-FLOWER

Trientalis europae latifolia Torr.

SIMPLE GENTIAN

Gentiana simplex

MAZAMA COLLOMIA

Collomia mazama

WESTERN JACOBS LADDER

Polemonium occidentale Greene

NARROW-LEAF PHACELIA

Phacelia linearis (Pursh) Holzinger

MCBRIDE LUNGWORT

Mertensia paniculata subcordata (Greene)

NARROW-LEAF SKULLCAP

Scutellaria angustifolia Pursh.

SCOULER BELLFLOWER

Campanula Scouleri Hook.

BLUE BELLFLOWER

Campanula prenanthoides Dur.

ALICE FLEABANE

Erigeron Aliceae Howell

GOLDENROD

Solidago elongata.

by Elmer I. Applegate
Ranger Naturalist.
1937



DOGWOOD

Cornus canadensis L.