NATIONAL PARKS *Magazine*

The Coyote, Little Cousin of the Gray Wolf. Interior Alaska.

March 1961

The Editorial Page

Establishment of the Arctic Wildlife Range

One of the outstanding conservation accomplishments of the recently-departed Eisenhower administration—and one which we feel reflects great credit both on the administration and its last Secretary of the Interior, Mr. Fred A. Seaton—was the establishment of a great national wildlife range in the northeastern corner of the new State of Alaska. The short news story and accompanying map on page 17 of the January, 1961, issue of this magazine acquainted our readers with the bare details and outline of this largest of American wildlife refuges.

In both size and location, the recently created Arctic Wildlife Range is unique among our national possessions of the kind. With an area of some nine millions of acres—somewhat less than twice the size of the State of New Jersey—this vast wilderness, wholly north of the Arctic Circle and dominated by the rugged Brooks Range, contains a wealth of plant and animal life far in excess of that commonly credited to areas of its latitude. It is a preservation of major importance both to esthete and scientist.

Here flourish, during the short but warm Arctic summer, more than three hundred listed species of wildflowers and other plants—grasses, shrubs and trees. During the long days of sun, torrents make their way from the glaciers and ice fields of the Brooks Range along myriad willow-banked streams to the bays and marshes of the Arctic Ocean. Winters conform to the popular image of the Arctic—they are long and intensely cold.

The Brooks Range and its adjacent lands are the home of such great mammals as the polar and black bear, and the Arctic grizzly; the Stone caribou, Dall sheep and Alaska moose. Among the lesser mammals are the wolf, the Arctic and Alaska foxes, wolverine, ermine, lynx, beaver, otter and many others. Several of the larger mammal species have been gravely threatened with extinction in recent years.

The plains, tundra and Arctic shore of the Range are habitat for many bird species, including migrants like ducks and geese, and many kinds of shore birds; and the setting for the whole is both grand and superbly wild.

It had long been the hope of conservationists that such a wildlife management and great natural study area should be established in northern Alaska for the better protection of Arctic wildlife; a preserve in which public hunting might at the very least be placed under reasonable controls.

Before leaving office, Secretary Seaton expressed the hope that the newly created Arctic Wildlife Range—which, it must be said, was brought into being by the stroke of a pen—be allowed to permanently fulfill the purposes for which it was established. We are sure that all sensitive and thinking people will heartily concur. ◆

A Tribute to Dr. Paul Bartsch

By the Trustees of the National Parks Association

OVER THE LONG YEARS the National Parks Association has taken great pride in the presence of Dr. Paul Bartsch on its Board of Trustees.

His death at an advanced age last year has deprived us of a valued friend and counselor, but can never take from us the memory of his wise and kindly companionship, nor the fruits of his inspired guidance.

Throughout his life, Dr. Bartsch continuously won great distinction as a man and a scientist. More than many in an age of minute specialization, he combined expert skill and knowledge in his specialty with broad versatility in other fields, and an ability to integrate his great knowledge into a living entirety.

He has been described aptly as a general practitioner of biology; but because his biology included people, he was in truth a philosopher as well.

His specialty was shellfish. But he was also a lover of birds, and among his early pioneering achievements was distinguished work in bird-banding.

He also explored the use of the electric arc in projecting photographic slides and images of living cells. He made personal use of the earliest techniques of undersea exploration and underwater photography of mollusks, fish and marine vegetation.

He was deeply concerned with the preservation of nature and lent himself with devotion, as a member of our Board, to the work of protecting our national parks and monuments as nature reserves.

His beautiful home, *Lebanon*, in Virginia, is the creation of Dr. Bartsch and his wife, Dr. Elizabeth Parker, the physician. The unmatched living collection of ferns and the fascinating population of birds attests their mutual interest in all the wondrous array of the forms of life.

Dr. Paul Bartsch

Lebanon has been a second home for nature lovers in the Washington region for years. It is a wildlife nature sanctuary of great importance which should itself be protected. Our Association has enjoyed the hospitality of the Bartschs there on the occasion of our annual meetings, and our appreciation is profound.

Paul Bartsch is gone from among us. The inspiration of his work and personality remains. ◆

NATIONAL PARKS MAGAZINE

OFFICIAL PUBLICATION OF THE NATIONAL PARKS ASSOCIATION

MARCH 1961 Vol. 35, No. 162

Paul M. Tilden, Editor

Contents

THE FRONT COVER FOR MARCH

Appropriate to the observation of National Wildlife Week—March 19 to 25—is our front cover photograph of the coyote, keen and able kin to the wolf and fox, and hearty survivor of man's assault with the gun, the club and the poisoned bait. Once a mammal of the great American plains, the coyote has greatly increased the extent of its habitat; it may now occasionally be found as far east as New York State and as far north as the interior of the new State of Alaska.

A Photograph by Charles J. Ott

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. Contributions and bequests are also needed to help carry on this park protection work. Dues in excess of $5 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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Robert W. Hines, U.S. Fish and Wildlife Service

The Tule Lake National Wildlife Refuge, shown in part above, is one of the Klamath Basin refuges of northern California and southern Oregon that are twice-yearly havens for countless millions of Pacific flyway waterfowl.

Tule Lake and Lower Klamath Wildlife Refuges are

Crossroads for Western Waterfowl

By Daniel A. Poole

AIR TRAFFIC CONTROL IS strictly for the birds along the Oregon-California boundary each spring and fall as millions of ducks, geese and other migratory birds wing into the Tule Lake and Lower Klamath National Wildlife Refuges.

Some of the northbound migrants go no farther. They filter into the refuges and busy themselves with nesting, rearing their young, and preparing them to take part in the great semi-annual flights that have washed up and down the continent for eons. Others rest and feed, and then push on into the vast breeding grounds of Canada, Alaska and the Northwest Territories. But no matter how widely the birds disperse, most of them touch base again in the fall at Tule and Lower Klamath Lakes as their retreat from winter moves the massed migrants down the Pacific waterfowl flyway.

Tule Lake and Lower Klamath Refuges are truly the waterfowl crossroads of the West. Not less than seventy percent of the flyway's waterfowl population uses the refuges at least twice a year. Recapture of ducks and geese that have been leg-banded in various parts of the continent's westernmost flyway shows that during the fall migration, many of the birds halt their southward movement along the coast and turn inland, crossing the Cascade Range to settle in the Klamath Basin refuges. Others from the eastern limits of the flyway swing westward at Idaho's Snake River, and at Great Salt Lake in Utah, to reach the basin. Millions of pintail ducks that nest on the prairies of Alberta and Saskatchewan make their fall rendezvous at the two refuges. Ornithologists long have recognized the Klamath Basin as the funnel through which passes a large part of the Pacific flyway's ducks and geese at least twice yearly. And the materials from which that funnel is made are the Tule Lake and Lower Klamath National Wildlife Refuges.

Basin's Wetlands Drained

Mere remnants of the million-acre expanse of shallow lakes and marshes that once flooded the Klamath Basin, the refuges are administered by the United States Fish and Wildlife Service. Most of the basin's wetlands have been drained during the past fifty years, and now are the basis for a prosperous irrigated-agriculture economy. The refuges occupy sumps that are a part of the system for collecting and controlling excess irrigation water. The extensive modification of the basin marshland has not altered the age-old migrational habits of the waterfowl, however, and they continue to fly the historic routes and crowd into the marshlands that remain.

This creates both problems and benefits. The problems arise chiefly from the fact that the refuges encompass a few acres of arable land that some persons ultimately hope to force into private ownership. This locally intense feeling seemingly stems more from an aversion to the dedication of land in public ownership for public benefit than it does from any substantial gain in the number of homesteads the refuges would accommodate.

The primary beneficiaries of the refuges are the ducks and geese and the tremendous variety of other species of wading and marsh birds that find food and cover there. Hundreds of thousands of persons up and down the Pacific Coast States who find pleasure in observing, photographing, and studying the birds—and in hunting waterfowl—benefit markedly from these wildlife refuges.

The refuges have another group of beneficiaries who are not widely known. They are the rice and lettuce farmers of Central California. Tule Lake and Lower Klamath Refuges are the last important stopping places for the birds on their way to historic wintering marshes in California and beyond. Natural marsh habitat is restricted, for the most part, south of the Klamath Basin, and planted fields now flourish in the San Joaquin and Sacramento River Valleys. Reclamation has put many natural marshes out of business, and flooded rice fields form attractive gathering places for the waterfowl in some areas. Crop losses mount whenever the feathered travelers "pull up a chair" in farm fields in large numbers.

Wildlife experts say that the Klamath refuges are the pivots, the balancing points, that help equalize waterfowl production on the breeding grounds in the north with the limited wintering marshes in the south of the Pacific flyway. The conflict between ducks and crops in Central California becomes more severe as additional marshlands are drained. Its solution, of course, rests neither on extermination of the birds nor on arbitrary agricultural limitations. The public rightfully demands and expects to receive a certain amount of each. The principal solution for the depredations difficulty depends on delaying waterfowl migrations into Central California until most of the crops susceptible to hungry birds are harvested. In this regard, the Klamath Basin refuges are an important—and sometimes overlooked—ally of the Golden State's farmers.

Weather Controls Migration

How fast the ducks and geese move from the Klamath Basin into Central California depends largely on two factors—weather and food supplies. The first cannot be controlled, and low temperatures and early freezing can prompt the birds into quitting the basin in mighty flocks. Food can, and is, being regulated to a large degree. The refuges produce a tremendous quantity of usable, high-quality marsh vegetation. Tillable refuge areas are farmed, and federal personnel and lessees put available acreage into oats, barley and wheat. The ripened grain is deliberately harvested in alternate swaths so that stands are left as sizable "dining tables" for the ducks and geese.

C. J. Henry, U.S. Fish and Wildlife Service

Among the larger waterfowl migrants that make use of the Tule and Lower Klamath Lakes are Canada geese. Above, a goose and nest.

Lower Klamath National Wildlife Refuge is one of the first areas ever placed under government jurisdiction for waterfowl preservation. Now containing about 30,000 acres—partly in Oregon, but mostly in California—the refuge was established by an executive order in August, 1908. Initially it comprised more than 80,000 acres with miles of tule-bordered shore line, myriad small islands, and many hundreds of food-producing swamps.

Market hunters took wagon-loads of ducks and geese from Lower Klamath to city counters, and the millinery trade that sought the feathers of terns, grebes and other birds were supplied by plume hunters. Mink, otter and other furbearers were parted from their skins by trappers, who spread out across the vast marsh to partake of its natural wealth.

Lower Klamath's sustaining connection with the Klamath River was cut off in the late 'teens, and within four years the lake bed was dry, subject to peat fires, and shrouded with clouds of ashen, alkaline dust. It was not until many years later, with extensive development and diking, that water was returned to a significant part of the lake bed, and its waterfowl value gradually restored.

Tule Lake Refuge was established by

Daniel A. Poole is editor of publications for the Wildlife Management Institute, widely-known conservation organization of Washington, D.C.

Robert W. Hines, U.S. Fish and Wildlife Service

C. J. Henry, U.S. Fish and Wildlife Service

The Tule Lake Refuge is habitat for mammals as well as waterfowl. Above, a band of Rocky Mountain mule deer stare curiously at the photographer, while at left, the plumage of a nesting gadwall blends perfectly with marshland grass and reeds.

executive order twenty years later, in 1929, when 11,000 acres inundated by excess irrigation water were set aside as a haven for waterfowl. Two subsequent withdrawals increased the refuge to slightly more than 37,000 acres, which include practically all the lands that are being farmed under lease in the old lake bed. Part of the refuge is in natural vegetative cover; some of it is farmed by the U.S. Fish and Wildlife Service, and part by lessees under Bureau of Reclamation leases. Farming plans require that some of the grain grown on the refuge be left standing for the mallards, pintails and other grain-eating birds. By augmenting the natural food supply, the refuge helps attract and hold birds, so that only minimal damage results locally from depredations. This lush supply of food also encourages the birds to remain longer in the Klamath Basin, and provides opportunity for Central California farmers to harvest their crops ahead of the migrants' fall return.

Human Threat Remains

Man remains the predominant threat to the future of the Tule Lake and Lower Klamath Refuges. The very human and relentless drive for more and more land has acted against the refuges over past years, and its present-day counterpart is found in the number of persons, particularly in the vicinity of Tule Lake refuge, who are not reluctant to urge that much more of the refuge be turned over to private hands for homesteading.

Paradoxically, the greatest danger to the refuges rests in the manner by which they were created. Simply put, they were created by the stroke of a pen. They were withdrawn from other uses by the simple declaration that they were required for national waterfowl purposes. This means that despite their success and widely admitted value as refuges, despite their contribution to the welfare of waterfowl in the entire Pacific flyway, and despite the investment of large amounts of time and money in developing dikes, ditches, plantings, refuge buildings, and roads and facilities, the areas technically could be eviscerated or abolished by the same easy stroke of the pen that first created them.

The purpose of this article is not to say that such an event will or will not happen; its purposes is to emphasize that it *could* happen. There is ample reason to be apprehensive. As recently as 1960 an attempt was made to disrupt irrigation water pumping schedules at Tule Lake Refuge so as to raise the marsh level in the spring and flood out nesting sites, and to lower it in the fall and expose hundreds of acres of mud flats. This would, of course, hinder hunting access and minimize the refuge's value as a haven for migrating waterfowl. In fact, the pumping controversy has all the earmarks of being just one more effort by a few organized groups in the vicinity of Tule Lake to impair and discredit the refuge.

This latest difficulty has its roots in a repayment contract signed by the Federal Government and the Tulelake Irrigation District, under which specific works and irrigation facilities of the Klamath Federal Reclamation Project were transferred to the local group for operation and maintenance. According to operating regulations issued under the 1956 contract, the irrigation district agreed to maintain specified objective water levels in the Tule Lake refuge sump to comply with the U. S. Fish and Wildlife Service's year-around wildlife management plan for the area. The levels are controlled by a pumping plant that moves excess irrigation wat water from the Tule Lake sump, through a tunnel in an intervening ridge, to nearby Lower Klamath Refuge.

On December 11, 1959, the Department of the Interior notified the irrigation district that it intended to resume operation of the pumping plant within sixty-five days. Interior said it was determined that the pumps were to be operated so as to "fully meet wildlife conservation objectives while serving their primary purpose of protecting agricultural lands."

Refusal to Co-operate

A departmental memo rundown on the situation noted: "The entire sump level operations since the district took over the operation in January of 1957 have been marked by district refusal to maintain sump levels and contending and threatening that it would operate sump levels to best accommodate the irrigation interests without regard to the wildlife interests. I think it fair to say that the 1958 regulations are quite rigid and exacting by reason of the one-half inch monthly adjustment of sump levels prescribed. However, the October-November deviation of some six inches below prescribed levels has all of the aspect of an open challenge of the regulations and to the wildlife management operations of the sump."

Interior's ultimatum was followed by a joint meeting of departmental wildlife and reclamation bureau personnel with the Tulelake irrigation interest. The then under-Secretary, Elmer F. Bennett, opened the meeting by stating that: "The action of the department in giving the 'take back' notice of December 11, 1959, was based on (a) the unequivocal advice of the Bureau of Reclamation and the Bureau of Sport Fisheries and Wildlife that district operation of the Tule Lake sump regarding the maintenance of water levels for wildlife purposes was in violation of the repayment contract and the operating regulations thereunder for critical portions of the 1959 season; (b) clear advice from the Bureau of Sports Fisheries and Wildlife that such violation was detrimental to the wildlife management functions of the Tule Lake sump; (c) equally clear advice from the Bureau of Reclamation that operation of the sump to meet objective levels in keeping with the contract and regulations would not be incompatible with the irrigation and flood protection operations of the irrigation project; and (d) the Solicitor of the department has advised the Secretary that the regulations governing the operation of the sump are within the authority of this department under its contract with the district."

Notice of Compliance

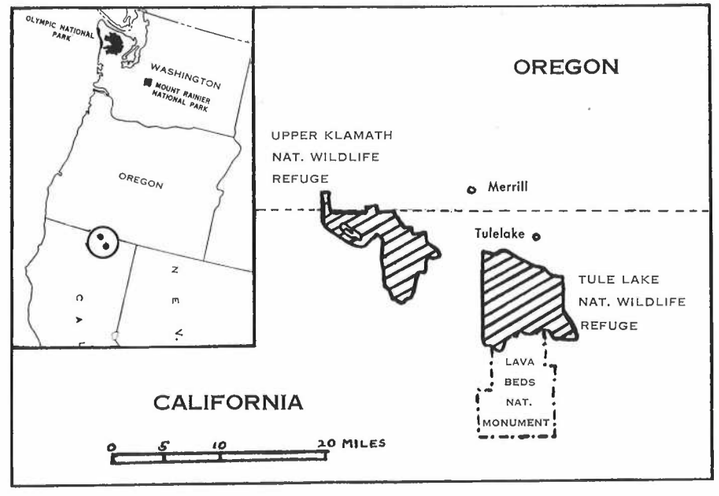
The meeting resulted in a slight modification of some of the objective sump water levels that wildlife and reclamation bureau spokesmen believed would not be inimical to the dual purposes of the wildlife refuge sump. The Tulelake Irrigation District notified the Interior Department of its intent to comply with the established regulations, and the "take-back" order was rescinded. The irrigation district continues to man the pumping facilities and a late check indicates that it is adhering to the agreed target water levels. Past experience would indicate, however, that the district most likely can be expected to renew its campaign against the refuge before many more months pass.

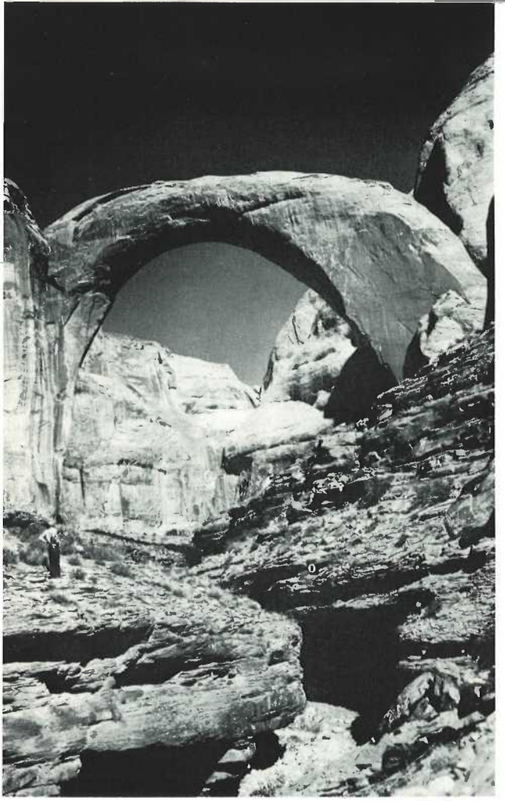
Biological checks last summer show that the water levels specified by the U.S. Fish and Wildlife Service—and adhered to by the irrigation district for the first time in two years—definitely are beneficial to waterfowl using the refuge. The production of young diving ducks went up fifty-seven percent in 1960 over 1958 and 1959. The irrigation interests held the water levels below those specified in the repayment contract during those years.

Low water during the summer of 1959 contributed to the loss of 3500 ducks to botulism, a form of food poisoning known commonly as "western duck sickness." Less than two hundred afflicted ducks were found by refuge personnel in the past year. The maintenance of specified water levels is credited with the past year's low mortality to the dread sickness.

Both areas are so vital to perpetuation of waterfowl on the Pacific flyway that many conservationists feel Congress should enact legislation specifically setting out the refuges under law, and dedicating them permanently as units of the national waterfowl refuge system in the public interest. Such action would eliminate the hazard of an administrative action which could abolish, modify or so alter the remaining marshland with the refuges as to make it of but little value for waterfowl purposes. Congressional recognition of the refuges would change a situation that serves mostly as a catalyst for moves against the remaining refuge lands. Indications are now that conservationist support for such protection is considerable, and that it will continue to grow. ■

The Upper Klamath and Tule Lake Wildlife Refuges, remnants of a million acres of shallow lakes and marshes that once floored the Klamath Basin, are part of an irrigation-water control system.





Bureau of Reclamation

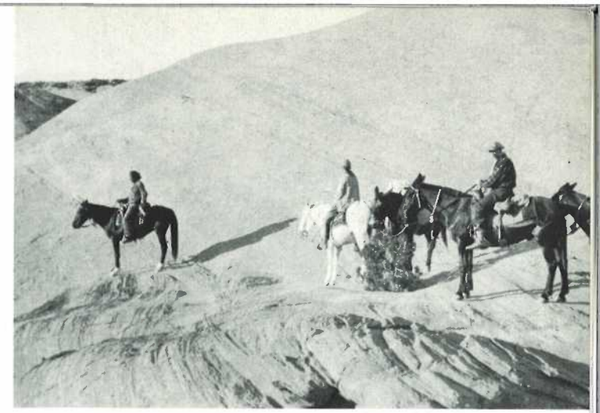
Rainbow Bridge, a great monolith in the wild canyon country of southern Utah, is remarkable both scenically and as a geological phenomenon. It stands some 309 feet above the floor of Bridge Canyon, is 278 feet long, and is commonly believed to be the largest natural bridge in the world.

Construction of the Glen Canyon Dam may mean

The End of the Rainbow Trail

By Natt N. Dodge

Raymond Armsby



Raymond Armsby

Where the Rainbow Trail crosses long stretches of "slickrock" (above), it is not a trail but a route. At the left, a pack train on the Rainbow Trail winds it ways among the pinyons and junipers as horses and mules move through a boulder field.

LIKE A HUGE, DARK DOME on the horizon, Navajo Mountain looms as a massive landmark to dominate the solitude of the Arizona-Utah border from the Colorado River to the Four Corners. Revered by many generations of Navajo Indians as the home of their war gods, the 10,416-foot forest-crowned laccolith stands guard over America's largest and most inaccessible wasteland, the ten-thousand-square-mile Escalante Wilderness.

Carved and sculptured by torrents that spring to sudden life after each storm to form ephemeral tributaries of the San Juan and the Colorado, the massive, sloping layers of sandstone radiating from the mountain's base have been cut into a maze of deep ravines and gorges. Scoured, rounded, and smoothed by forces of weathering, the mountainous rock buttresses between canyons have accumulated soil only in protected locations and rise bare and smooth as sandblasted "slickrock baldheads," perilous footing for man and horse.

Deep within this labyrinth of clefts and canyons northwest of Navajo Mountain is the "sandstone rainbow," the world's largest recorded natural bridge. The *Nonnezoshi* of the Navajo and *Barohoini* of the Paiutes was first seen by white men on August 14, 1909. They were guided to it by the Paiute, Noscha (or Nasja) Begay.

In the half-century that has elapsed since its "discovery," Rainbow Bridge, although considered a world wonder, has been reached by fewer than 12,000 people. Hundreds of miles from heavily-traveled routes, and hidden in the trackless wilderness of slickrock and canyon, Rainbow Bridge, with 160 surrounding acres, was proclaimed a national monument by President Taft on May 30, 1910. For a decade it remained too isolated to be reached by even the most hardy.

In 1920 an enthusiastic and determined explorer, Charles Bernheimer, with a well-equipped pack outfit, endeavored to reach the great arch by crossing Navajo Mountain. But the indescribably rugged terrain—which he reported as "the most appalling rock jumbles on this continent"—proved an impassable obstacle, and he was forced to turn back. Swinging around the trackless northern base of Navajo Mountain, the Bernheimer party picked its way among the scrubby pinyons and junipers of the mesa tops, struggled across rugged canyons leading north to the San Juan, and, led by an Indian guide, finally entered upper Bridge Canyon and followed its scarred and boulder-strewn floor to the foot of the stone rainbow.

Returning in the summer of 1921, Bernheimer approached the slickrock wilderness from the southwest side of Navajo Mountains, following Forbidding Canyon (shown as Forbidden Canyon on modern maps) which traverses the 111th meridian northward, and empties as Aztec Creek into the turbulent Colorado. Bridge Canyon joins Forbidding Canyon from the east about four miles from its junction with the Colorado.

Canyon Too "Snarly"

But Forbidding Canyon proved impassable for pack animals; it was too rugged and snarly, and was blocked by steep shelves that the animals could not negotiate. "Besides," wrote Bernheimer, "Forbidding Canyon had a way of abruptly closing up, its streamlet in the meantime forming an underground passage with sudden ghastly pothole vents or crowded polished throats to one side of a high, steep shelf which blocked all travel except for a man on all fours and with the aid of a rope." Completely hemmed in after forcing its way to within an estimated seven or eight miles of the great bridge, the expedition reluctantly turned back.

But Bernheimer was not to be denied; in the summer of 1922, equipped with an outfit consisting of seven men and twenty-eight horses and mules, he again attacked the immense labyrinth of deep canyons and great buttresses. This time he carried a supply of explosives, resolving to blast his way, if necessary, through all obstacles. Arriving at the southwestern point of Navajo Mountain, the party found, after two days of scouting, what appeared to be a possible route across two of the mountain's flanking buttresses, separated by deep canyons. "This," Bernheimer wrote, "was an endurance test of the most distressing sort for man and beast, followed by one equally trying in order to get down into what we named Cliff Canyon. It required complete concentration to get the caravan of horses and mules safely down some 2500 feet over a sheer and apparently impassable slope. The streamlet at its bottom was dry, and we knew not where we would arrive, for the journey before us was through lands never before penetrated by white man."

Realizing that by following Cliff Canyon he would eventually end up in Forbidding Canyon, Bernheimer kept a close watch to detect a possible route across the massive buttress between Cliff Canyon and Bridge Canyon. A two-day search resulted in the discovery of a small side-canyon penetrating the imposing eastern cliff. Using dynamite and pry bars made from the tough trunks of small redbud trees, the seven men toiled for six days, blasting away obstructions and building a mile of trail through the narrow, rugged gorge that they named Redbud Pass.

On July 9, 1922, the party rode through the narrow defile into Bridge Canyon, and again followed it triumphantly to Rainbow Bridge. Bernheimer exulted in the final accomplishment, proudly proclaiming that, by locating the "Northwest Passage" and by circumnavigating Navajo Mountain, he had finally succeeded in completing the Rainbow Trail.

Since 1922, the two routes with their common objective have been gradually and laboriously improved. An approach road, primitive but passable, has been built from near Tondlea, Arizona, to the starting point of each section of the Rainbow Trail. Navajo Mountain Trading Post, Utah, is the jumping-off place for the twenty-mile route around the northern base of Navajo Mountain. Rainbow Lodge, Arizona, is the start of the fourteen-mile trail by way of Cliff Canyon and Redbud Pass. The trip over either is an experience to be remembered, whether you "tough it out" afoot or go "de luxe" by horse or mule.

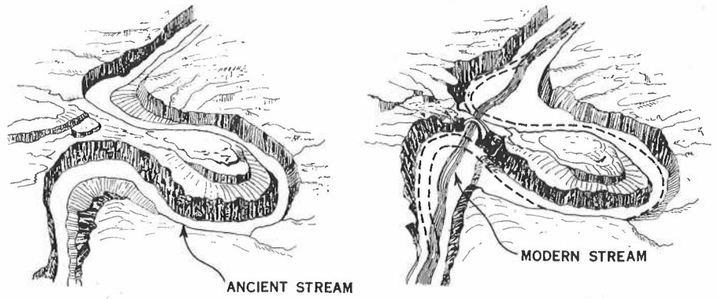
Starting from either the trading post or the lodge, you feel as Columbus must have felt on leaving Spain, departing from the edge of the known world. As you progress, the trail gets rougher. The horse, picking its way among loose boulders, is quite likely, it seems, to scrape you off against a scrubby pinyon or juniper. Suddenly, before you, gapes a tremendous canyon. You get a glimpse of the trail far below, zigzagging and switchbacking down the steep slope. Then your horse steps over the edge, and you instinctively grasp the saddle horn as you lurch forward.

An Inspiring Trail

There is no more rugged—or glorious—route in the Southwest than the Rainbow Trail. Awesome chasms, the great salmon-pink slickrock baldheads glowing in the sun or casting their black shadows across canyon bottoms, and distant vistas framed by twisted junipers or overhanging cliffs are ever before you. At one moment you marvel at the courage and persistence of the Bernheimer party; at the next you find yourself half-expecting to meet the Creator of this wonderland around the next turn of the trail.

The sun is low in the west when, weary and dust-covered, your horse brings you to the bottom of Bridge Canyon. Compared to the terrain you

How a natural bridge is formed



National Park Service

The sketch above illustrates the mode of formation of natural bridges such as Rainbow. Under certain conditions, streams may form a series of curves along their courses that geologists call "meanders." The meanders may subsequently be cut off by the stream as shown in the right-hand sketch above. In the case of Rainbow Bridge, the stream cut *under* the obstructing rock; continued scouring of the water, combined with atmospheric weathering, produced the bridge as it is today.

have encountered during most of the day, the sandy floor of the open gorge, with its vertical acres of sandstone wall, seems like a broad highway. Relaxing in the saddle after the long strain of fighting to stay in it, you look about, giving the horse its head. Ferns and columbines grow in shaded seeps, lupines and asters bloom on sunwashed flats, and ravens stare down at you from ledges among the cliffs. You marvel at the immense cliff coves with their overhanging cornices, wonder why the sky seems to have taken on such a deep blue hue in contrast with the red of the canyon walls, and then—there it is—RAINBOW BRIDGE!

Unlike most natural stone bridges, Rainbow is not a flat ledge but a sweeping arch, one end a part of the canyon wall, the other coming to earth nearly the length of a football field out on the floor of Bridge Canyon. Its seemingly slender span, curving 309 feet above the bottom of the stream channel, is forty-two feet thick, and almost wide enough to carry a three-lane highway. And yet this majestic creation is so symmetrically proportioned—and so lost against the immense background of its surroundings—that from the top of the canyon wall it seems but an exquisitely-carved miniature.

You will probably spend three days enjoying this adventure in solitude; one day en route to the Sandstone Rainbow, one day exploring and photographing its many features, and one day returning to the familiar cares of civilization.

To make the most of your visit, you should see the Bridge from all sides. You should climb a little way up the southwest wall of Bridge Canyon and follow a ledge to the buttress overlooking the cliff end of Rainbow Bridge. Then, with the aid of a rope, you should descend cautiously to the broad, gently curving back of the old monarch and walk out along its crest. You should turn and look up-canyon where, far to the southeast, the great, blue dome of Navajo Mountain looms across a sea of slickrock.

Geology of the Bridge

Sometime during your visit to *Nonnezoshi,* the question is certain to enter your mind: How did this happen? What combination of forces formed this amazing arch? Evidence to answer that question is before you, but the story is not easy to read until it is explained. Geologists who have studied the phenomenon point out that, ages ago, the stream which carved Bridge Canyon followed a swinging meandering course. Evidence of these entrenched meanders is still visible as deep coves worn in the canyon walls, with necks or promontories of rock protruding from the cliffs opposite.

The neck which is now Rainbow Bridge was, at one time, one of those promontories, with the stream bed swinging out and around it.

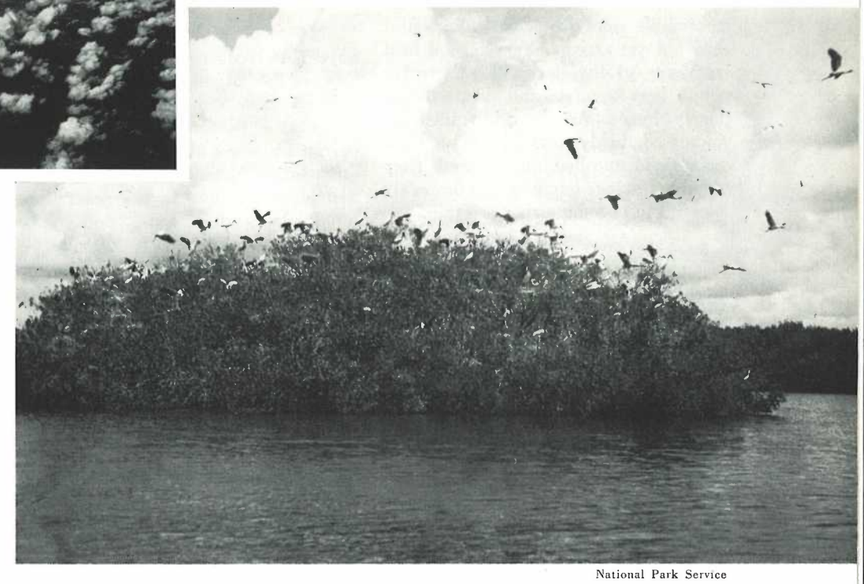
Freshets in Sebigehotsow (Hole-in-the-Rock) Creek, powered and tooled with sand, gravel, and boulders, surged against its base on the upstream side, gradually wearing a cove at the base of the promontory. Eventually the creek broke through and joined its own course on the opposite side. With a straight and steeper channel, the stream cut faster and deeper. Moisture freezing in cracks in the rock above the breach pried loose great chunks, which fell to the bed of the stream. Other agencies of erosion wore away and smoothed the edges of the enlarged hole, and rounded the top and end of the promontory. As the stream cut deeper beneath the young bridge, erosion continued to enlarge the opening, while the span above was further rounded and smoothed, becoming progressively slimmer with age. The process is still continuing.

Within the last decade another route of approach has brought more and more visitors to the great Sandstone Rainbow. Float boats drifting down the San Juan and the Colorado have beached at the mouth of Forbidden Canyon where Aztec Creek pours its clear waters into the Colorado's muddy flood. Motorboats trundled into the river at Kane Creek, just above the construction site of Glen Canyon Dam, have brought passengers up-river to the same landing spot at the mouth of Forbidden Canyon. From there it is a hike of less than five miles up Forbidden Canyon and into its narrow tributary, Bridge Canyon, to Rainbow Bridge.

Construction is now progressing rapidly on Glen Canyon Dam. A few years hence, water backed up-river by the dam will slowly rise in the gorge of the Colorado River. Gradually it will inch farther and farther into hundreds of side canyons, including Forbidden Canyon.

The day is not now far distant when boats skimming across the surface of Lake Powell may bring passengers easily and quickly up flooded Aztec Canyon and within shouting distance of mighty *Barohoini.* A flood of people will come to Rainbow Bridge where only a trickle came in the past. But these thousands will miss the thrills of that wilderness adventure in the slickrock solitude, and the deep satisfaction of following in the footsteps of Bernheimer and his courageous men. The creeping waters of Lake Powell will mean the beginning of the end of the Rainbow Trail. ■

Official U.S. Navy Photograph



National Park Service

Low-flying alto-cumulus clouds over southern Florida warn of the great approaching storm, above; while, at right, the lowering of air pressure ahead of the hurricane causes birds of the Everglades to become restless.

Hurricane Donna Visits the Everglades

By Marilyn Lane

AT MIDNIGHT OF SEPTEMBER 9, 1960, Hurricane Donna ripped into Florida's Everglades and the Everglades National Park, hammering the area for ten hours with winds up to 150 miles an hour. During and immediately after the violent storm, teams of loyal men—naturalists, biologists and rangers—ventured forth at personal risk with two questions in mind: How will the wildlife survive this catastrophe? Can the Florida Everglades make a comeback?

In 1935 another raging hurricane had battered the keys and Everglades, but there had been no opportunity to make an exact study of the damage, and the subsequent recovery of wildlife. Donna, however, was fully documented, both pictorially and graphically. After rescuing as many of the injured birds and animals as possible, the men of the National Park Service, under the leadership of Warren Hamilton, the park superintendent, began to make a careful record of the damage.

For weeks they counted the dead and made an analysis of how the living survived. (More than double the world supply of skeletons of the great white heron were collected and furnished to universities and other institutions for study and research.) The results of the documentation of Donna's effects on nature will not only help men to better understand nature's way of protecting her own, but will also further their knowledge of hurricane patterns.

What, for instance, happens to birds in a hurricane? As the barometric pressure drops, indicating turbulent weather ahead, the birds become stirred up. Certain species of migratory waterfowl may even commence their migration flight. Most birds of this region have a strong instinct to seek out an established roost. There they settle down and "sit tight." They will try to ride out the storm. As the storm approaches, there is obviously a sense of apprehension amongst wildlife—danger is drawing near, and they seem to know it.

Fortunately, most of the birds had

not yet migrated into the South Florida area when the hurricane occurred. If Donna had struck a month later, some species of tropical birds would now be in danger of extinction. The roseate spoonbills were just coming in; most had not yet arrived. Year-around bird residents of the park, like the great white heron, egrets and ibis, suffered heavy losses. As the wind intensity increased, birds were blown off their roosts and smashed into the mud. They drowned, wings flapping in a desperate attempt to become airborne again.

A Scene of Disaster

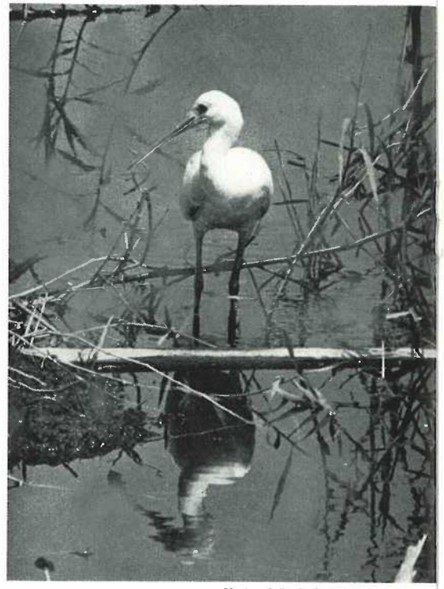
Some birds tried to fly into the teeth of the wind, only to be beaten back and lodged in the crotches of trees. Breaking branches catapulted many into the storm. Many were battered to death by flying objects as the birds hurtled from their roosts. A few nests remained intact, but in many cases, bark and branch missiles dealt the occupants a death blow.

Regional Field Biologist Dr. William B. Robertson, Jr., aided by rangers, counted the dead birds among the fallen trees and debris in the Flamingo-Florida Bay area. He found that more than one-third of the park's great white heron colony was killed. Only some 500 of these birds survived. An even greater number of other types of heron, white ibis, and American egrets were killed. All but two or three of the fifty American or bald eagle nests were wiped out; but no bodies were found. The eagles started to rebuild, and six new nests were spotted a month after Donna. Many bird rookeries and roosts were destroyed, including the famed Duck Rock Roost near the town of Everglades.

A few flocks of birds flew to safety as the storm approached. Roseate spoonbills and white ibis were sighted as far north as Sebring, Florida. Most returned to the southern tip, as the biologist predicted. A delayed hurricane effect has been noted, as far as the spoonbills are concerned. These birds are extremely sensitive to cold, and there is not nearly enough foliage to protect them even from the mild weather of Florida. Their numbers have been reduced even though they escaped the "big blow."

Marilyn Lane, who has written articles for a number of national periodicals, makes her home in Opa-Locka, Florida.

The roseate spoonbills were just coming into the Everglades at the time Hurricane Donna struck; many had not yet arrived. The dazed spoonbill, right, is sole survivor of a flock.



National Park Service

Many deer were drowned in high water as a twelve-foot wall of wind-driven sea swept over them. They, and other larger mammals such as bobcats, had sought refuge in the most sheltered places they could find. They curled up on the lee sides of treefalls, or in thick clumps of brush. When the water rose they suddenly became inundated, and started swimming with the wind. Most of the larger animals reached safety—others became exhausted and floundered.

Snakes swim well and do not drown easily; they, too, try for high ground. Sometimes they become confused and go the wrong way. Park employees found snakes as much as three miles from shore, swimming strongly—in the wrong direction.

Turtles Carried Inland

Great turtles, some weighing as much as 350 pounds and measuring more than five feet long were scooped up out of Florida Bay and deposited far inland. A National Park Service airplane located six turtles trudging along in an opposite direction from their home waters. They had been out of water a month, and were salmon-red from sunburn.

Three naturalists—Ernst Christensen and the Hugh Mullers, a husband-and-wife team—managed to slide one turtle down to the water by flipping it over on its back, grabbing its hind legs, and pulling. The turtle did not like this position, and flung mud on them with its two front feet.

The rangers and naturalists tried a different approach on the next turtle; it was bigger, and impossible to drag. They circled its shell with rope, making a sling on each side. The men put the sling around their necks and carried the turtle to water. When the turtle sighted the water, it became excited, and its four feet started windmilling. This procedure was deemed too difficult, and it was decided to load the remaining four turtles on stretchers of a kind used for humans. Rangers helped in "Operation Turtle-Back," but, despite all their efforts, two of the great turtles died of exposure. The surviving four may have been living when Christopher Columbus discovered America!

The road that runs from the entrance of the park, near Florida City, to Flamingo on the tip of the mainland—a distance of thirty-five miles—came through unscathed. Two weeks after Donna, Florence dumped twelve inches of water on soggy South Florida. Flooding in the more remote areas of the 'glades was extensive, and the water remained high for months; as a result, this road became crowded with wildlife. Deer could be seen standing along the rim of the road. Tropical birds were there, feasting on fish that were stranded in roadside ponds.

During one afternoon's drive, three weeks after Donna, a doe and fawn bolted out in front of our car, to stand paralyzed with fear as the car ground to a stop. Suddenly they vibrated into action, and went splashing through the 'glades. Brown rabbits by the dozens were in evidence everywhere. Raccoons became a frequent sight. Two diamond-backed rattlers, miles apart, were crossing the road. A fox daintily ate a snake which had been smashed by a motorist.

Vultures circled overhead, looking for new carcasses. We stifled an impulse to despise them, realizing that, after all, they were keeping the area clean. Instead of the smell of rotting flesh, there was only sort of an aromatic odor from the thousands of broken branches and trees.

"The crown jewel of the park was Mahogany Hammock," said Park Naturalist Ernst Christensen, "the sight there would have made you sick."

Ancient Mahoganies Ruined

South Florida and the keys were once covered with huge mahogany trees, hundreds of years old. The wood was the finest for cabinetmaking, and during their occupancy of Florida, the Spanish cut down the trees and sent them back to Europe to be used for the making of elegant furniture. They cut selectively, taking only the largest trees and allowing the smaller ones to continue their growth. However the English—and later the Americans—depleted the entire stock of trees.

Mahogany Hammock escaped this fate only because it was in such an inaccessible location. Before Donna, a boardwalk was constructed at the hammock to enable visitors to take a walk through the primeval jungle to see some of the State's last mahogany trees. Plastic markers identified the different species of trees, orchids and air plants. Mosses and ferns could be seen in abundance, as could birds as well as other tropical life of a sort common to the West Indies.

The sight that greeted us now was a naked jungle of rubble. The boardwalk was impassable, with giant trees down on all sides. Leaves were stripped off every branch, and so was the bark. Some of the trees that were still standing looked like poles. Air plants and orchids were gone. It looked as though a giant dragon had blown a hot breath over the entire landscape, shriveling everything.

The whispering sound of leaves swishing against each other was gone, and in its place was an oppressive, smothering silence. The boardwalk seemed to be in pretty good condition, and some of the largest mahoganies were still standing. We wondered what would happen there. Would lush jungle growth ever return?

Viewing the Damage

As we proceeded south the scenery was more shocking. There were no roadside mammals, nor did we see any birds. Flickers and meadowlarks were gone. House sparrows and grackles had disappeared. Mangrove trees were killed standing, whipped to death. There were so many breaks in smaller trees that they had literally been reduced to kindling.

The eye of the hurricane had passed west of Flamingo, the southernmost point of Everglades National Park. The most violent part of the storm, the extremely destructive right bank of Donna's "eye," blew there for ten hours without surcease.

Power boats were picked out of the water and deposited on dry land. Winds tore through the large new tourist center, visited by thousands of people in the last two years, lifting off the roof and destroying huge plate glass windows overlooking Florida Bay. The five motel structures all had adjoining rooms; the partitions were "gone with the wind." Mattresses hung from trees that had no other foliage, pillow cases waved from bushes like the white flags of surrender. The marina was gutted and a mess.

Two trailers blew away and have not yet been found; damage at this locality has been estimated at a million dollars. Men started rebuilding almost as soon as the wind died down, however, and most of the facilities returned to full operation by December 15, 1960.

There was a twelve-foot rise from the low water point in all channels. Hundreds of new islands were built in Florida Bay, while other have disappeared. Channels were changed, and the waters are being recharted.

Yet, despite all the evidence of appalling damage, the Florida Everglades are making a comeback. Green shoots have appeared on the leafless trees, and many of them have obviously survived. It is inevitable that certain changes must be wrought in the 'glades by such natural catastrophes, but it now appears that growth will once again be lush and wildlife abundant in "pa-hay-okee," land of the grassy water.■

Neither human nor wildlife habitat was spared by the winds of Hurricane Donna, which reached a velocity of some 150 miles per hour. The homes below were in the Upper Keys, beyond Marathon.

Official U.S. Navy Photograph by McLeod

Your National Parks Association at Work

NPA Views on Cape Cod

During the closing days of 1960, the Interior and Insular Affairs Committee of the House of Representatives, through its Subcommittee on Public Lands, held public hearings in Eastham, Massachusetts, on the proposed Cape Cod National Seashore Park (see news note, page 16, *National Parks Magazine*, January, 1961).

By invitation of Representative John P. Saylor of Pennsylvania, a member of the subcommittee, the National Parks Association presented its views concerning the possible park in a statement which generally supported the Cape Cod Seashore bill introduced into the House by Representative Hastings Keith during the 86th Congress (H.R.9050) and the companion legislation introduced in the Senate by Senators Kennedy and Saltonstall (S.2636).

In its statement to the subcommittee, the Association stressed the need for protection of representative examples of original American beaches and shorelines while they are still available, and strongly recommended that the proposed Cape Cod National Seashore Park be added to the National Park System.

Pointing out that the scenic, recreational, esthetic, and scientific resources of the outer arm of Cape Cod are both unique and irreplaceable, the Association's statement also noted that the Cape is presently the habitat of a large shore bird, migratory waterfowl, marine life, and game mammal population, the future of which can only be assured by the prevention of excessive road construction and subdivision of Cape lands. The preservation of Cape Cod's flora and fauna is important not only from esthetic and scientific points of view, the statement said, but also from that of the hunter. In this latter respect, the Association noted and accepted the fact that the proposed legislation would place control of hunting and fishing on park lands in the hands of the Secretary of the Interior, and grant him discretion over whether hunting and fishing should, indeed, be permitted at all. In accepting provision for hunting, the Association made a distinction between a national seashore in a long-settled area and any existing or proposed national park of primeval quality, where the ban on hunting should be retained.

The Association took strong exception to one section of the Keith bill, which would permit additional residential development within the boundaries of the proposed park, allowing an acreage measured by ten percent of the privately owned property within the proposed park in each town. [The word "town," in New England, ordinarily implies an entire township—Ed.] The Association stated that such an arrangement would be, in its opinion, administratively unworkable as well as in conflict with the basic purposes for which the park is to be established.

Association Objects to Proposed Findings

The National Parks Association has recently taken written objection to the proposed findings of the special hearing officer, Mr. Dyer J. Taylor, in the matter of the City of San Francisco's right to further development of the waters of Hetch Hetchy Valley, in Yosemite National Park. (See *National Parks Magazine* for November, 1960, for background references to the Hetch Hetchy controversy).

The proposed findings of the hearing officer in the recent proceedings were that the City of San Francisco's delay in developing its hydroelectric power rights was reasonable; the National Parks Association contends that the City slept on its rights over the years, and forfeited them as a consequence. The Sierra Club, West Coast conservation organization, has backed up the NPA, and has taken a somewhat similar position. The NPA noted that no firm assurance has been given that the City of San Francisco would maintain an adequate flow of water in the Tuolumne River.

Rainbow in Danger! *You* Can Help!

Rainbow Bridge National Monument may soon be invaded by the reservoir above Glen Canyon Dam.

Congress has denied appropriations for protective works.

The Secretary of the Interior can save the Bridge by ordering the reservoir to be held down to the monument boundary.

But, whatever the method, he has a duty to prevent the reservoir from invading the monument.

You can help by writing to him and saying so.

See our editorial in the January, 1961, issue.

Address:
The Honorable Stewart L. Udall
Secretary of the Interior
Washington 25, D.C.

Executive Secretary Meets With West Coast Leaders

During December of 1960, NPA's Executive Secretary Anthony Wayne Smith traveled to the Pacific Coast and met with leaders of a number of conservation organizations with a view toward developing better communication and consultation and a more complete agreement on conservation programs.

NPA Testifies at Great Salt Lake Park Hearing

The National Parks Association believes that, while Great Salt Lake in Utah constitutes a remarkable geological and scenic phenomenon, and possesses tremendous potential value as a recreational area, it should not be considered for development as a national park, but should rather be eventually incorporated into the park system as a national recreational area, comparable in status to a national seashore area.

This was the essence of testimony presented by Dr. Clarence Cottam, president of the Association, at a public hearing on the proposed Great Salt Lake National Park in Salt Lake City, Utah, November 10, 1960, in response to an invitation from Senator Frank E. Moss, author of Senate Bill 2894, introduced into the 86th Congress for the purpose of establishing such a park.

Pointing out that the condition of Great Salt Lake—geologically the remnant of ancient Lake Bonneville, which once occupied a large part of western Utah—has, because of poor management, recession of water level, and severe pollution, greatly deteriorated over the years, Dr. Cottam stressed the urgent need for a program that would include the establishment of a coordinated plan of development and utilization of the area in the broadest public interest. The starting point for such a program, testified Dr. Cottam, would be the immediate initiation of pollution abatement on a city and State level.

Dr. Cottam urged the beginning of a preliminary development program for Great Salt Lake on a cooperative basis between city, State, and federal agencies, looking toward the establishment of a national recreational area. However, Dr. Cottam said, "the standards of a national park are much more restrictive than are those of a national recreational area. Certainly, the national park standard should not be lowered to conform to the apparent needs and desires of the proposed development of Great Salt Lake."

In his testimony, Dr. Cottam said he felt that Senator Moss deserved public commendation for his effort to make better use of the remarkable and extensive resources of Great Salt Lake.

Since the Salt Lake hearings were held, Senator Moss has announced plans to ask the new Congress to appropriate money to make a "comprehensive survey" of the Great Salt Lake.

NPA Represented at AAAS Annual Meeting

Representing the National Parks Association at the 127th Annual Meeting of the American Association for the Advancement of Science, held in New York City during the last week in December, 1960, was Paul M. Tilden, editor of *National Parks Magazine*. Mr. Tilden participated in several of the programs of the American Nature Study Society, as AAAS affiliate, and acted as chairman of the panel "Writing, Illustrating, and Publishing for the Nature Audience" in behalf of Richard W. Westwood, president of the American Nature Association, of Washington, D.C., who was unable to be present at the meetings.

DATES AND PLACES

American Camping Association Regional Conventions; Region VII, March 2-4. Asilomar, California; Region II, March 8-11, Sheraton Hotel, Philadelphia; Region IV, March 22-25, Gatlinburg, Tennessee; Region III, April 6-8, Whittier Hotel, Detroit.

26th North American Wildlife and Natural Resources Conference of the Wildlife Management Institute, Statler-Hilton Hotel, March 6-8, Washington, D.C.

Resources for the Future Forums; Preservation of Natural Areas in Great Britain, March 2; Pollution Abatement in the Ruhr Valley of Western Germany, March 16; Brookings Institution, 1775 Massachusetts Avenue N.W., Washington, D.C.

National Wildlife Week, March 19-25

Seventh Biennial Wilderness Conference sponsored by the Sierra Club. April 7 and 8, Sheraton-Palace Hotel, San Francisco, California.

8th National Watershed Congress, April 17-19, Ramada Inn, Tucson, Arizona.

The Parks and Congress

87TH CONGRESS—FIRST SESSION

Unless otherwise indicated, the following bills were referred to the House or Senate Committee on Interior and Insular Affairs. The Committees may report bills favorably or unfavorably to the House or Senate, depending upon the outcome of hearings, investigations and departmental recommendations.

C & O Canal National Historical Park

S.77 (Beall), *H.R.2047* (Mathias). To establish the Chesapeake and Ohio Canal National Historical Park in Maryland. Last year's Senate bill got as far as the House after the House bill had been rejected on the floor. Although a presidential proclamation has established a portion of the canal as a national monument, these bills propose further development toward park status.

Cape Cod National Seashore

H.R.66 (Boland), *H.R.711* (Lane) *H.R.989* (Keith).

To establish Cape Cod National Seashore Park in Massachusetts. Bill provides that 10 percent of land taken in each town for park use would be returned to towns as needed for expansion of community. Department of Interior has recommended that the clause be stricken. December hearings in Eastham, Massachusetts resulted in townspeople requesting that park boundaries as stated in bill be changed by eliminating small amount of land from proposed park instead of waiting to convert 10 percent of park property to town property as needs arise. This could be accomplished in committee before enactment of the legislation.

Great Salt Lake National Park

S.25 (Moss). To establish the Great Salt Lake National Park in Utah. See Shorelines Bill.

Padre Island National Seashore

S.4 (Yarborough). To establish a national seashore on an 88-mile section of Padre Island situated in the coastal waters of Texas. After hearings in August, 1960, the original bill was revised to meet Department of Interior recommendations that 29 miles of the area be excluded from the park for private development and State parks. Oil and natural gas interests and present land owners urged that proposed length of the park be severely reduced.

Point Reyes National Seashore

S.476 (Engle and Kuchel), *H.R. 2775* (Miller), *H.R.3244* (Cohelan). To establish the Point Reyes National Seashore in Marin County, California, some 30 miles north of San Francisco. New bill increases proposed park from 35,000 to 53,000 acres based on National Park Service recommendations. Difference in acreage is represented by inclusion of 20,000-acre ranching area which would be leased back to ranchers in order to prevent development incompatible with park purposes.

Rainbow Bridge National Monument

S.175 (Moss). To amend the Colorado River Storage Project Act with respect to protection of national parks and monuments. Wording of the act now reads: "It is the intention of Congress that no dam or reservoir constructed under the authorization of this Act shall *be within* any national park or monument." Bill would change wording to "It is the intention of Congress that no dam or reservoir constructed under the authorization of this Act shall *impair* any national park or monument." This measure would remove provisions from the act requiring protective works to prevent impairment of Rainbow Bridge National Monument from the waters of Glen Canyon Dam.

In accordance with the provision, the Department of Interior sought appropriations last year in order to construct protective works for the Monument. Appropriations were not granted.

Shorelines Bill

S.543 (Anderson, Gruening, Kefauver, Moss, Randolph, McCarthy, Bible, Hart). To promote preservation of shoreline areas of the United States. Authorizes Secretary of the Interior to investigate following areas: Cumberland Island, Georgia; Channel Islands, California; Huron Mountains, Pictured Rocks, Grand Sable Dunes, Sleeping Bear Dunes, Michigan; Fire Island, New York; Cape Flattery, Leadbetter Point, Washington; Mosquito Lagoon, Florida; Pigeon Point, Minnesota; Debidue Island, Kiawah Island, South Carolina; Popham-Saint John, Maine; Parramoure Island, Virginia; and Smith Island, North Carolina. Senator Moss has introduced an amendment to add the Great Salt Lake to the areas to be studied. Public hearings will be held on March 8 and 9.

Wilderness Bill

S.174 (Anderson, Jackson, Kuchel, Humphrey, Lausche, Neuberger, Randolph, Proxmire, Scott, Williams, Douglas, Byrd, Wiley, Clark); *H.R. 293* (Baldwin), *H.R. 299* (Bennett), *H.R.496* (George Miller), *H.R. 776* (Saylor), *H.R.1925* (Cohelan), *H.R.2008* (Fulton), *H.R.1762* (Dingell). Declares it to be the policy of Congress to secure for the American people the "benefits of an enduring resource of wilderness" to be composed of federally-owned areas. The system would comprise national forest areas, national park system areas, national wildlife refuges and game ranges. Anderson's version based on hearings, criticisms and revisions made since the original Wilderness Bill Senator Humphrey introduced five years ago. A congressional natural resources advisory committee to the President has recommended "passage of legislation which will assure perpetual wilderness values." Secretary of the Interior Udall has also expressed support for a national wilderness system. Hearings on Anderson's bill were held on February 27, 28.

Conservation News Briefs

Virgin Islands Historic Sites Established

In the closing days of his tenure in office, Secretary of the Interior Fred A. Seaton announced the establishment of the St. Thomas National Historic Site in the Virgin Islands. The site, located in Charlotte Amalie on the island of St. Thomas, is believed to have the oldest standing structure in the Virgin Islands. This fortification dates back to the beginning of Danish colonization of St. Thomas in 1671, when it served as the hub of the Danish settlement.

Secretary Seaton, in a second action, changed the name of the Virgin Islands National Historic Site on St. Croix Island to the Christiansted National Historic Site, in order to avoid confusion with Virgin Islands National Park. The Christiansted site, which covers three city blocks on a waterfront, commemorates the colonial development of the Islands.

C & O Canal Monument Created by Proclamation

On January 18—a bare two days before President Dwight D. Eisenhower retired from office—a presidential proclamation established the Chesapeake and Ohio Canal National Monument, on lands deeded to the United States in 1938 by receivers for the historic Chesapeake and Ohio Canal Company.

The new national monument, which comprises the right-of-way of the old C & O Canal together with its locks and buildings, extends from a point near Seneca, Maryland (see map at right) along the Potomac River to Cumberland, in western Maryland, a distance of some 165 miles, and includes approximately 4,800 acres.

Several past Congresses have refused to declare the historic and scenic strip of land a national park, despite the introduction of a number of bills for the purpose. Two such bills introduced into the current session of Congress are S.77, by Senator Beall of Maryland, and H.R. 2047, by Representative Mathias, also of Maryland.

Park Service Director Retained in Post

Late in January, President Kennedy announced that Conrad L. Wirth would be retained as director of the National Park Service, a position he has held since 1951.

A native of Hartford, Connecticut, Mr. Wirth studied landscape architecture at the Massachusetts Agricultural College and, since he joined the Park Service in 1931 as an assistant director in charge of land planning, he has held many high-level administrative positions. He is currently directing the progress of *Mission 66*, a ten-year development and protection program in the national parks.

David R. Simons

It is with the deepest regret that *National Parks Magazine* must announce the death, at Fort Bragg, North Carolina on December 21, 1960, of David R. Simons, widely known conservation worker of Springfield, Oregon.

Mr. Simons, while only 24 years of age at the time of his death, was an able writer and photographer whose particular enthusiasm was the preservation of Washington State's Northern Cascades; he was many times a contributor to the pages of this magazine.

Russell Cave Recommended for Preservation

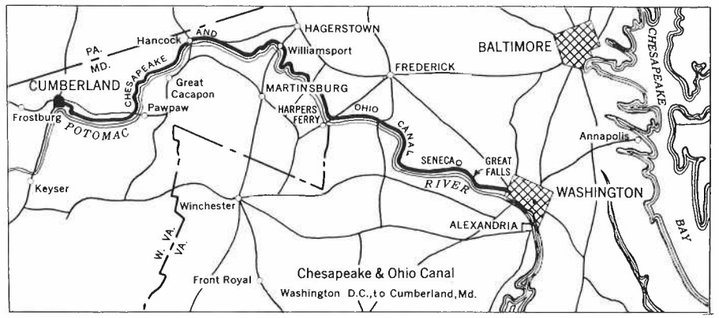
During January, the oldest known home of primitive man in the southeastern United States was recommended to the President for establishment as Russell Cave National Monument, when Melville Bell Grosvenor, president of the National Geographic Society, presented a deed for the 310-acre site of Russell Cave, Alabama, to Secretary of the Interior Fred A. Seaton.

Russell Cave, eight miles from Bridgeport, Alabama, is considered one of the most important archeological sites east of the Mississippi. Three years of excavation, sponsored by the National Geographic Society under the supervision of the Smithsonian Institution, revealed that the area was inhabited over a period of 9000 years, from approximately 7000 B.C. to approximately 1650 A.D. Tools, weapons, broken pottery, remnants of ancient fires, and some skeletons have been uncovered in the excavation.

The cave itself is a section of a three-mile cavern in the side of a wooded gray limestone hill. A surrounding 262-acre farm has been included in this gift to the American people which is being prepared for display to the public by the National Park Service.

Established by proclamation of President Eisenhower January 18, 1961, was the Chesapeake and Ohio Canal National Monument, 165 miles of historic canal right-of-way along the Potomac River.

National Park Service



Parks for America

A new program pledged recently by the officers of the American Institute of Park Executives and officials of the National Conference on State Parks, and the National Park Service, is designed to unite the efforts of park planners in meeting rising recreational needs. The pledge, called PARKS FOR AMERICA, seeks to bring professional park men and park-minded citizens together in acquiring and developing park lands. It will also enable independent park programs of cities, counties, States, and the country to compare notes in order to diminish competition for land and duplication of facilities.

A steering committee of fifteen has been appointed by Arthur C. Elmer, President of the National Conference on State Parks, to implement the program; five members each from the American Institute of Park Executives, the National Conference on State Parks, and the National Park Service will participate. The committee will give primary consideration to the goals of PARKS FOR AMERICA. Among these goals are the preservation and acquisition of seashore recreation lands, and the development of parks in major metropolitan areas where diminishing land availability and increasing population present recreational problems.

PARKS FOR AMERICA is to be a major step toward the balanced use of park lands. It will eliminate the over-use of one park system, like national parks, through the improvement of weaker systems, and it will work for the development of new parks while land is still available.

NOTICE OF PUBLIC HEARING on Selway-Bitterroot Area

During the early part of March, the U. S. Forest Service will hold public hearings in the matter of boundary revision and a reclassification of the Selway-Bitterroot Primitive Area in Montana and Idaho. The Selway-Bitterroot is one of the nation's most extensive wilderness areas, having a total area of nearly two million acres within four national forests in the States of Idaho and Montana.

The Forest Service has proposed to eliminate more than half a million acres from Selway-Bitterroot and reclassify the remainder as a wilderness area. While approving the proposed reclassification, the National Parks Association feels that the elimination of any such substantial acreage from the present primitive area would greatly damage the wilderness character of this superb national forest unit.

The Association urges such of its members as are able to do so to be present at one of the public hearings listed below to present their views on the subject; or they may submit written comments to the Regional Forester, Federal Building, Missoula, Montana, not later than March 27, 1961, with the request that their statements be included in the official hearing record. Mr. Charles L. Tebbe is the regional forester.

The dates and places of the public hearings are as follows: Tuesday, March 7 at 9:00 A.M. Mountain Standard Time, in the Yellowstone Room of University Lodge, Missoula, Montana; Thursday, March 9 at 9:00 A.M. Pacific Standard Time at the Lewis and Clark Hotel in Lewiston, Idaho; and Tuesday, March 14 at 9:00 A.M., Pacific Standard Time, at the Armory, Grangeville, Idaho.

Dr. Cottam Receives Award From Texas Group

Dr. Clarence Cottam, president of the National Parks Association and director of the Welder Wildlife Foundation in Sinton, Texas, was recently named the outstanding South Texan in Wildlife of 1960. The award was made by the South Texas Chamber of Commerce in the city of Houston.

Florida's Giant Cypress

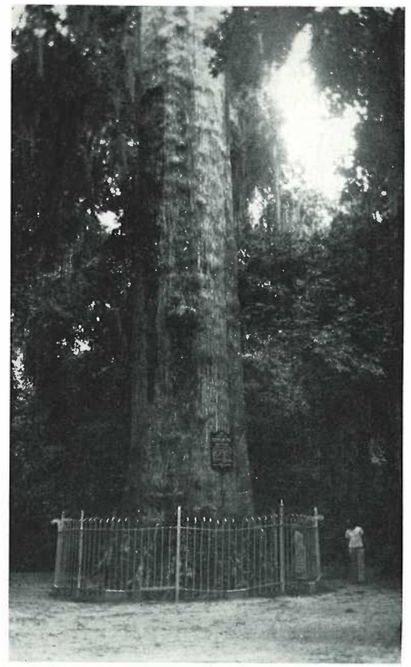
By Elizabeth G. Benton

HARD BY the St. John's River, in Florida's Seminole County, there is a bald cypress—"bearded with moss, and in garments green . . ." —whose age has been estimated at some 3500 years. Towering 177 feet above a seventeen-foot base, Florida's "big tree"—actually a relative of the long-lived sequoias of the Pacific Coast—stands in much the same sort of setting as it did when it began life at the time that Moses was hiding in the bulrushes. All around are the various greens of lush subtropical plant life.

There are only a few modest signs along State Highway 17-92 pointing the way to the little public park that surrounds the giant cypress. Here, there are no gaudily-painted souvenirs for sale, nor is there even an admission gate.

Long a regional landmark, the big tree was originally one of four huge cypresses which more than a hundred years ago sheltered a Seminole Indian camping-ground. Pioneer boatmen on the St. John used the trees as landmarks in guiding their craft; but the other three were later destroyed by wind or fire.

Former Senator M. O. Overstreet, of Orlando, gave the land within the park, and the great tree is appropriately called "The Senator." Its trunk is bare up to ninety feet above the ground, and it measures forty-two feet in circumference, four and a half feet above the ground. The little park in which it stands was dedicated by former President Calvin Coolidge in 1929. ◆



The Editor's

Bookshelf

ULTRAVIOLET GUIDE TO MINERALS: with Mineral Identification Charts. By Sterling Gleason. D. Van Nostrand Co., Inc., 120 Alexander Street, Princeton, New Jersey. 1960. 250 pages in hard cover. Illus. in color and black and white. $6.95.

It was only a few short years ago when all the rock and mineral collectors in the United States could probably have been accommodated in one good-sized traprock quarry. Today, there are countless thousands of such nature enthusiasts ranging from casual pickers of pretty pebbles to men and women whose bible is the latest edition of the *System of Mineralogy*, and whose worlds are populated by refractive indices, crystallographic axes and planes of symmetry.

The time was, too, when amateur rock and mineral collectors needed little more in the pursuit of their hobby than hammer, chisel, gunnysack and hand-lens—plus a stout pair of shoes and a strong pair of legs. Baggage for a day's trip might have included a couple of cans of sardines, a few crackers, a canteen of water, and a roll of bandages against the inevitable misguided hammer-blow.

All that has changed. The modern mineral collector or prospector is likely to set out on an expedition burdened like a porter on safari, with a jeep-load of tools, special collecting bags, and assorted mineral-detecting devices—gadgets like the Geiger-Müller radiation detector (more commonly and simply called the Geiger counter) and the ultra-violet lamp.

The use of this latter instrument—the ultra-violet lamp—as an aid to the recognition of certain minerals has become increasingly important in both commercial and amateur mineralogy. Of the more than two thousand recognized varieties of minerals, a substantial percentage exhibit some degree of fluorescent reaction to bombardment by short wave radiation.

Many of the minerals activated by ultra-violet radiation produce light of characteristic colors and intensities; so that, in a general way, the ultra-violet lamp is useful as a species indicator. A substantial part of Mr. Gleason's book is concerned with a tabulation of minerals commonly fluorescent, with the type of ultra-violet radiation best calculated to excite them, as well as their diagnostic colors. Discussed also is the general nature of fluorescence, the techniques of its field use, and some historical information concerning the use of ultra-violet light in collecting and prospecting.

The book is illustrated with some of the best color plates of fluorescing minerals that the reviewer has yet seen, the work of Mr. David Grigsby, of Ultra-violet Products, Inc.—*P.M.T.*

JOURNEY INTO SUMMER: by Edwin Way Teale. Dodd, Mead & Co., New York, 1960. 366 pages in hard cover. Illustrated with 53 photographs by the author, and end-maps. $5.95.

Wherever one may travel with Edwin Way Teale, there is bound to be rare adventure, as his books *North With the Spring* and *Autumn Across America* have so amply proved. Now comes *Journey Into Summer*, in which the reader joins Teale in an adventurous 17,000 miles through summer in North America.

When the Teales—Ed and Nellie—completed their fascinating experience of travelling north with the spring, their journey ended at sunset by a bridge just north of Franconia Notch in New Hampshire's White Mountains. Leaning against the rail of this same bridge, they start their adventure into summer at sunrise.

Stopping to analyze why traveling with Teale is such a pleasurable experience, you first realize that much is due to the vitality of his prose; the "togetherness" that you feel with the author as you read what he has written. This happy situation is combined with a positive genius for seeking out the unusual. Niagara Falls, for instance, is one of the most visited spots in America, but you have never visited it as Ed Teale visits it, watching the common terns filching small fishes from the torrent, or the mallard ducks nonchalantly riding the river.

Who, on a journey into summer, would think of visiting Mayfly Island in Lake Erie; exploring the then and now of Kankakee Swamp, witnessing there a "river" of fireflies. Traveling with Teale is one after another such side-trips as he pokes about in the lower and upper peninsulas of Michigan; wanders across northern Minnesota and North Dakota; drops down to Colorado to give that beautiful and varied State a most rewarding visit.

As accomplished a photographer as he is a writer and naturalist, Edwin Teale supplies fifty-three photographs to illumine this journey into summer, a trip to be remembered.—*Richard W. Westwood.*

Letters to the Editor

Concerning Vogt's *People!*

I read with much interest the review of William Vogt's *People: Challenge to Survival* in the January issue of your magazine. I have also read the book and urge everyone with the slightest concern for the future of his country and world to do the same.

The time is long overdue for conservationists to recognize the hard and disagreeable fact that conservation, without an accompanying program of population stabilization, will, in the long run, prove futile. A continuation of the current irresponsible rate of population growth in the United States can mean only that the resources which our conservationists have worked to save will ultimately be overwhelmed and destroyed by the growing human tide, and that this will occur not in the remote and distant future, but during the lifetimes of most of us.

Without further delay, every dedicated conservationist must begin practicing and advocating a voluntary program of drastic limitation of the size of the American family. Those who tend to persist in a large family pattern must be made to realize that they are personally participating in the progressive destruction of our nation's natural richness as we now know it. Thus, and thus only, can we be assured of keeping those priceless and irreplaceable things that our conservationists have labored so long and hard to save.

L. J. HAMMACK JR.
Lawrenceville, Virginia

Park Pressures Grow

I always read your *National Parks Magazine* and therefore I know your sorrows which are similar to ours. It is necessary to enlarge the national parks system wherever and whenever it is possible. People increase, the visitors are always more, but protected areas don't increase in the same manner, and pressures grow. I saw some of your problems during my visit to your country in 1953, when I took this picture in Yosemite National Park.

DR. O. KRAUS, *Director*
Bavarian Office for Nature Protection
Munich, Germany

● We are sure that our readers will enjoy the artistic photograph appearing at the right, and we thank Dr. Kraus both for the picture and the permission to reproduce it on this page.—*Editor*

A Vital Publication

I am a new subscriber and have just received my first copy of *National Parks Magazine*. Your magazine is a more vital publication than I had foreseen that it would be. I have read and re-read *Walden*, so you can imagine how thrilled I was over "The Battle of Walden Pond." [Dec. 1960 and Jan. 1961].

ELIZABETH GEARY
Harpers Ferry, West Virginia

Agrees with Heald

Weldon F. Heald's article "Urbanization of Our National Parks" in the January magazine deserves the quick and thorough endorsement of all persons interested in preserving the full flavor of the parks.

During the past summer, I had the opportunity to observe some of the varied developments which Mr. Heald has described and I agree with him completely. It appeared to me that *Mission 66* tended to defeat the purpose of national parks rather than strengthen it. The people whose main desire in a vacation is hot showers and super-highways should stay home and go for Sunday afternoon drives.

The national parks should retain the color and atmosphere, the preservation of which was their original purpose.

EDGAR P. WYMAN
Storrs, Connecticut

Praises Author's Work

Recently catching up on my *National Parks Magazines*, I was especially impressed by the "Trumpeter Swan" article by Charlotte B. Norris in the October, 1960, number. Give us more of her writing. She gave a scholarly presentation of the subject, but it was also well-written and interesting.

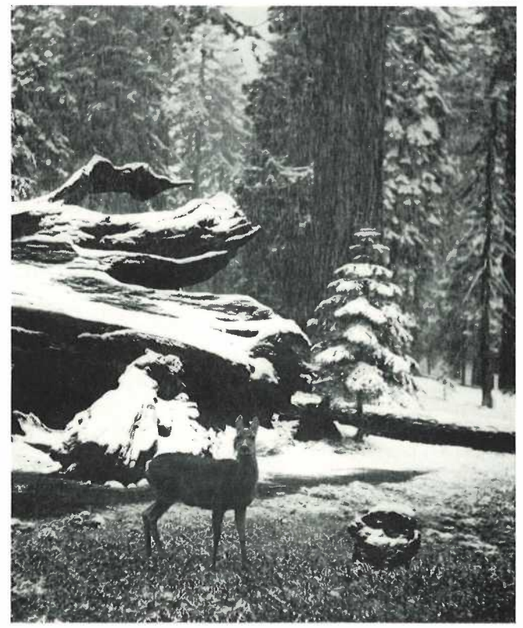
ESTELLE C. WATSON
Evanston, Illinois

● We are sorry to report that Mrs. Norris passed away in December, 1960. We will miss her lively letters and articles, one of which remains in our files for use at some future date. See the May, 1960, *National Parks Magazine* for her first article on Joshua Tree National Monument.—*Editor*

On the Back Cover:

Mount Baronett, Yellowstone National Park
A Photograph by Franz Lipp

O. Kraus



Deer, snow and forest... a pattern of wilderness harmony, Yosemite National Park, 1953.