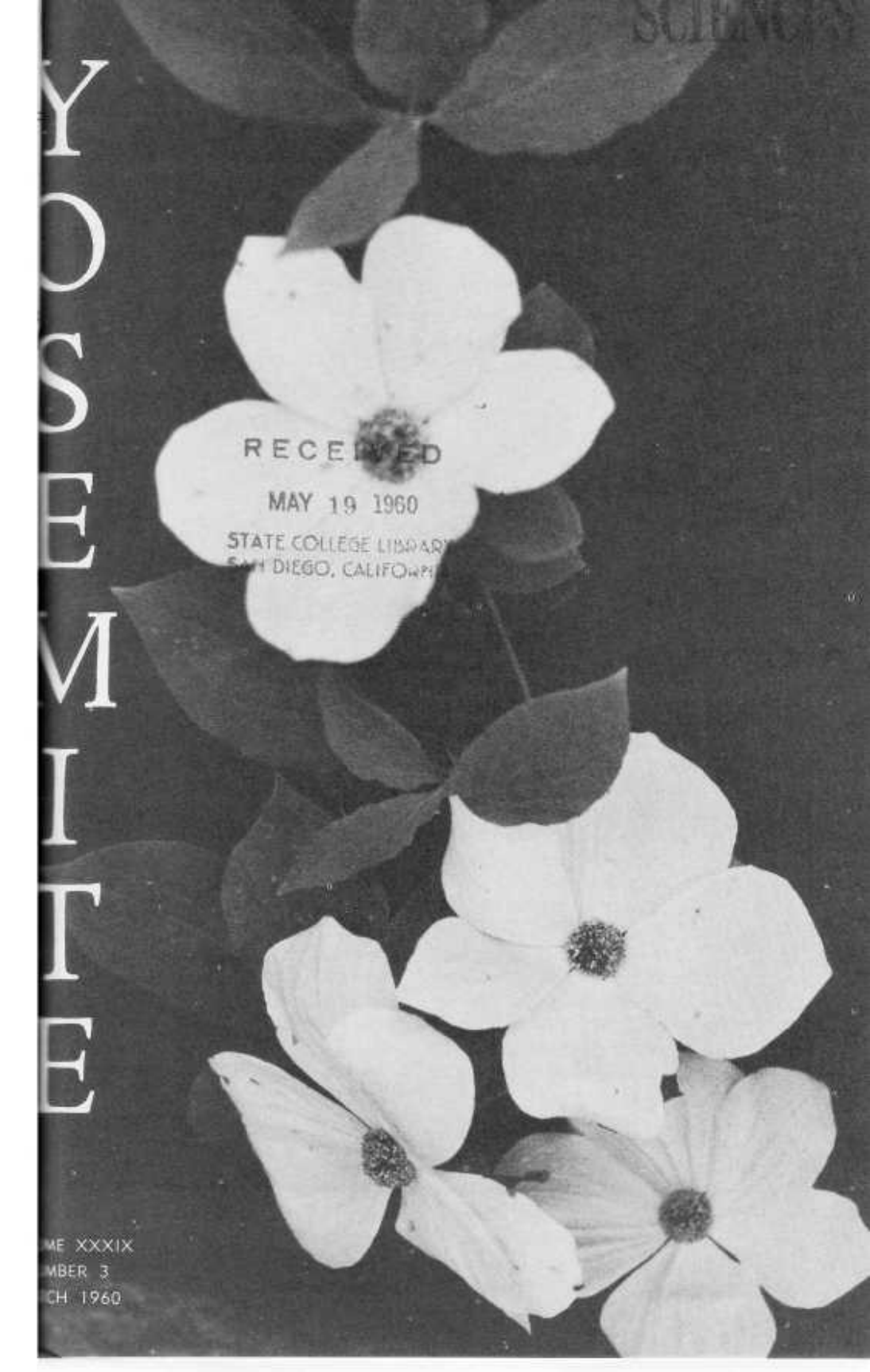


ME XXXIX
MBER 3
CH 1960

In cooperation with the National Park Service.

COVER—Flowers of the Pacific Dogwood. —*Anderson, NPS*

yosemite
NATURE NOTES

Since 1922, the monthly publication of the National Park Service and the Yosemite Natural History Association in Yosemite National Park.

VOLUME XXXIX MARCH 1960 NUMBER 3

THE PACIFIC DOGWOOD

Robert W. Crippin, Ranger-Naturalist

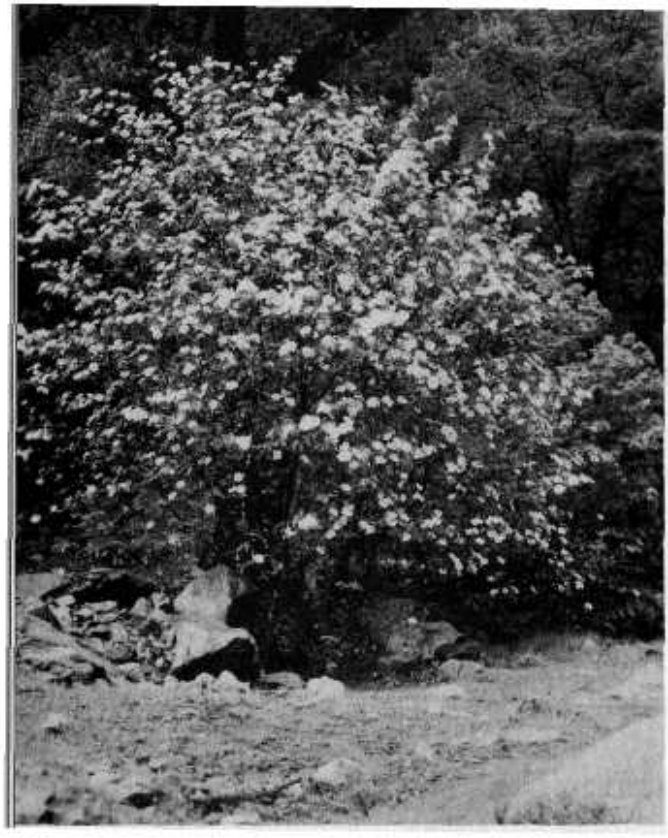
One of the most beautiful of Yosemite's deciduous trees is the Pacific dogwood. In spring its delicate, widely opened blossoms make it very picturesque. During the heat of summer its bright green leaves contrast sharply with the dark shades of the conifers. In fall these same leaves turn a brilliant red, changing the underforest into a spectacle of color. Finally, in the dead of winter, sagging branches, devoid of foliage, support interesting patterns of snow and ice.

A moisture-loving plant, dogwood is usually found along streams or in shady forests where soil evaporation is very slow. Here it is most often associated with Douglas-fir or giant sequoia. Although occasionally found as high as 7000 feet, its most general location is at lower elevations of 4000-5000 feet. On the valley floor dogwood may be seen near Happy Isles, all along the Merced River and in the vicinity of Fern Springs and Mirror Lake. Outside the valley it is prominent at Mariposa Grove and along the Wawona and Big Oak Flat roads.

In Yosemite National Park dogwoods reach heights of from twenty to thirty feet and are from ten to twenty inches in diameter. The trunk is generally straight and is characterized by a smooth, thin, dull gray bark. Crowns are narrow and composed of short branches. Leaves are opposite with prominent pinate veins running out to the margins in a graceful curve.

Flowers of the Pacific dogwood are unusual! The big, white "petals" are in reality bracts. True dogwood flowers are actually crowded into a dense button in the center of these petal-like structures.

Small clusters of shiny red berries



The spring dogwood display brings many people on special trips into Yosemite National Park.

—*McIntyre, NPS*

contain seeds and are the fruit of the dogwood. These berries are readily eaten by birds and small mammals.

Dogwood belongs to the plant genus *Cornus*, a name which was derived from the Latin word for "horn", referring to the very tough, hard, hornlike wood.

David Douglas, the first botanist to observe this tree, saw it in the Columbia River Basin in 1825. He mentioned the use of its tough wood by the Canadian explorers for masts and spars for their canoes. However he made an error in describing it as a variety of the eastern flowering dogwood.

First to recognize this shrub as a new species was the botanist Thomas Nuttall. James Audubon gave it the name *Cornus nuttalli*, in honor of his friend.

Audubon had started a series of American bird portraits. When he began work on the band-tailed pigeon plate, he wanted a typical western tree. In the selection of such a plant he sought help from Nuttall who had collected extensively in the far west. Nuttall sent him specimens of the then undescribed Pacific dogwood. At the suggestion of Nuttall, Audubon described and named this tree. It was the only plant to be described by James Audubon.

The exact origin of the name dogwood is debatable. One version is that the twigs of a European species were used widely in the making of meat skewers (miniature daggers) to hold pot-roasts together. For that reason the plant came to be called the daggerwood, a name which probably soon became shortened to dogwood. Another theory is that the name originated from the old English practice of steeping the bark in

make a solution for washing mangy dogs.

Dogwood bark has been used successfully in place of quinine as an antimalarial drug and powdered, it can be used as an effective tooth powder. In some species, bark from roots gives a vivid scarlet dye. The wood was used by early settlers in the making of such tools as mallets and hammers.

The true flowers, possessing only stamens and pistils, are clustered in the center "button". Cream-white scales or bracts surround the "button" and are sometimes improperly regarded as "petals."

—Anderson, NPS

THE ORIGINAL HELICOPTER

Charles B. Vollmer, Ranger-Naturalist

Man has emulated nature's "firsts" in many of his inventions. Early last summer I had the opportunity to be the subject of Goshawk divebombing tactics. With the discovery of the western world, and eventually its bird life, men who dreamed about the possibility of flight must have looked longingly at the hummingbird. From the design of early helicopters, one would conclude that the inventors were attempting an imitation of these birds. Old motion pictures show one version with flapping wings, another with an oscillating circular wing.

Perhaps no other avaian friend amazes us more than this minute expert of aerial versatility. The diving pursuit on bees who invade their territory is well known. One observer has heard the impact of the hummingbird's beak against or into the bee.

The appearance of the rufous hummingbird in the vicinity of Happy Isles in Yosemite National Park during the period of July 15 to August 15, is not unusual. But the arrival of so large a number, and their concentration in this moist area last summer aroused my interest and curiosity. So profuse was the wooly mint here that the migrating hoards had sufficient food.

Humming birds are unique to the Western hemisphere, with the vast majority of the five-hundred species inhabiting the tropics.[1] Of the eighteen or so species that come into the United States, only the ruby throated hummingbird is found east of the Rocky mountains. The western states are blessed with the remainder.

The rufous hummingbird breeds on the Pacific slopes of North America from about latitude 44° (Oregon) to Lat. 61° (in Alaska), during the months of March and April.[2] Late migrants may be seen in California in May or even June.[3] Then in the last week of June the male parent bids farewell to his spouse and young; for the call of migration is strong and cannot be denied. Two or three weeks later the females and their young set off for their winter home in southern Mexico.[4] Yosemite valley provides a pleasant and nutritous stop-over for a period of nearly a month.

During this month I had the opportunity to observe these visitors at various time of day. Whenever I arrived many were at work on the blossom of the wooly mint. The antics of these wee birds amaze the layman and the ornithologist alike. The exact aerodynamics of their maneuvering and hovering flight is not known to me. They are said to achieve flight in excess of sixty miles per hour.[5] Flight in any direction and hovering is made possible by wing beat of seventy per second.[6]

Identification of females in the field is next to impossible. In the male the back and head is bronzy green blending to rufous on rump and tail coverts. The throat is lightly speckled with brown on gray. A white partial collar extends centrally into the breast, giving way to a rufous breast and tail coverts. Tail feathers blend

darker on the ends, with white on the outer edges. Young males appear to have more rufous above and especially more rufous on the rump. The gorget is small, but definitely a metallic red.

What confused me for a while was the apparent mating maneuvers of the males. Mr. W. J. Fitzpatrick, an ornithologist with many years in Yosemite Valley, kindly came to my aid with the suggestion that this was a pseudo-mating procedure of the young males. Their rapid diving flights swings in wider and wider arcs about a female. Vertical flights with females, go as high as the tallest Douglas-fir. Each resembled the adult male's courting, which these youngsters had never observed. These flights were repeated again and again while I sat for hours observing them.

What was this premature mating behavior? Could it be a mother's instruction in the fine art of courting? Or was it an early expression of an urge, that needed no learning in these young males of two or three months?

---

1. Robert S. Lemmon, *Our Amazing Birds*; Doubleday & Co., Inc. Garden City, New York, 1952, pp. 15-16.
2. William Leon Dawson, *The Birds of California*; South Moulton Co., San Francisco, California, 1923. Page 930.
3. Ibid.
4. Ibid.
5. Robert S. Lemmon, *Our Amazing Birds*, etc.
6. Ibid.

Since the beginning of the interpretive program in Yosemite National Park in 1920, bird walks have played an interesting and important role.

—*Anderson, NPS*

The stagecoach ride over the Big Oak Flat Road was an exhilarating experience for many earlyday visitors to Yosemite Valley.

—*Boysen*

I think we all agree that a national park is not merely scenery. A national park embodies something that cannot be found everywhere — it embodies history, a way of life, primitive experience, early environment. It has the elements capable of providing that lifting of the spirit for which modern civilization is willing to pay so much. A national park is specifically dedicated to these intangible and imponderable qualities. Above all, national features in a national park should have validity.

—Olaus J. Murie

ADDITIONS TO THE VERTEBRATE FAUNA OF YOSEMITE

John D. Cunningham, Ranger-Naturalist

Since publication of Walker's *Reptiles and Amphibians of Yosemite National Park* (Yosemite Nature Notes, 25(1): 1-48) and Parker's *Mammals of Yosemite National Park* (Yosemite Nature Notes, 31(6):52-105), three vertebrates new to the fauna of Yosemite have been discovered.

On July 9, 1949, several slender salamanders (*Batrachoseps attenuatus*) were collected or observed in a very damp, rotten log near the Henness Ridge Fire Lookout, close to the park boundary in the southwest part of Yosemite. On August 3, 1958, a search was made of Henness Ridge but no salamanders were discovered. The area surrounding the lookout is dry and exposed with decomposed granite soil and scattered boulders. The few logs present were overturned and were slightly damp beneath, presumably from thunderstorms the previous week. Vegetation is dry Transition, dominated by yellow pine (*Pinus ponderosa*), incense cedar (*Libocedrus decurrens*), black oak (*Quercus kelloggi*), manzanita (*Arctostaphylos* sp.), and mountain lilan (*Ceanothus* sp.). Moisture conditions exist on the northern slopes and sugar pine (*Pinus lambertiana*) and white fir (*Abies concolor*) are to be found there. The entire area seems somewhat atypical for the species but, as is the case in the mountains of southern California, these salamanders aestivate when conditions become intolerable. The small size of the slender salamander, and its relatively large surface area, make it susceptible to desiccation. Probably the best time to further search for *Batrachoseps* would be in the spring or early summer.

During the summer of 1955, bullfrogs (*Rana catesbiana*) were discovered in a pond near the Ahwahnee Hotel in Yosemite Valley. The bullfrog is a native of the eastern United States but has been introduced into many sections of the West. It seems to have become well established wherever introduced and, because of its large size, voracious appetite, and proclivity toward feeding upon amphibians, must be considered a major factor limiting the distribution of other anurans. If the bullfrog becomes established in Yosemite, the native populations of the Pacific treefrog (*Hyla regilla*) and the Western toad (*Bufo boreas*) can be expected to diminish.

Two long-eared, or lump-nosed, bats (*Corynorhinus rafinesquei*) were captured in Yosemite Valley, 4.2 miles west of Yosemite Village, on September 6, 1957. Ingles in his *Mammals of California and Its Coastal Waters* lists the species as occurring in the Sonoran Life Zones. The above locality is well into the Transition Life Zone. Fifteen species of bats are now found within the boundaries of Yosemite National Park.

THE OTHER HALF OF HALF DOME

William E. Steinkraus, Ranger-Naturalist

A day's exhibit of grandeur is climaxed in scenic Yosemite Valley by the last rays of golden sunlight creeping up the sheer face of Half Dome, the granite guardian perched high on a jagged pedestal.

How many centuries ago did the weeping indian profile, sketched on the great granite face, first see the light of day? Where is the other half of Half Dome? — I can almost hear the echo from a million valley visitors.

Yosemite valley, superabounding in superlative scenery, is crowned by the most colossal dome of the Sierra Nevada. Half Dome, reaching to an elevation of 8852 feet, rises 4650 feet above the valley floor. An observation from above reveals a long, 500 by 1500 yard, oval-shaped monolithic structure with a very steep southeast side. The opposite side, trending north 45° east, is a sheer face rising at an 82° angle 2000 feet above its base. The top constitutes a 13 acre gentle rolling summit.

It is carved from the most massive type of granite in the Yosemite region. Half Dome quartz monzonite is identified as a medium-grained light-gray rock. The dark minerals, biotite and hornblende, are well-developed crystals inside the quartz and feldspar. Biotite crystals form thin hexaginal plates ⅛ to ¼ inch in diameter. The hornblende prisms

range from ⅛ to nearly 1 inch in length.

The story of Half Dome begins with a large granite intrusion. Hot molten material within the earth pushed the overlying metamorphic rock upward into a domed structure. If hot magma hardens after it stops moving, the rock will be massive, but if the upward push continues while the rock is crystallizing, structural features will result. The intrusive mass bordering the overlying layers of the metamorphic crust cooled first. Liquid rock beneath continued to rise, building up stresses in the newly frozen local granite. The hardened rock failed by breaking up into concentric shells while the downward cooling and upward movement continued. The resulting dome structure may be compared to the concentric arrangement of an onion.

While an intrusive mass is cooling, the rock contracts. Vertical, tension fractures may result separating the mass as evidenced by the face of Half Dome.

During the Sierra Nevada uplifts, a modified V-shaped Tenaya canyon was sculptured out of the granite rock beside Half Dome whose front runs parallel to the deply incised canyon.

Doubtless, the massive dome existed as a high rounded ridge before the beginning of the ice ages a million years ago. Its face had not yet been exposed.

The early El Portal glaciers covered the valley with moving ice passing 700 feet over Glacier Point. Tenaya glacier, a tongue of ice entering Yoemite valley from the northeast, reached to within 500 feet of the top of Half Dome. It plucked away the fractured granite of Tenaya canyon, gouging out a steep-sided U-shaped valley.

Half Dome's other side was not a mirror image of the existing half. If the dome had been symmetrical in its massive structure, the glacier could not have carved a sheer northwest face. The glacier failed to pluck away the opposite side of the dome when the ice encircled it. A single shell covers the long southeast side. Its massive character is manifested by its long period of exposure; since the last shell broke away, gullies, nine inches deep running down the steep slope, have been cut into the granite.

The shells will peel off according to the joint pattern produced when the granite cooled. Disintegration is effected mainly by frost sapping and plucking. Outer shells are only one to two feet thick at the summit. They become increatsingly thicker toward the massive center.

Half Dome's missing section, comprising a more fractured mass, was plucked away and carried downstream by the moving ice. A zone of northeast trending joints exist in the surrounding rock parallel to the face of the dome. At the northeast end of the face, a remnant of Half Dome's other side has been left behind. Vertical sheets, parallel to the face, once terminated in this granite shoulder. Jointed sheets were easily quarried by the glacier. The section of rock, towering above the ice, would be undercut and then, breaking away, would drop down upon the advancing glacier. The disintegrated granite was carried through Yosemite valley. Some of the debris must lie at the bottom of the valley buried beneath the fill deposited during the last glacial cycle. The Wisconsin glacier never ascended to the base of Half Dome.

A great quantity of Half Dome quartz monzonite, deposited by the

early glaciers, is found between Bridalveil Falls and El Portal. Of course only a smal proportion of this granite deposit originated in the familiar dome. But here lies part of the "other half" of Half Dome.

Another remnant, a section of the "other half", is still attached to the massive structure. A precipitous overhang, extending 90 feet out from the face, clings tenaciously to the main body. A deep vertical crack, 10 inches wide, coinciding with the edge of the great face, separates the two parts at the summi along their northeast contact zone.

Half Dome's "other half" comprises many different shapes and sizes between its overhanging mass and the canyon bottom at El Portal.

YOSEMITE FALLS IN THE MOONLIGHT

Ted R. McVey, Ranger-Naturalist

The stream near flood stage, filling both channels.
Solid white water crashing over the rocks in its mad dash to the Valley floor.
Then a wonderous sight.
The soft beams from the moon, and the mist from the falls had created an enchanting lunar rainbow;
A shimmering arch of soft eerie silver light curved across the base of the falls.
It danced before me teasingly, now appearing brightly and then fading away as the clouds blotted out the light from the moon above.

NOTES FROM MY JOURNAL

William L. Neely, Ranger-Naturalist

I write of a certain rebellious spirit in Nature. The sentimental often speak of the calm and peace of the mountains and the never-changing tranquillity of life up here, "away from our rapidly-changing civilization."

They are lulled.

If you are alert you will find that Nature is always redoing her hair and shifting the furniture around. She is never satisfied with the course of a stream through the meadows and is forever washing down the granites with floods and freshets, and ringing up a howling good thunderstorm when things get too dull.

I admire the coyote. Unlike introspective man, he never analyzes his actions or worries about his conflicts with the world, nor nurses regrets for yesterday's mistakes. He is forever in the present. One finds this healthy attitude all through nature. When the hawk is near, the birds set up an agitated racket. He swoops down and carries off a sparrow. When he is gone there is some fluttering about, but soon from some tree a song is heard again and business resumes.

The coyote faces the day . . . he never yearns for the "good old days." I think the great ones are not those who bring about great changes, but those who can meet and adjust to the change that has been made. The coyote's survival, like that of the crow and those exasperating aphids, testifies to an ability to meet change, survive and thrive.

I am not so impressed by the unchanging calm of nature that one reads about all the time, but rather by the constant mutability of nature, and for the elasticity with which wild things face the extremes. Last year it was cold and wet; this year parched and dry. We all talk about it, but the coyote goes about his business. If the streams dry up, all the more stranded fish to fatten him.

And yet the plants and animals are not always responsible mirrors to reflect daily events or normal climates. The knobcone pine is a reflection of a fire-climax. It waits patiently to seed itself, bearing cones that can only be opened in the heat of a fire. That fire may be rare or never come, but it has made that adaptation to an extreme and not the normal. Yet, on the other hand, the trout in this dry summer will die by the thousands in dried-up streams. He is fitted for streams and not ex streams.

Even the destructive needlemine that's raging through the Tuolumne forest . . . in its dependence upon the lodgepole pine will it completely destroy its host, and in so doing destroy its own self? We ask these questions. The coyote doesn't. I see him in the meadow. He is scratching his ear and looking down a ground-squirrel hole. I envy his complete immersion in his environment.

PUBLICATIONS FOR SALE AT THE YOSEMITE MUSEUM

All mail orders should be addressed to, and remittances made payable to, YOSEMITE NATURAL HISTORY ASSOCIATION, YOSEMITE NATIONAL PARK, CALIFORNIA. Prices include postage, insurance, and on proper items, California State Sales Tax 3%, plus 1% County Tax.

GENERAL

Adams' Guide to Yosemite Valley, Illustrated	$1.65
Auto Tour of Yosemite National Park - Ditton and McHenry	.60
Campsite Finder (Western) - Hartesveldt	1.15
Climbers Guide to High Sierra - Sierra Club	3.25
Devils Postpile National Monument - Hartesveldt	.30
Exploring Our National Parks and Monuments - Butcher (paper)	3.75
Exploring Our National Parks and Monuments - Butcher (cloth)	5.40
Going Light - With Backpack or Burro - Sierra Club	2.25
Happy Isles Nature Center, Your Guide to - Hubbard	.20
National Park Story in Pictures - Story	.80
National Parks, The - What They Mean to You and Me - Tilden (cloth)	6.20
National Parks, The - What They Mean to You and Me - Tilden (paper)	1.15
Nature Trail - Inspiration Point Self-Guiding - Carpenter	.20
Nature Trail - Mariposa Grove Self Guiding - Wason	.20
Place Names of Yosemite Valley - Hartesveldt	.30
Rocks & Minerals, How to Know Them - Pearl	.65
Starr's Guide to John Muir Trail and High Sierra Region	2.25
This is California - Obert	8.00
Waterfalls, Famous, of the World - Brockman	.60
Yosemite and the Sierra Nevada - Ansel Adams & John Muir	12.70
Yosemite Story, The - Scott	1.20
Yosemite Trails & Tales - Taylor	.90

ANIMAL LIFE

Animal Tracks, Field Guide to - Murie	4.30
Birds of Pacific States - Hoffman	6.20
Birds, Western, Field Guide to - Peterson	4.30
Birds of Yosemite - Stebbins	.85
Fishes of Yosemite National Park - Evans-Wallis	.50
Mammals, Field Guide to - Burt and Grossenheider	4.30
Mammals of Yosemite National Park - Parker	.60
Reptiles and Amphibians of Yosemite National Park - Walker	.45
Survey of Sierra Nevada Bighorn - Jones	.60

TREES AND FLOWERS

Broadleaved Trees of Yosemite National Park - Brockman	.45
Cone-bearing Trees of Yosemite National Park - Cole	.45
Ferns, Field Guide to - Cobb	4.30
Sequoias, Yosemite, Guide to the - McFarland	.45
Wildflowers of the Sierra (80 color photos) - Hubbard	.55
Wildflowers, Western, Field Book of - Armstrong	5.40

HISTORY AND INDIANS

Ghost Mines of Yosemite - Hubbard (paper)	1.20
Ghost Mines of Yosemite - Hubbard (cloth)	3.00
Gold, Guns and Ghost Towns - Chalfant	4.05
Indians, Yosemite, Yesterday and Today - Godfrey	.35
John Muir, Protector of the Wilds - Haines-Morrill	2.00
Miwok Material Culture - Barrett and Gifford (paper)	2.20
Miwok Material Culture - Barrett and Gifford (cloth)	3.25
Mother Lode Country, Guide to the - Brockman	.60
100 Years in Yosemite - Russell (paper)	2.20
100 Years in Yosemite - Russell (cloth)	3.25
Steve Mather of the National Parks - Shankland	6.20
Wilderness World of John Muir, The - Teale	4.85
Yosemite: The Story of An Idea - Huth	.35

GEOLOGY AND MAPS

Geologic History of Yosemite Valley (Prof. Paper 160) - Matthes	5.75
Geology of Yosemite Valley, Brief Story of - Beatty	.25
High Sierra Camp Areas, Pocket Guide to - Clark	.60
High Sierra Camp Areas, Trail Guide to - Clark	1.15
Incomparable Valley, The - Matthes (paper)	2.15
Map of Yosemite National Park, Topographic - USGS	.60
Map of Yosemite Valley, Topographic, (geology story printed on back)	.60
North Country of Yosemite, Pocket Guide to - Clark	.60
North Country of Yosemite, Trail Guide to - Clark	1.15
South Boundary Country, Pocket Guide to - Clark	.60
South Boundary Country, Trail Guide to - Clark	1.15

FOR CHILDREN

A Day with Tupi, An Indian Boy of the Sierra - Hubbard (paper)	1.20
A Day with Tupi, An Indian Boy of the Sierra - Hubbard (cloth)	3.00
Animal Friends of the Sierra - Hubbard (paper)	1.20
Animal Friends of the Sierra - Hubbard (cloth)	3.00
A National Park Adventure - Hubbard (paper)	1.20
A National Park Adventure - Hubbard (cloth)	3.00