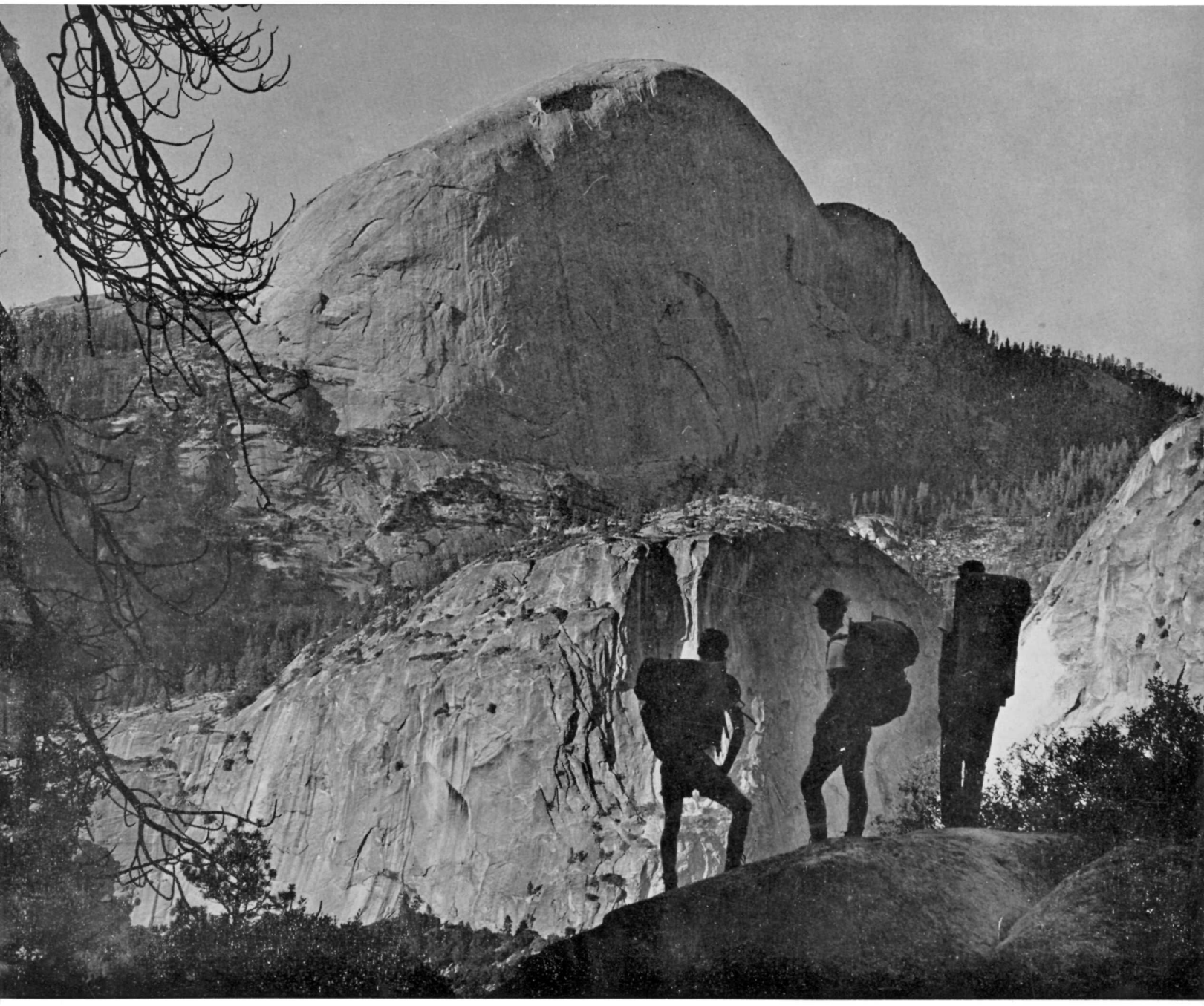
NATIONAL PARKS *Magazine*



The Granite Dome of Mount Starr King
Yosemite National Park

September 1960

The Editorial Page

Trouble Looms Again in Olympic National Park

THERE IS TROUBLE brewing again in Washington State's Olympic National Park—a park that has had, in the relatively few years of its establishment, more than an ordinary share of trouble.

The latest threat comes in the form of pressure for "development" of the Seven Lakes Basin and High Divide area (shown by arrow in the drawing below) as a ski resort, complete with a two-mile-long aerial tramway, T-bar lifts, and day lodge. Access to the proposed development would be by way of an extension of the present road from Highway 101 to the inholding of Sol Duc Hot Springs some five miles further up the Soleduck River, to penetrate the Basin and some of the finest wild and scenic country of Olympic National Park.

Pressure for such a development stems most particularly from the owner of the Sol Duc Springs inholding, on which there is already a resort building, and from the Chamber of Commerce group at Port Angeles, the nearest sizeable city, some forty-five miles by road from the area. The Port Angeles group, of course, views the proposed development as a drawing card for ski enthusiasts (and their money) from the heavy population centers across Puget Sound to the east, in spite of the fact that attendance at the present Hurricane Ridge ski facility, only ten miles south of Port Angeles in Olympic, and much closer to the cities, is largely local.

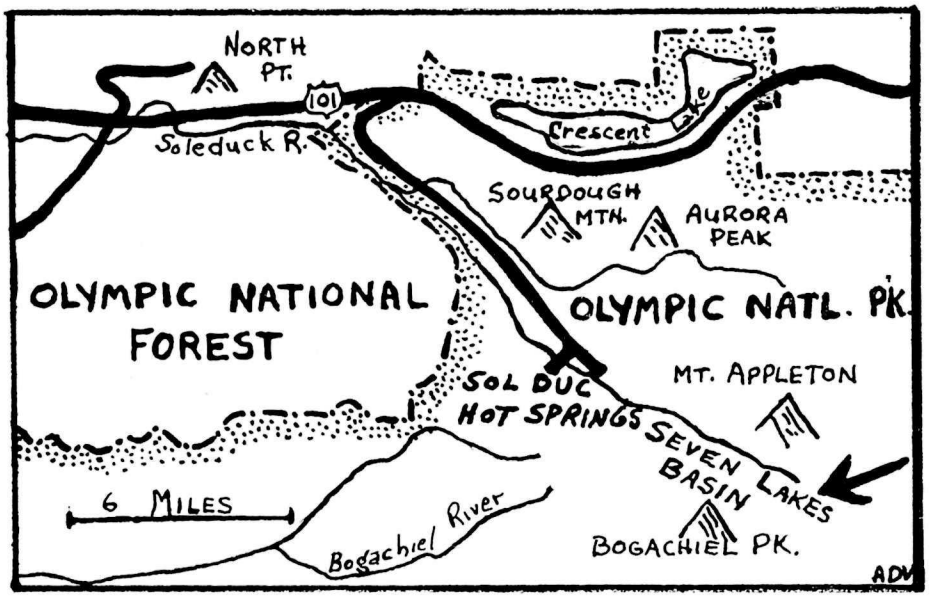
The Seven Lakes Basin-High Divide area of Olympic National Park is true "back country." Southward from the High Divide lies the great bulk of Mount Olympus, with its great rivers of ice. To the southeast is the Bailey Range and to the southwest, the magnificent rain-forests of the Bogachiel and Hoh River country. Expert opinion adjudges the Seven Lakes Basin one of the finest and most heavily used "back countries" to be found in any of our national parks.

This is an area that stands in no need of further "recreational" development; every year it affords recreation in the finest sense of the word to many thousands of visitors.

The National Parks Association is firmly convinced that mechanized skiing facilities have no place within our national parks and monuments—whether in Olympic or elsewhere—and feels that the precedent already set in this respect is a most unfortunate one; that it is fraught with great future dangers and difficulties for the national park system. The Association feels that this sort of "recreation" is a direct contravention of the principles on which our national park system was founded.

We urge the National Park Service to stand firmly against the pressures generated in behalf of the proposed Seven Lakes Basin-High Divide development, and we urge all friends of the national parks to support the Service in such a stand. ■

In the map below, which has been adapted from a National Park Service drawing, the arrow points to the wild Seven Lakes Basin area of Olympic National Park, now under threat of "development."



Crisis in the Congo

THE PROBLEMS FACED BY the Congolese as they assume the responsibility of full self-government are staggering. Men of good will throughout the world will be standing by to help in every way possible. Among the difficult tasks are those of administering the great national parks of the Congo, with their scientific wealth of plants and animals.

The protective personnel of these parks, now completely Congolese, are able, experienced, and devoted. Ways and means must be found to enable them to carry on.

As the Belgian administrators and technicians withdraw, scientists and management consultants must be available to assist in the complex problems of administration, if invited.

The gorilla, antelope, white rhino, giraffe, elephant, lion, and many other valuable species, threatened with decimation elsewhere, are protected in the large parks. The Congolese people may rightfully take pride in this great wealth and wish to conserve it for their own understanding and enjoyment and that of the other people of the world.

This Association expresses its confidence that the new governmental authorities will do everything they can to safeguard these resources despite their many other trying problems. ■

NATIONAL PARKS MAGAZINE

OFFICIAL PUBLICATION OF THE NATIONAL PARKS ASSOCIATION

SEPTEMBER 1960 Vol. 34, No. 156

Paul M. Tilden, Editor

CONTENTS

SEPTEMBER'S COVER PHOTOGRAPH

Three autumn hikers of the Yosemite High Country pause to survey Mount Starr King, in Yosemite National Park, one of a swarm of barren monoliths that cap the great granite mass which forms the core and spine of California's Sierra Nevada. The higher parts of this mountain range supported glacial ice during the Pleistocene, or recent, ice age; and many of the granite domes exhibit a rich variety of glacial scratches, grooves, and ice-polished surfaces.

Photograph by Phil Arnot

THE NATIONAL PARKS AND YOU

Few people realize that ever since the first national parks and monuments were established, various commercial interests have been trying to invade them for personal gain. The national parks and monuments were not intended for such purposes. They are established as inviolate nature sanctuaries to preserve permanently outstanding examples of the once primeval continent, with no marring of landscapes except for reasonable access by road and trail, and facilities for visitor comfort. The Association, since its founding in 1919, has worked to create an ever-growing informed public on this matter in defense of the parks.

The Board of Trustees urges you to help protect this magnificent national heritage by joining forces with the Association now. As a member you will be kept informed, through NATIONAL PARKS MAGAZINE, on current threats and other park matters.

Dues are $5 annual, $8 supporting, $15 sustaining, $25 contributing, $150 life with no further dues, and $1000 patron with no further dues. Bequests, too, are needed to help carry on this park protection work. Dues and contributions are deductible from your federal taxable income, and bequests are deductible for federal estate tax purposes. As an organization receiving such gifts, the Association is precluded by relevant laws and regulations from advocating or opposing legislation to any substantial extent; insofar as our authors may touch on legislation, they write as individuals. Send your check today, or write for further information, to the National Parks Association, 1300 New Hampshire Avenue, N.W., Washington 6. D.C.

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Along the foot trail and stream at the bottom of Palm Canyon the California fan palms present tall, slender trunks with generous tufts of leaves at their tops. Withered and drooped fronds cling to the trunks at the base of the living foliage, forming beige "skirts" or "beards."

In the rugged canyons of the Salton Sea drainage area grows

Washingtonia— Native Palm of the California Desert

By

Frank G. Ashbrook

THE VILLAGE OF PALM SPRINGS, in the desert of Southern California, is widely known as a plush winter capital of the sophisticate and the sun-worshipper. It has many golf courses, countless swimming pools, swanky hotels, expensive shops—and it has Palm Canyon Drive, lined on both sides with some two thousand-odd palm trees. Palm Springs can be, truly, an adventure in luxurious living.

But Palm Springs—and more especially its surrounding terrain—can also furnish high adventure for the nature enthusiast. For, in contrast to the man-made lures of the village itself, there is within this general area a great array of remarkable canyons, all differing, but all sharing the characteristics of ruggedness and strength.

From Palm Canyon Drive, the main thoroughfare of Palm Springs, it is hard to believe that, tucked away in the canyon-folds of the towering San Jacinto Mountain range that borders the desert spa on the west, there is untamed beauty—spectacular rock formations, tropical vegetation, and wildlife that differs from that to be found anywhere else in the United States.

By far the finest and most frequently visited of these hidden-treasure ravines is Palm Canyon, a fifteen-mile-long desert gorge graced by a stream of snow water; the canyon, with many other draws, supports a magnificent palm forest, the largest acreage of indigenous palms to be found in the nation. These palms, in their spectacular background, comprise one of the fine botanical exhibits of the American West.

Many species of palms grow in Southern California. Most of them are cultivated, some bearing dates and others producing beauty and shade. The Palm Canyon tree, however, is a native. Commonly known as the desert fan palm, these trees have been the subject of much study since they were first reported, in 1846, by Major W. H. Emory. In 1879, the tree was named *Washingtonia filifera* by Herman Wedland, a German, who saw a young tree in a nursery at Ghent, Belgium, that had been grown from seed brought from the United States. The genus name did honor to our own George Washington.

It is well worth while to stand on the rim of Palm Canyon and look down on the myriad graceful, green plumes that shimmer and glisten in the sun. Occasionally measuring two yards across, the fans, or fronds, are carried on stout, slender stems that are from six to eight feet long. Only a slight breeze is needed to make the fronds sway and rustle with a music that is all their own, undertoned with a quiet that is peculiarly "different."

The visitor, strolling down the easy foot-trail to the floor of the canyon, enters a majestic palm forest. In descending, he may notice that lower down the trees seem to grow taller and more ponderous, with column-like trunks that are almost uniform in diameter throughout their entire length. An adult Washington palm often attains a height of from sixty to seventy feet, although the average height is somewhat less. There is a considerable variation in the thickness of the trunks among the palms where the water supply is ample, and where the trees grow in dense stands; the trunks tend to be more slender than where growth is more scattered.

Palms Never Counted

No one has ever counted the trees extending along Palm Canyon, from Hermit's Bench almost to the waterfall, seven miles upstream; but most estimates agree on about 3000. Few of the palms measure more than thirty-six inches in diameter at base, and they exhibit smooth, straight boles that rise as high as seventy-five feet to fan out into green plumes.

The growth of palm trees is unlike that of the more familiar hardwoods and conifers. Palms do not form growth rings by way of a cambium layer beneath an outer bark. Instead, growth takes place in the center of the tall, unbranched trunks. It is not possible, therefore, to tell the age of a palm tree by counting its concentric circles. It is estimated, however, that many of the trees in Palm Canyon have reached an age of 200 years.

The heart of a palm tree, through which the sap flows from root to crown, is porous. The root system that feeds and waters the tree is composed of hundreds of small rootlets, each a bit thicker than a lead pencil, which spread through the soil slightly below its surface. Each year, new leaves appear at the top of the tree and the lower ones die. These are not shed, but hang close to the trunk in a brown, shaggy sheeting, or "skirt." The Indians who camped at the palm oases in earlier times are said to have burned the dead fronds in the belief that they formed the hiding places of evil spirits. However, those moderns who have slept on the ground among the wild palms think that the Indian superstition may have had its basis in the bats, wrens, insects and small rodents that take shelter among the dead fronds.

Back in 1939, these Washington palms were nearly destroyed by a fire sweeping down the canyon. However, the porous hearts of the trees prevented the fire from burning deeply into the trunks, and the palms survived, although charred trunks still stand here and there as relics of the fire. Fires caused by campers and lightning have burned away the highly flammable "skirts" on most of the older trees, although some have been spared.

During the summer months, mature palms throw out creamy plumes of blossoms among their fronds. The flower of the Washington palm, unlike that of the date palm, is bisexual, containing both male and female parts. The flowers develop into small black berries, with but a single seed. By October, great clusters of seeds, now dark brown and about the size of a pea, hang from the foliage. The seeds are covered by a thick, sweet skin, and were once crushed in stone mortars by the Indians, and made into a kind of porridge.

A Plant of the Past

The lineage of the California fan palm goes back into the mists of the ages, and botanists think the species may go as far into the geological past as the great *Sequoias*, or farther. Except for a few isolated groups in Arizona and Lower California, the species, as far as is known, is confined to wild ravines and gorges of the Salton Sea drainage area. It is thought that these trees may be the survivors of extensive palm groves that at one time fringed the shores of ancient Lake

The majestic Washington palms flourish in the canyon bottoms, where there is abundant water. The species, thought to be a relic of a greater stand of palms, is "holding its own."

Mr. Ashbrook, who in 1957 retired from the government service after 41 years with the old Biological Survey and the modern Fish and Wildlife Service, holds the Interior Department's highest honor, the Distinguished Service Award. He is the author of several books as well as many popular and scientific articles.

Cahuilla—a lake that, long ago, jutted inland from the Gulf of California. Fossil imprints of a fan palm quite similar to *Washingtonia* have been found in at least two places in Southern California.

Randall Henderson, founder and former editor of *Desert Magazine*, has made extensive studies of the wild palm. He believes that the original palms of the California desert survived along fault-lines that cross the Cahuilla Basin on both sides of the present Salton Sea, and which extend westward along the Indio Hills almost to the village of Garnet.

But how did the palms get into the canyons? Mr. Henderson is convinced that the seeds of the parent trees were carried along the canyon fault-lines both by Indians and by coyotes. The Indians carried the seeds as they did mesquite beans and other food items as they moved from spring to spring. Coyotes eat the palm fruit, but digest only the thin skin that covers the seeds. (Undigested palm seeds are seen in coyote dung in all the desert canyons.)

It is believed that the coyote, above any other agent, is responsible for the fine stands of *Washingtonia* in Palm Canyon, and in the many other desert canyons where wild palms flourish today.

Bordering the stream that washes the granite at the bottom of Palm Canyon are trees typical of California's lower elevations: willow, sycamore, alder, and the tamarisk. Higher up on the canyon slopes are mesquite and cat's-claw —the latter burdened with pearly desert mistletoe—creosote, ephedra, encelia, and the barrel cactus. Farther up the canyon, the rock walls, continually seeping water, are sprayed with great showers of maidenhair fern. Here, also, in the moist earth beside the stream, are slender tules and crisp, green patches of watercress. Here and there about the canyon floor are pools of mineral water, bubbling up through the sandy bottom.

"Skirts" a Fire Hazard

It is only a short distance up the canyon trail to where palms still wear "full skirts," and where it is most important that great caution be exercised against the possibility of fire. Lower Palm Canyon is a delightful spot; but there is wild, rugged beauty in the upper canyon, most rewarding for those who take the old Indian trail and go beyond the haunts of the many Palm Canyon picnickers. Hikers, interested in seeing a larger part of the area, may take a fourteen-mile trail down the canyon from Ribbinwood, on the Palm-to-Pine Highway.

Palm Canyon is seven miles from Palm Springs by way of the South Palm Canyon Drive. Five miles from the village the road leads through a toll gate, and farther up the road, at Hermit's Bench, there is an ample parking area and a shop where Indian wares are sold. From there the trail winds downhill and through the magnificent palm forest of the lower canyon.

Tahquitz Canyon, less than two miles from Palm Springs, has a roughhewn beauty that is certain to fascinate the canyon explorer. A foot-trail follows the canyon stream, and for two miles one may hike this spectacular gorge. It is well worth the trip, if only for the waterfall that spills across sheer granite in a thundering sixty-foot drop.

Only four miles from Palm Springs is Andreas Canyon, considered by many to be the most scenic of the local canyons. The canyon was named for "Captain" Andreas, of the Cahuilla Indian tribe, who was born in the shadow of San Jacinto Mountain. Here the cliffs present sheer, towering walls, and Indian-constructed tables along a pleasant stream invite the picnicker. Within Andreas there is a handsome waterfall as well as a dense growth of Washington palms.

Yet another fine canyon is Murray, just south of Andreas, where there are many palms and several fine picnic spots. There is no road to Murray Canyon, although there is a good trail for an easy walk from Andreas. A band of wild ponies may sometimes be seen in Murray Canyon, and some people think that the animals are descendants of horses belonging to the early Indians.

Long before the arrival of the white man, a peaceful, hard-working group of Indians belonging to the Shoshonian language group lived in the canyons and around the mineral springs of this desert region. Known as the Cahuilla, these Indians were made up of two bands: the Agua Caliente, in the vicinity of present-day Palm Springs, known as the Desert Cahuilla, and a band that lived farther to the west, called the Pass Cahuilla.

Indian Toll Road

The Agua Caliente band still owns considerable property in and around Palm Springs, and has title to a number of canyons located within their reservations. Through these canyons the Indians have established a toll road, and signs invite the traveler to explore them and to picnic under the Washington palms. The Indians charge a nominal fee for entering the Palm, Andreas, and Murray Canyon areas, and funds derived from admission charges go into the tribal treasury.

Palm Canyon has long been listed as a possible national monument; but the Indians of the Agua Caliente band take the position that the area should be

(Continued on page 15)

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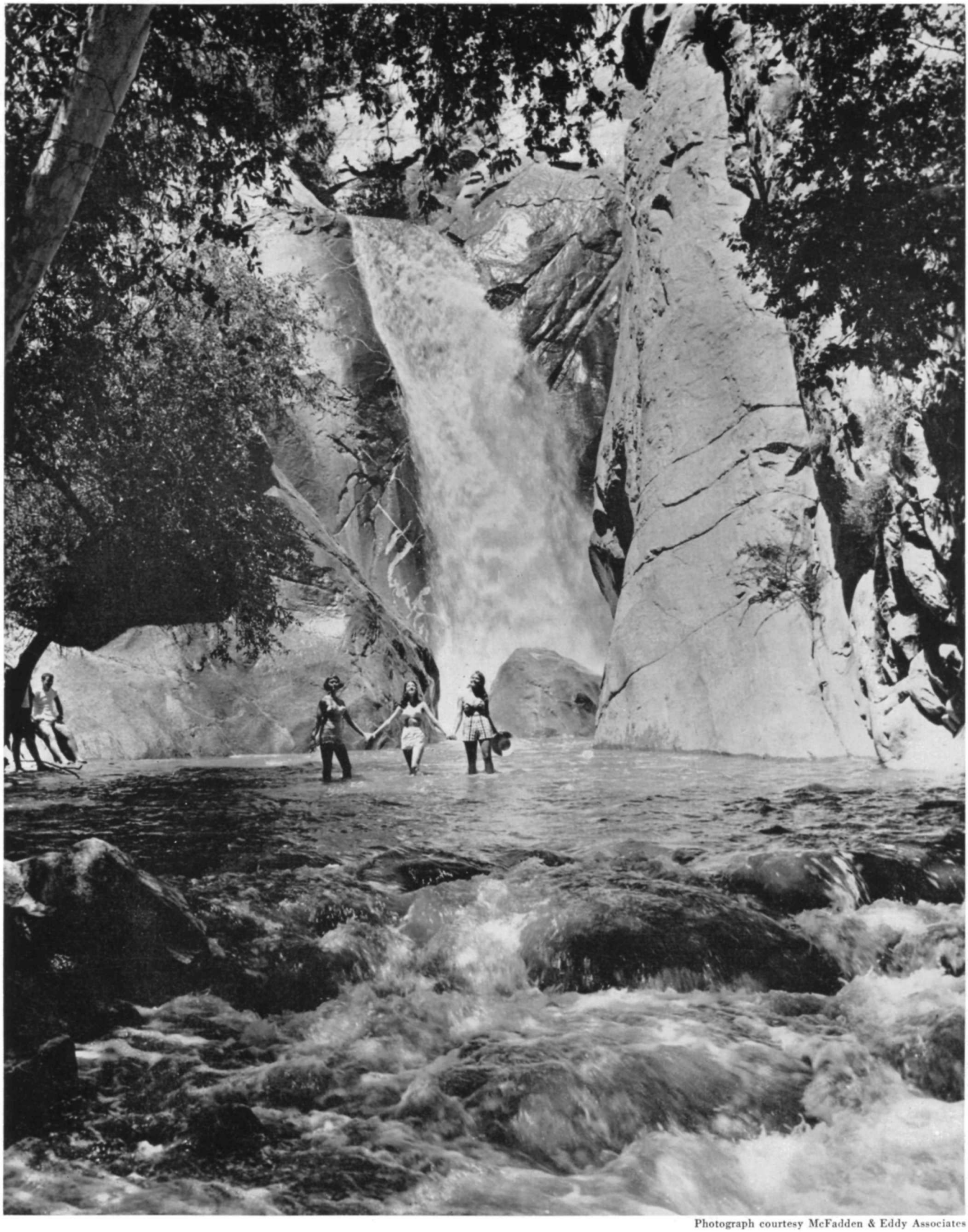
A wide variety of plants is to be seen along the streams of the canyon bottoms, including species indigenous only to the desert area.



Photograph courtesy McFadden & Eddy Associates

One of the more spectacular gorges of the area is Tahquitz Canyon, in which a stream, descending from Tahquitz Peak, drops a sheer sixty feet. This rugged canyon, which is less than two miles from Palm Springs, may be explored by way of a foot-trail that follows the rushing stream. A day spent in Tahquitz with camera and picnic basket will provide a pleasant experience for the nature enthusiast.

National Park Service

Rampart Cave, located in the lower reaches of the Grand Canyon of the Colorado, is some eighty-five miles upstream from Boulder City, Nevada. Arrow points to mouth of cave; Lake Mead is in foreground.

Condors of Lake Mead

By Loye Miller

WHERE DOES THE WIND come from before it starts to blow? Where did *now* come from? When does it become tomorrow? Where did yesterday go? These are the old questions of young childhood; questions that almost all of us have asked in the years past.

We grown-ups may still ask: "Is yesterday gone forever, lost like the flame of a snuffed-out candle?" To some of us here in the Southwest yesterday is not so completely lost—at least the wick of the candle remains. Perhaps even a thin wisp of smoke curls up from it. Where did the cliff dwellers go? Who were the basket makers? What stories do the tree rings tell us? Can the broken bones of cave refuse come back to life and speak to us, tell us of a yesterday that we thought was lost? Can we build from such small chips a mosaic picture of life that was once lived here? Such are the fascinating problems of the archeologist and the paleontologist—bringing back the yesterday, fitting it into today, even projecting it into tomorrow.

More than twenty years ago, a National Park employee saw an opening in the rock walls of the Lake Mead Recreational Area, on the Colorado River—an opening that he suspected might lead to an unknown cave. He yielded to the "Tom Sawyer" urge that lies deep within most of us, and he went exploring. The result was the discovery of Rampart Cave, at the far eastern end of the lake, where the river

breaks out from the Grand Canyon.

Park authorities dug test pits in the tremendous accumulation of refuse in the floor of this extensive cave, and some of their findings have already been made public. No human remains have been recovered, but the cave appears to have been the abode of generations of the great ground sloth, *Nothrotherium*, the compacted droppings from which formed a deep deposit covering more than 4000 square feet of the cave floor. The bones of an extinct horse were found, as well as those of a new species of mountain goat, *Oreamnus harringtoni*, with several smaller mammals occurring in lesser numbers. A desert tortoise and a chuckawalla "also ran."

The bird remains that were taken out, however, were neglected until last year. Fourteen small packets were passed over as "merely bird bones," and were practically forgotten for twenty-five years. Only last summer were they submitted to the zoology department at the University of California at Los Angeles, for study and appraisal.

Two of the fourteen packets were mere bone chips that could only be determined as "bird bone." One packet contained the hip bones of a hawk, not distinguishable from the red-tailed hawk that inhabits the area today. All the other bones—one of which is from a nestling bird—represent the California condor, a splendid big fellow now confined to restricted areas of California, and limited to a population of perhaps sixty individuals. Never before has a fossil condor been reported from the State of Arizona, so the Rampart Cave record constitutes an interesting item in the history of that State.

Dr. Loye Miller, professor emeritus of the department of biological sciences at the University of California at Los Angeles, is a noted scientist who, in his writings, has specialized in the field of bird life, both of the present and past.

Through the vast reaches of geologic time, many and varied forms of life have come "on stage," enacted a part of greater or lesser importance, and have disappeared, their acts completed. The California condor is one of our modern species of birds that seems headed towards extinction. In Pleistocene time, it lived in Florida, in the Caribbean drainage of Mexico, in Texas, New Mexico, Nevada, and abundantly in California. In the period of recorded human history, the condor has been restricted to the Pacific Coast, from southern British Columbia to northern Baja California. Within the memory of many bird students, it has disappeared from all but two or possibly three restricted localities of California, with most of the individuals retreating to the drainage basin of Sespe Creek, in Ventura County, where the bird is rigidly protected in a special sanctuary.

What has caused this great shrinkage of the condor's former range? We do not know. Modern man, with a general disregard for natural resources not directly contributing to his purse or to his creature comfort, has come into the picture only during the past hundred years or so; but the condor's decline apparently began long before man arrived to help speed the great bird towards oblivion.

Yesterday has passed into today for the condor, and tomorrow holds little promise for the species, it may be feared. But the bone chips from Rampart Cave have helped to fill in the mosaic picture of the condor's flight through Time. ■

National Park Service

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Within Rampart Cave, the excavation workmen were forced to wear face masks because of the stench and dust. The cave, which appears to have harbored *Nothrotherium*, the ground sloth, yielded the bones of the horse and mountain goat as well as those of the hawk and condor.

Courtesy Florida State News Bureau

The Everglades: a vast expanse of sawgrass and water, marsh and mangrove thicket at the tip of the Florida Peninsula, once known to Indian inhabitants as *pa-hay-okee*, the "grassy water."

Will Everglades National Park "Go Dry?"

By Geoffrey J. Martin

DURING THE LATTER HALF of the past century, drainage "improvement" work was commenced in southern Florida, on the Caloosahatchee River; and it was then that the area we now know as Everglades National Park suffered its first major change at the hands of man. So insignificant was the change, however, that it passed unnoticed by those who lived in the balmy climate of the southern tip of the Florida peninsula.

In the years that followed this first drainage attempt, many other gashes were made in the upper 'glades; so that today, in addition to many canals, there are pumping stations, conservation areas, protective levees, and entire administrative units functioning to make the natural resources of southern Florida more usable. Man came, saw, and tried to conquer—but has failed.

In the days before "canal drainage fever" hit southern Florida, the lower 'glades of peat, muck and marl, supporting vast expanses of sawgrass, were broken only occasionally by the softly-rising hammock, the elevation of this area having remained between zero and eight feet above sea level over the years. One hundred miles to the north, where Lake Okeechobee gurgles lazily, land elevation in pre-drainage days measured twenty feet. Today, height above sea level at the same location measures fourteen feet. Where has the six feet of topsoil gone?

These upper 'glades were drained seaward by canal, and the water table was drastically lowered; anaerobic bacteria consumed the organic peat and muck soil at a ferocious rate; fires ate away inches of dry topsoil, while mechanical compaction decreased soil volume by compression. In short, thirteen to fourteen feet of topsoil in 1900 has become six to seven feet of topsoil, and these facts are of fundamental significance to the Everglades National Park.

Thus there has been a slow, almost imperceptible tilt imposed on this vast basin floor, which carries runoff and underground water in a northwest-southeast, northeast-southwest curve to discharge among the Ten Thousand

Islands and into Florida Bay. If the 1880 elevation at the southern end of Lake Okeechobee measured twenty feet, then the vertical drop for runoff into the ocean at Florida Bay was 2.4 inches per mile. If the present elevation of land at the southern end of Lake Okeechobee is only fourteen feet, then the vertical drop for runoff into the ocean bay is 1.68 inches per mile. Clearly, more runoff water emerged into Florida Bay at 2.4 inches vertical drop per mile than at 1.68 inches, since the faster-flowing water caused by the steeper slope had less opportunity to penetrate the absorptive soil.

> *"Insofar as the Everglades National Park is concerned, the main points for consideration are the maintenance of an adequate level of fresh ground water to prevent salt-water encroachment which would change the environment for wildlife, as well as the vegetation . . . Periodical flooding has always been a natural occurrence in the region of the Park; it is essentially a water park. Basically, therefore, the question is not one of too much water, but a guaranty that there shall not be too little."*
>
> *—The Assistant Secretary of the Interior, 1948.*

Faster Evaporation

Furthermore, the efficiency of surface flow has been impaired because of an increase in the evapotranspiration rate; the hot sun of southern Florida evaporates a slow-moving runoff much more swiftly than it would a fast-moving runoff. Because of the present slower runoff, surface water also has greater freedom to penetrate the extremely permeable rock basin that constitutes the floor of the Everglades, and consequently is not available in such quantity for use at surface level. Under the conditions of a lower water table, we can expect an increase in the growth of bushy vegetation—a situation that is now apparent in the Everglades Park area.

This vegetation growth presents yet another impediment to the north-south runoff flow that obtained before man altered the balance of nature. As the flow lessens in quantity and velocity, there is a proportionate increase in growth of bushy vegetation, and a decrease in the swathe of sawgrass. This, in turn, further lessens the quantity and velocity of runoff flow.

But these are not the only obstacles to water movement in southern Florida. The Central and Southern Florida Flood Control Project has developed three conservation areas for the purposes of retaining water in time of flood, and redistributing it to irrigate crops in time of drought. Area Three is situated immediately north of Everglades National Park, and occupies a surface area of 924 square miles. The reservoir function discourages a natural flow of fresh water to the land south of the Tamiami Trail, which forms the Area's southern boundary.

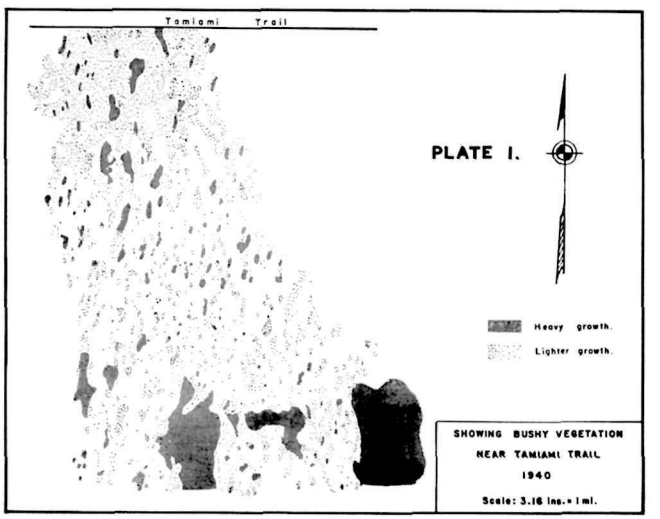
Statistics tell the story very bluntly: The estimated discharge along a forty-mile front at the present location of the Tamiami Trail during a pre-drainage period (estimated by the Flood Control District) was, for an average rainfall year, 2,315,000 acre-feet. For a dry rainfall year the discharge was negligible; and for a wet rainfall year, it was 10,744,000 acre-feet. The comparable figures for the period between 1941 and 1957, when actual measurements were taken, were: average flow, 473,000 acre-feet; minimum discharge, 80,120 acre-feet (1944); and maximum discharge, 1,437,000 acre-feet (1947).

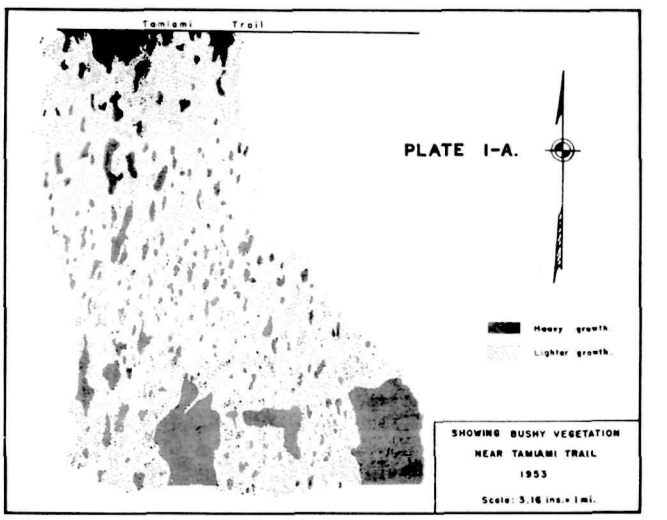
Park Is Excluded

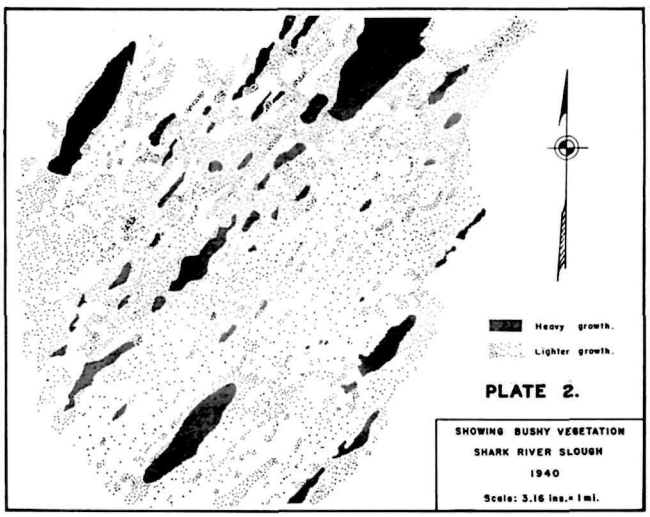
A lack of administrative coordina-

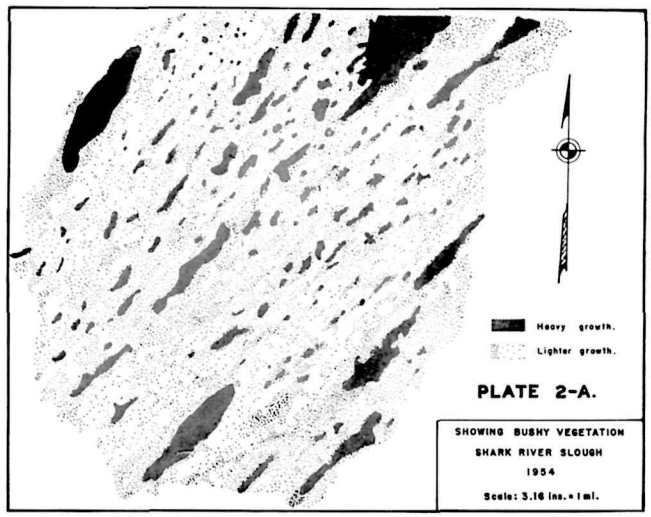
The diagrams below, and those on the following page, are accurate interpretations of aerial photographs showing growth of heavy vegetation in parts of Everglades National Park over the period 1940-1953.

Diagrams I and I-A represent an identical location immediately south of the Tamiami Trail. It is apparent from the heavier shading of diagram I-A that there has been a considerable increase in bushy vegetation.









The two diagrams above are interpretations of an identical location in Shark River Slough, near the center of Everglades National Park. The spread of heavier vegetation growth, indicating a lower water table, is even more apparent in these diagrams than in those on the preceding page. The diagrams are from the publication *Everglades National Park Report*, by permission of the National Park Service.

tion and cooperation further lessens the prospect of effectively checking a diminishing water supply into the park area. The Central and Southern Florida Flood Control Project has excluded the Park from its seventeen-county operation. The Army Engineers at Jacksonville, who excavate canals, construct levees, and supply information and statistics, have not in the past maintained the close connection with the park area that has been so needed. Indeed, it would seem that, at the administrative level, the park has been regarded as a part of the Everglades for which no other use could be found! Perhaps the Assistant Secretary of the Interior appreciated this in 1948, when he said:

> Specifically, the Everglades National Park is a unique park area set aside by the Congress to be preserved in its natural state. If the flood control project is to contribute to this end, or at least not adversely affect it, it seems imperative that the details of the plan as it may affect the park be jointly worked out by the Corps of Engineers and the Park Service.

Are we prepared to let our hard-won park be taken from us so easily? We are not losing the park physically —but the park is receiving so much less water today than formerly that its original character will be lost in a bewildering transformation. Virgin sawgrass stands have already been violated by the intrusion of willow, holly, wiregrass, cabbage palm, wax myrtle, and bay; an intrusion that will eventually give rise to forest-infested hammockland.

Nature's Work Nullified

For the great masses of sawgrass, with other aquatics, form the muck and peat of the Everglades. Remove the water, and the sawgrass and other aquatics will die, and muck will no longer form. That which has already formed will rapidly oxidize, and the work of nature through the ages will be nullified. A jungle growth will dominate the one-time river of grass, and the meaning of Everglades will be quite lost. The diagrams on pages 11 and 12 are accurate interpretations of aerial photographs, and show the growth of heavy vegetation over the period 1940-1953.

Paralleling the change in flora will be a change in the biologically unique fauna of the park area; the animal world will relocate itself with little regard for the arbitrary lines of man-made boundaries.

The same drying trend is already costing us the beauty peculiar to the park's brackish zone. A lower park water table is not able to exert the same seaward pressure as did that of the previously water-saturated southern peninsula, and we find salt water intruding to the park interior. Where the inflow of salt water is held in check at a point further inland by the fresh water of the park, we will find another brackish zone developing. But this is a time-consuming process, and will undoubtedly disturb, if it does not destroy, the tranquil beauty of an established plant, bird, and marine life pattern.

A National Park Service biologist has astutely observed:

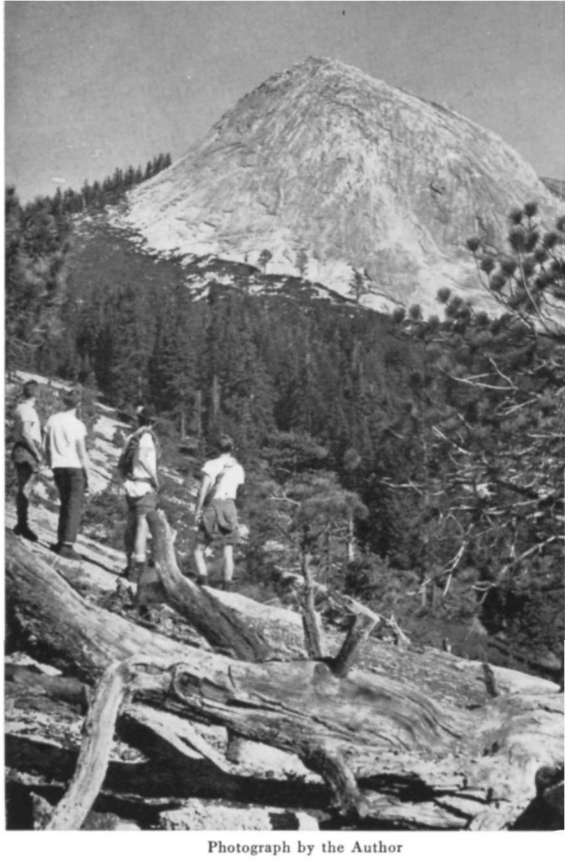
> Many unique plants and animal species will be affected. Some, like the wood storks, ibises, egrets, and roseate spoonbills may suffer irreparable harm. The scientific and esthetic importance of these species is incalculable. There is growing evidence that changes have already occurred that threaten these birds and related animal life with extinction.
>
> The aquatic resources of the marine and fresh water areas have important economic values. It is known that important offshore fisheries, such as the Tortugas shrimp fishery, are intimately related to the nursery grounds in the coastal areas of Everglades National Park. The biological productivity of these environments is most sensitive to salinity changes. The national recreational importance of the lower Everglades is of great significance, and the local economy of many, if not most, communities in south-

(Continued on page 15)

Geoffrey Martin, presently assistant professor of geography at Eastern Michigan University, came to this country three years ago from England, where he was a postgraduate honor student at King's College. Since his arrival in the United States, he has engaged in research on the Florida Everglades, particularly in the region south of Lake Okeechobee.

Autumn in the Yosemite High Country

By Phil Arnot



Photograph by the Author

The bald granitic dome of Yosemite's Starr King, the object of an autumn's hike, sparkled against a cloudless sky.

CAUTIOUSLY I TESTED the last handhold—the one that would pull me to the final ledge and gentle slope of the summit of Mount Starr King, 9089 feet high. Then a step, another handhold, another step, and I was free to scamper to the summit as the other members of our party followed in close order. A rich reward was ours!

Glistening in the autumn sunlight was a sea of odd-shaped monoliths that mark the unusual glacial sculpturing of the Yosemite high country. Cathedral Peak, Unicorn Peak, Cockscomb, Half Dome, Clouds Rest, and the Washington Column all presented shiny, bald pates in the afternoon sun. Their similarity seemed almost genetic—as that of brothers and sisters.

Below us, amid the conifers, bright splashes of yellow and gold clearly marked the season. A balmy haze hid the San Joaquin Valley from view. Distant Yosemite Falls poured over the brink and down to the valley floor, which was visible some 5000 feet below Starr King summit.

This, then, was the fitting climax to a glorious weekend in the Yosemite high country. Based at Nevada Falls the night before the climb, we watched a harvest moon brighten the mountains with pale yellow. Warm, sage-scented breezes filtered up from the valley floor while we lay on our backs along the falls. A faint light glowed in Glacier Point Lodge, in the distance. Only the sleeping pills, taken to insure a good night's rest, forced us to bed against our wills. With the dawn, we were to be well on our way to Starr King.

As we returned from the summit that Sunday afternoon, the bright yellow of the deciduous trees was everywhere. Only a few leaves had fallen to offer a carpet on which to scuff our way through the forest. When the sun slipped behind the south rim, the yellows seemed to stand out in even greater contrast on the now-darker green of the conifers. Crossing the Happy Isles bridge at dusk, we promised ourselves that we would return once again before winter snows chased away all traces of autumn.

In late November, we did, indeed, return to the Yosemite high country to climb Mount Clark. Except for a few changes, we found things as we had left them. The deciduous trees had lost their leaves, which were now brown, rather than yellow, and ready for scuffing. It was colder, the streams were lower, and the days noticeably shorter.

Hiking through Little Yosemite Valley and beyond to the unnamed lakes immediately north of Mount Clark, we felt a special aloneness. The usual late summer traffic of hikers was gone. Along the Merced River the campsites were deserted. No footprints marked the trail. Fallen branches and leaves across the trail told us that no one had been through for weeks. No distant whinny of pack animal disturbed the penetrating silence. We had the high country to ourselves, and we were keenly aware of a unique possession.

High on the slopes of the Clark Range, the few springs were nearly all frozen. Once-soggy meadows were now frozen bogs well-disguised with clumps of dry grass. More than once someone slipped unexpectedly after stepping on what had appeared to be solid ground but proved to be firm ice. The magnificence of the sunrise on a November morning guided us to the summit of Mount Clark, from whose top we earned a most intimate view of the Yosemite high country. There was scarcely a single prominent peak anywhere that we could not identify. And to the west, in deep shade of early morning, the great valley.

The Wonderful Silence

Our descent carried us past frozen lakes surrounded to their edges with bright yellow-brown meadows of dry grass. And the silence! We stopped frequently just to listen to it. In summer, there are sounds: the wind, running water, lapping lake shores, birds, and occasionally a human voice. In winter there is the roar of the north wind. And in the spring, the roar of the flood water echoing through every hallway and corridor of Yosemite. But in autumn there is a silence—a stillness that is so utter as to give one a kind of intuitive grasp of something eternal. So it was, at least, that we, reluctant city-dwellers, found the Yosemite high country in autumn. ■

Phil Arnot, graduate of the University of California, is a teacher of history and international relations at Belmont, California. In summer he is a guide for teen-agers' Sierra mountain excursions.

Do We Need a "Geobiotic Ethic?"

By Joseph J. Shomon

This article has been excerpted from a paper presented before the Thirty-Eighth Annual Meeting of the Virginia Academy of Science, held at Richmond from May 11 to 14, 1960. Dr. Shomon is chief of the Education Division, Virginia Commission of Game and Inland Fisheries, and editor of VIRGINIA WILDLIFE MAGAZINE.

MOST OF US would agree that we in America are enjoying the highest living standard of any nation on earth. No country rivals us in comforts and conveniences. We have more homes, more radio and television sets, more cars, highways, supermarkets, more gadgets than any other people, and we are proud of it. As a result of all this convenience and material abundance, we have been inclined to believe that we are best in everything. But things changed with *Sputnik*. Now we are beginning to wonder just how thin our illusion of superiority really is.

How well have we in America, for example, adjusted our way of life to the land upon which we live and to the living things of the earth that feed and clothe us? To what extent have we safeguarded our fundamental natural resource base from which we draw economic strength and much of our spiritual sustenance? A brief look at the record will tell us.

First of all, the total soil picture in this country, in spite of the temporary problem of overproduction, is not bright. Each year because of neglect we are losing to erosion by water and wind some 300 million tons of nutrient-bearing topsoil, muddying our nation's streams and rivers, silting our reservoirs, riverbeds, deltas, bays. To cope with this loss in soil nutrients, we are feverishly attempting to make up the deficit with chemical compounds, the very nature of which in their total cumulative effect upon plants and animals—and man—is not fully known. Indeed, some inorganic growth stimulants, as well as chemical controlling agents for pests and plant diseases, in part necessitated by weakened soil fertility, may have dangerous repercussions on life itself.

On our water front, the picture is also far from good. The problems here are vast and largely center around those of quantity, quality, and proper water responsibility. Each day in this country we consume in one way or another more than 198 billion gallons of fresh water, or roughly some 1200 gallons a day per person. This is equal to about one-eighth of the total yield of our nation's rivers and aquifers. By the year 2000 this amount may treble. Every day, in the meantime, we continue the abominable practice of pouring raw sewage and industrial wastes into our nation's watercourses, endangering human health, weakening and killing plant and fish life to the extent that today many of our once glorious rivers are nothing more than biologically deserted open sewers.

Forest Acreage Diminishes

The nation's forest supply, while more encouraging than the other natural resources, after more than fifty years of scientific forest management is still disheartening. Today America continues to cut three sawtimber trees for every two that grow. Furthermore, available acreage for future forest production is steadily diminishing.

The score on wildlife resources, save for a very few species like deer and antelope, is not encouraging. During the past two centuries America has lost twenty species of wild mammals and birds. These are extinct—gone forever. Another fifty-seven species of wild birds and mammals have been dangerously depleted, plus five species of fish. Over-exploitation of numbers themselves and destruction of food and cover are the main reasons for the dwindling wildlife supply. Even though today game and fish management has become more and more an art and science, the overwhelming decimating forces of overpopulation (U.S. estimated population now about 180 million) and social change are leaving wildlife biologists virtually powerless to resolve the problem.

As far as our mineral resources are concerned, these too are being rapidly and often needlessly exploited, endangering our very survival. According to the President's Materials Policy Commission report, our nation's reserves in fossil fuels and in iron and other metals have reached a dangerously low level. Unless new sources of supply or new forms of energy are rapidly discovered, we stand on the verge of being a "have not" nation.

And what about our recreational, spiritual, and esthetic resources in America? To what extent have we safeguarded these inherent values in our national growth and development? One does not have to dwell at length here, for the scarred, disheveled, littered and ravaged land that is much of America today tells its own story.

One of the difficult problems of our day is how to resolve the issue of conflicting interests: how to ameliorate the differences between those who seek to further exploit America and those who wish to preserve some semblance of our natural environment. The present fight over billboard advertisements on the interstate highway system is one example of the conflict of interests. Another is the struggle for wilderness preservation and the safeguarding of wetlands and wild areas. Another is the fight to maintain natural habitat for many rapidly diminishing forms of wildlife and plants.

Clearly, then, there is some interest among our people to safeguard, as much as is humanly possible, the natural environment of man—the world of nature which means so much to him and to which he is inextricably bound by his evolutionary development. Such a need becomes clearly apparent to almost any thinking person, but the problem lies in transferring what is *needed* into what is really *wanted* by our body

politic. It is here where our whole conservation effort breaks down. Not enough people "want" to do something about it. The need is evident, people are in sympathy with the idea, but here much of the interest in safeguarding our natural resources stops.

The problem at hand, then, it seems to me, is largely a problem of the spirit, rather than one of economics. We must somehow *want* to do more than we are doing now. The science and technology to transfer America onto a safeguarded and sustained natural resources level are available for the task. So are the means. What we lack is the motivation to do it. Here is where the right kind of an ecological conscience on the part of our people can do much for America. Here is where a new ethic toward our earth can supply the motivation to get a much needed job done.

Developing an Ethic

Such an ethic does not exist now. It must be created. It must be developed. If the land of America and the democracy which we enjoy so much are to be sustained, we must measure up to this kind of an assignment. If we fail to develop such a spirit, such an attitude of America, we risk the fate of other great nations of the past whose decline was hastened by irresponsibility and misuse of natural resources.

* * * * *

To talk of an ethic may appear to some as useless sentimentality. But the question arises: Is sentiment as powerless as it may seem to guide a nation toward a nobler purpose? How great can any commonwealth become, how long can any nation endure, how great can any person become if everything is measured by the dollar sign or things material?

There exists within us a fundamental purpose in being, a sense of gratitude, and ways of expressing it. We in America have been generous in our regard for the unusual men of the past who have helped to build our nation. But we must remember that much of their greatness—and the greatness of the whole of America—has been due to the lavishness and generosity of Nature . . . to the God-given earth and the things of the earth which have existed or evolved through the millennia of time. The early Greeks worshipped their gods who gave them land and beauty and grain. Is it foolish for us, in our enlightened atomic age, to exercise good stewardship toward our Creator's world, to commemorate by generous safekeeping the natural wealth of our land which is the backbone of our economic strength and much of our spiritual vigor? In my humble judgment, I do not think so. To me, it seems a matter of ethics, a sense of fundamental correctness and national decency. How are we to shape our future if we do not leave for ourselves and our children examples—and scientific samples—of some of our natural environment?

There is a distinct need for the emergence of a strong ecological conscience among men, a sensitivity and a sentimentality toward the Good Earth that sustains us—a feeling of reverence and respect toward all the inanimate things of the earth and all the living things that dwell upon it. For want of a better term, let me call this feeling, this attitude, a *geobiotic ethic*. We do not have such an ethic today.

Such an ethic, I feel, we must somehow create, somehow develop, somehow cultivate in our land, or risk the chances of plummeting more and more toward a highly mechanized, standardized, and artificial world—a world where, as Dr. Paul Sears says, we may have to eat standing up and gain much of our spirit only from our dreams.

The genius which transformed America into the most industrialized nation on earth now can be directed toward yet another task—that of ennobling the human personality and advancing man's conscience through a deep and genuine geobiotic ethic.

The question is, have we the will to do it, and time? Here the scientist and the professional can rise to the challenge and supply the motivation and leadership—and example—that will be necessary to make this a reality.

The hour is close to midnight, but we still have a measure of freedom to choose our destiny. ◆

Native Palm

(Continued from page 7)

preserved in tribal ownership. Only last year, in testifying on legislation designed to distribute lands among the individual members of the band, Agua Caliente leaders took the position that Palm Canyon and other areas of special importance to the band should be exempted from such a distribution.

In any case, a day with a picnic lunch and camera among these canyons is a day well spent, and the visitor will take away with him an acquaintance with one of the nation's most unusual as well as rewarding areas. ■

Everglades

(Continued from page 12)

ern Florida is dependent upon the recreational opportunities the natural conditions in this area provide.

It should be borne in mind that the ecology of each vegetation zone depends—in varying degree—upon the upstream supply of water. Everglades National Park now receives, on average, approximately one-fifth the ground water flow it received in pre-drainage years; and, as the State of Florida expands economically, the demands on Everglades water may well increase. Fundamentally, there is conflict in southern Florida—conflict between interests that are attempting to satisfy economic and domestic appetites, and park interests that seek to preserve nature's balance and beauty. The future of the park is in the balance! ■

Conservation News Briefs

Special Notice!

Support on Zoning Regulations Urged

National parks and national nature monuments are not resorts or amusement centers. The introduction of incongruous recreational features diminishes visitors' enjoyment of the basic character of the sanctuaries. Resort amusement facilities, such as golf courses, swimming pools, ski lifts, tramways, skating rinks, tennis courts and speedboats, abundantly available elsewhere, destroy wilderness atmosphere, and defeat the purpose of visitors who wish to derive inspiration from contact with pristine nature. . . .

Because outboard motors, speedboats and airplanes are a disturbing influence to those seeking the quiet serenity of nature, as well as detrimental to wildlife, they should be prohibited in national parks and monuments.

The two paragraphs above are from the statement of policy entitled "A National Policy for National Parks and Monuments" adopted by the Board of Trustees of the National Parks Association, May 23, 1957.

At about the time that this issue of *National Parks Magazine* is being printed and distributed, public hearings are being held by the Interior Department in and around Yellowstone National Park on the National Park Service's proposed public plans for the northern and southern parts of Yellowstone Lake.

The plan for the southern part of the lake, the Southeast Arm and the South Arm, which together comprise less than twenty percent of the lake's area, calls for the exclusion of all powerboats. This regulation is designed for the protection of the park's only nesting habitat for several species of oceanic birds, including the white pelican, the double-crested cormorant, the Caspian tern and the California gull. The nesting grounds of these birds are being seriously threatened by the turmoil and backwash of the speedboat enthusiasts, who, up to the present, roar over the lake unchecked and in rapidly increasing numbers.

The National Parks Association feels that public powerboating on lakes in national parks is incompatible with the purposes for which the areas were established—and most especially in the case of Yellowstone Lake, where the speedboaters are presenting not only an esthetic affront to park visitors, but also a serious menace to parts of the area's wildlife.

We urge every reader of this magazine to take a personal interest in this serious situation, and to support the stand of the Park Service in zoning Yellowstone Lake for the protection of wildlife and for the greater human enjoyment of the park. We urge our readers to write immediately to Mr. Conrad Wirth, Director of the National Park Service, Department of the Interior, Washington 25, D. C., announcing support of the Park Service's proposed Yellowstone Lake zoning regulations. The speedboat enthusiasts are highly vocal in the matter; defenders of our nationally preserved areas must not be less so!

New Wildlife Refuges

The Migratory Bird Conservation Commission of the Fish and Wildlife Service has authorized the establishment of two new National Wildlife Refuges. The new areas will be the Ouray National Wildlife Refuge in Uintah County, Utah (9720 acres), and the Wapanocco National Wildlife Refuge in Crittenden County, Arkansas (5532 acres). The Ouray Refuge will provide necessary protection for the Great Basin goose which has historically nested in the area.

Acquisition of these lands, which includes leasing 2222 acres from the Ute Indian tribe, was considered advisable to preserve the oxbow lakes and marshes at Ouray. The Wapanocca Refuge, a new unit in the National Refuge system, will aid in extending the goose migration to the southern part of the Mississippi Valley.

Additional lands for established refuges have also been authorized by the Migratory Bird Conservation Commission. The refuges are Holla Bend, Arkansas, 12 acres; Chautauqua, Illinois, 16 acres; Canfield Lake, North Dakota, 1546 acres; Florence Lake, North Dakota, 1548 acres; Hobart Lake, North Dakota, 1808 acres; Lake George, North Dakota, 2499 acres; Columbia, Washington, 140 acres; and McNary, Washington, 185 acres.

C. W. Mattison Retires from Forest Service

After more than thirty years with the U.S. Forest Service, Charles Wesley Mattison has retired as head of the education branch of the Division of Information and Education. A native of New York State, Mr. Mattison's first position with the Forest Service was in Lassen National Forest, California. He also worked with the CCC camps and the Timber Production War Project in Virginia. Since 1946 he has served as a combination educator and forestry-conservation publicist for the Forest Service, writing numerous articles for encyclopedias, technical journals and magazines.

Successor to Mr. Mattison is Dr. Matthew J. Brennan. Dr. Brennan has been a specialist in elementary science in the Office of Education of the Department of Health, Education and Welfare. Recently he served as chairman for the New Jersey Conservation Education Project of the National Association of Biology Teachers.

Landscape Architects Support Park Land Bond Issue

At the sixty-first annual convention of the American Society of Landscape Architects, held in New York City during the latter part of June, more than three hundred of the nation's leading land and city planners adopted a resolution calling upon the voters of New York State to

support Governor Nelson Rockefeller's recently-proposed $75,000,000 bond issue for the acquisition of additional State park and recreational area lands. The proposed bond issue will appear on the ballot of that State in November.

Noting that attendance at the State's "excellent" park system units has increased by eight percent a year since the Second World War, the Society pointed out that New York's outdoor recreation facilities are in short supply for present needs, and will have to serve an estimated thirteen million additional visitors by the year 2000. In a wire to Governor Rockefeller, Society President Norman T. Newton extended "our congratulations to you for your vision in advancing this issue and for your long record of contribution to the cause of intelligent land use."

School Bulletins Available

The National Geographic Society, of Washington, D. C., has announced that the first of thirty weekly issues of the *Geographic School Bulletins* for the 1960-61 school year will make its appearance on October 3rd. Covering a wide range of geographic, historical, natural history, and science subjects, the bulletins report on the world and its life, presenting illustrated articles especially suitable for classroom use and home study. They have been an aid to educators and students since 1922, and draw on the vast stockpile of material compiled by the Society's corps of writers, photographers and research workers.

Any teacher, librarian, educational worker, student or parent may subscribe, and teachers may obtain subscriptions for all members in their classes. In the latter case, however, copies must be mailed in bulk to one address.

To obtain the publication, or more information concerning it, the reader should get in touch with the School Service Division, National Geographic Society, Washington 6, D. C. The domestic subscription rate for the thirty issues is $2.00.

Wildlife Refuge Visitation Scores Large Gain

The Interior Department's Bureau of Sport Fisheries and Wildlife recently made public the figures on visitation at our National Wildlife Refuges for the year 1959. After the last human nose was counted, a total of 9,936,000 persons had availed themselves of wildlife refuges for some sort of recreation, the most popular forms of which were wildlife observation, photography, picnicking and swimming. The gain in visitation over the 1958 figure amounted to a whopping 822,000, roughly nine percent. As recently as 1951, the Bureau points out, "only" three and a half million persons visited the national wildlife refuges.

Defense and Interior Sign Conservation Memo

A "memorandum of understanding for the conservation of fish and wildlife resources on military installations" was jointly signed by Secretary of Defense Thomas S. Gates, Jr., and Secretary of the Interior Fred A. Seaton on July 11th. Under the agreement, the Interior Department will act as advisor to the Defense Department in conservation matters, and will exchange information with Defense looking toward the improvement of conservation techniques, new conservation programs, and cooperation with state and local conservation agencies in the safeguarding of field, lake, and stream resources under military jurisdiction.

"I have long been personally interested in and a firm supporter of the Department of Defense conservation program," said Secretary Gates on the occasion of the memorandum signing; "I welcome this opportunity to affirm our intentions of doing the best possible job in providing for the wise use of the natural resources on property under the control of the Armed Forces."

Dates and Places

Federation of Western Outdoor Clubs Convention, September 3-5, Camp Parsons, west side of Hood Canal, nine miles south of Quilcene, Washington.

Redwood Reunion, September 12, in "Grove of Understanding", Jedediah Smith State Park, Crescent City, California. For information write: Mr. Philip Erby, 8339 West Dry Creek Road, Healdsburg, California.

Bridge Canyon Dam Hearings, September 12, Arizona Power Authority and the City of Los Angeles, Federal Power Commission, Washington, D. C.

National Conference on State Parks, September 18-23, Samoset Hotel, Rockland, Maine.

National Recreation Congress, September 25-29, Shoreham Hotel, Washington, D. C.

Southeastern Association of Game and Fish Commissioners, October 23-26, Biloxi, Mississippi.

Dr. Hugh Hammond Bennett, "the father of soil conservation."

During the month of July, the conservation world lost one of its "elder statesmen" in the passing of Dr. Hugh Hammond Bennett, nationally and internationally known as "the father of soil conservation."

Dr. Bennett, whose professional career as a conservation worker commenced in 1903 with the old Bureau of Soils, in the Department of Agriculture, was an early campaigner for the establishment of a national program for soil conservation. His 1928 publication, *Soil Erosion A National Menace,* caught the attention of a Congressional committee, and he was subsequently made chief of the Soil Erosion Service in the Department of the Interior.

When the present Soil Conservation Service of the Department of Agriculture came into being in 1935, Dr. Bennett was appointed as its chief; a position he held until his retirement in October, 1951. During that year he also served briefly as Special Assistant to the Secretary of Agriculture.

A prolific writer, Hugh H. Bennett was the author of five books, hundreds of technical and popular articles on soil and water conservation, and many pamphlets. He was a native of North Carolina, having been born in that State's Anson County on April 15, 1881. ◆

The Editor's

Bookshelf

THE MEANING OF WILDERNESS TO SCIENCE: edited by David Brower. The Sierra Club, San Francisco, California. 1960. With 48 pages of black and white plates. 130 pages in hard cover, plus five jumbo-sized full-color postal cards from the Sierra Club's "Wilderness Card" series. $5.75.

The need for preservation of the nation's dwindling parcels of truly wild lands is most often urged on the basis of spiritual and recreational considerations—which surely in themselves constitute ample reasons. The value of wilderness to the man of science, who is a man to be reckoned with, has not so much been emphasized.

Since 1949, the Sierra Club, west coast conservation and preservation organization, has sponsored six biennial conferences on wilderness; and it is from the transactions of the latest of these, held in San Francisco during March of the past year, that this volume is sprung. It was a conference in which men of science had the floor; and these chapters are, with slight editing, the words of their presentations.

Thus, the reader may follow Daniel Beard of the National Park Service into the field of ecology, the better to appreciate our need for natural areas in which plant and animal communities may flourish entire. Dr. Luna Leopold of the Geological Survey points out the value of unspoiled areas to the science of hydrology. South Africa's Dr. Raymond Cowles speaks of the world's skyrocketing population, and warns that the time is short for the establishment of adequate wildlife and wildland preserves. Other scientists—Stanley Cain, Robert Rausch, Ian Cowan, Frank Darling—present the value of wilderness to their own specializations.

"The biological sciences, especially those which emphasize relationships and interdependence of plant and animal life communities," says part of Resolution One adopted by the Conference, "are being recognized as of critical importance to the welfare of mankind and the nation. In order to evaluate life processes in areas where man has changed the face of the Earth, it is necessary to have a variety of areas still in their natural state for purposes of comparison—to serve as 'bench-marks' with which to relate the effect of man's activities on the plant and animal life upon which his own life depends."

This is the essence of *The Meaning of Wilderness to Science*—and the time is now and in the near future. —*P.M.T.*

HIGH SIERRA—MOUNTAIN WONDERLAND: by Joseph Wampler, Weldon F. Heald, and Charles McDermand. Box 45, Berkeley 1, California. 1960. With many black and white photographs by the authors. 122 pages in paper cover, $2.00.

"The Sierra Nevada is, in truth, many worlds in one," writes Weldon F. Heald, in this recent publication of which he, Joseph Wampler (of "Wampler Trail Trips" fame) and fisherman Charles McDermand are co-authors.

Mr. Heald and Mr. Wampler have borne the greater weight of the writing for this type-and-paper tour of the many worlds to be found in the Sierra Nevada, while Author McDermand has furnished the book with a chapter on the fish and fishing to be found there. The first two men, who have likely probed the back country of the West as deeply and intimately as any present-day Americans, present the historical, botanical, faunal and geological story of these fascinating mountains. The volume is richly illustrated with photographs from the competent cameras of all three authors.

—*P.M.T.*

A Quick Glance at . . .

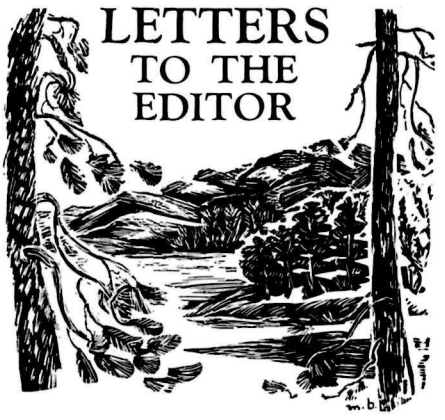
BETTER VACATIONS FOR YOUR MONEY by Michael Frome. Doubleday, New York, 1960. Illus. 183 pp. $2.95—Tips on all kinds of vacation auto travel to big cities, national parks, resorts, campgrounds and historic landmarks. Of greatest help are frequent references to places to write for further information on credit cards, restaurants, accommodations, tour information, etc. Numerous tantalizing photographs and fifteen suggested tours.

THE HIGHWAY AND THE LANDSCAPE edited by W. Brewster Snow. Rutgers University Press, New Brunswick, New Jersey, 1959. Illus. 230 pp. $5.00—Landscape architects, civil engineers, economists, traffic specialists and even a plant pathologist contribute to this discussion of principles of a modern road building program. A road is not a stretch of pavement designed to get the automobile to its destination in the shortest way possible. It is a part of the landscape, a public structure, integral to the community. Authors discuss what the highway can and should do for the motorist as well as the community; the relationship between highway building and the future land use of the United States; and conservation of our natural scenic heritage. A thoughtful argument in favor of the thesis that roads can be beautiful as well as useful.

MOUNTAINEERING—THE FREEDOM OF THE HILLS. Mountaineers, P.O. Box 122, Seattle 11, Washington, 1960. Illus. 448 pp. $7.50—A textbook for students of mountain climbing, edited and written by Mountaineer climbing members and students of their climbing school. In two parts: Approaching the Peaks, and Rock Climbing, with an appendix on food requirements for climbers.

A CORRECTION

In the review of *Meet the Southwest Deserts* (Aug., 1960), the town address of Publisher Dale Stuart King was inadvertently omitted. It is Six Shooter Canyon, Globe, Arizona. *National Parks Magazine* regrets the omission.



Should Not Be Banished

As an ardent trailer traveler, I am not anxious to see special trailer parking facilities in the national parks, but prefer to continue trailer parking in the regular camping areas. In a well-planned campground, of which Glacier Basin Campground in Rocky Mountain National Park is one of many examples, the campsites are far enough apart so that the bulk of the trailer does not intrude upon neighboring campers. If trailer campers are well-mannered, and most of them are, there is no reason why they should be resented by other campers. We should not be banished for placing our tents on wheels.

National park camping should be reserved for those who want beauty, solitude, and the inspiring experience of camping directly amid this grandeur, and who are willing to endure some inconvenience in exchange. In order to install sewer and water connections it is necessary to dig up the place, meaning that an equipped trailer area is a treeless field, whose sky is decorated mainly by electric poles and wires.

Special trailer facilities, other than space in regular campgrounds, would be one more 'development' tending to attract people not primarily interested in the intrinsic features of the national parks.

PAUL B. HORTON
Kalamazoo, Michigan

Souvenirs and Trailers

Concerning souvenirs (page 9, July issue of *National Parks Magazine*) I think the most an average park visitor like myself can spent is one or two dollars. I would like to see better quality in inexpensive souvenirs.

And concerning trailers (page 19, July issue) I think they should be *outside* national parks as much as possible. Would towns near parks be willing to build and run trailer facilities, with rentals in accordance with expenses of retiring bond issues to build trailer parks?

MURIEL NEWBERRY
Oakland, California

• We feel, as does Miss Newberry, that trailer facilities should be kept outside national parks wherever possible. We favor and encourage construction by private enterprise of necessary visitor facilities *of all kinds* in areas convenient to, but outside of, national parks and monuments.—*Ed.*

Good Rhetoric, Poor Logic

In reading Mr. Hellman's article in the July 1960 issue, "National Park Souvenirs" we were dismayed to find that the author wandered far from his subject to cast discredit upon the concession operation in Acadia National Park.

The concessioner in Acadia has worked closely and harmoniously with park officials to maintain an acceptable standard for the merchandise offered for sale. To be judged and condemned inferentially by Mr. Hellman is unfair. If he wishes to discuss the existence of buildings in the national parks, that is one thing; but it should not be done in an article dealing with souvenirs.

The paragraph on Acadia in the July issue may be good rhetoric but it is poor logic. It would seem that in an article on souvenirs the author should have at least entered the shop and examined the merchandise. On a subject which calls for some tightly reasoned consideration, Mr. Hellman's emotional outburst contributed little and is harmful.

H. W. HICKEY, Manager
Acadia Corp.
Acadia National Park, Maine

• We do not feel that Mr. Hellman intended to cast "discredit" on the Cadillac Mountain concession operation in Acadia, but rather that he was referring to the unfortunate location of the concession building. Mr. Hickey has a well-founded basis for complaint, however; the discussion was based on the merit of the souvenirs offered to the public within national parks, and was not concerned with the location of the concession buildings themselves.—*Ed.*

Boosts Park Fund

I am renewing my subscription for another year. I would like to say that I have enjoyed your magazine for nearly two years now, and each is better than the last. Could you tell me if the idea I sent which was published in the March, 1960, magazine ever got off the ground? [Mr. Harris recently sent NPA a dollar as the starting point for a fund to acquire and hold park lands pending appropriation of purchase money by Congress.—Ed.]

PHILLIP B. HARRIS, JR.
Minneapolis 5, Minnesota

• We appreciated receiving the renewal of your membership and subscription for another year. We do have a little fund for the purchase of land and we will add your dollar to it. We have never gone very far in this direction, feeling that the financial resources of the government for land purchase purposes, its powers of eminent domain, etc., are so vastly greater than those of private individuals or corporations, that it must necessarily carry the main responsibility.

Anthony Wayne Smith
Executive Secretary

Rainbow Bridge Comment

After noting the article on "Visitor Accommodations" in the July *National Parks Magazine*, I would make this observation. Last spring I visited Mesa Verde National Park. The buildings there appear less out of tune with the surroundings than those in any other of the national parks I have visited.

I also wanted to visit Rainbow Bridge before it is "loused up" with the encroachment of the backwater from Glen Canyon Dam, but poor transportation prevented the visit. I would like to have a hundred feet or more, if necessary, lopped off the dam to be sure that the backwater could never encroach on the locality of Rainbow Bridge. The height of the dam could be lowered without destroying any material but paper, since the construction has hardly got off the ground as yet.

H. M. STRYKER
Salem, Oregon

IN THE BACK COVER PHOTOGRAPH the contorted branches of a limber pine reach skyward from a bleak jumble of lava fragments, in Idaho's Craters of the Moon National Monument. The monument preserves a wide variety of volcanic relics—cinder and spatter cones, bombs, lava tubes and caves, some of very recent origin. Courtesy of Idaho State Board of Publicity.