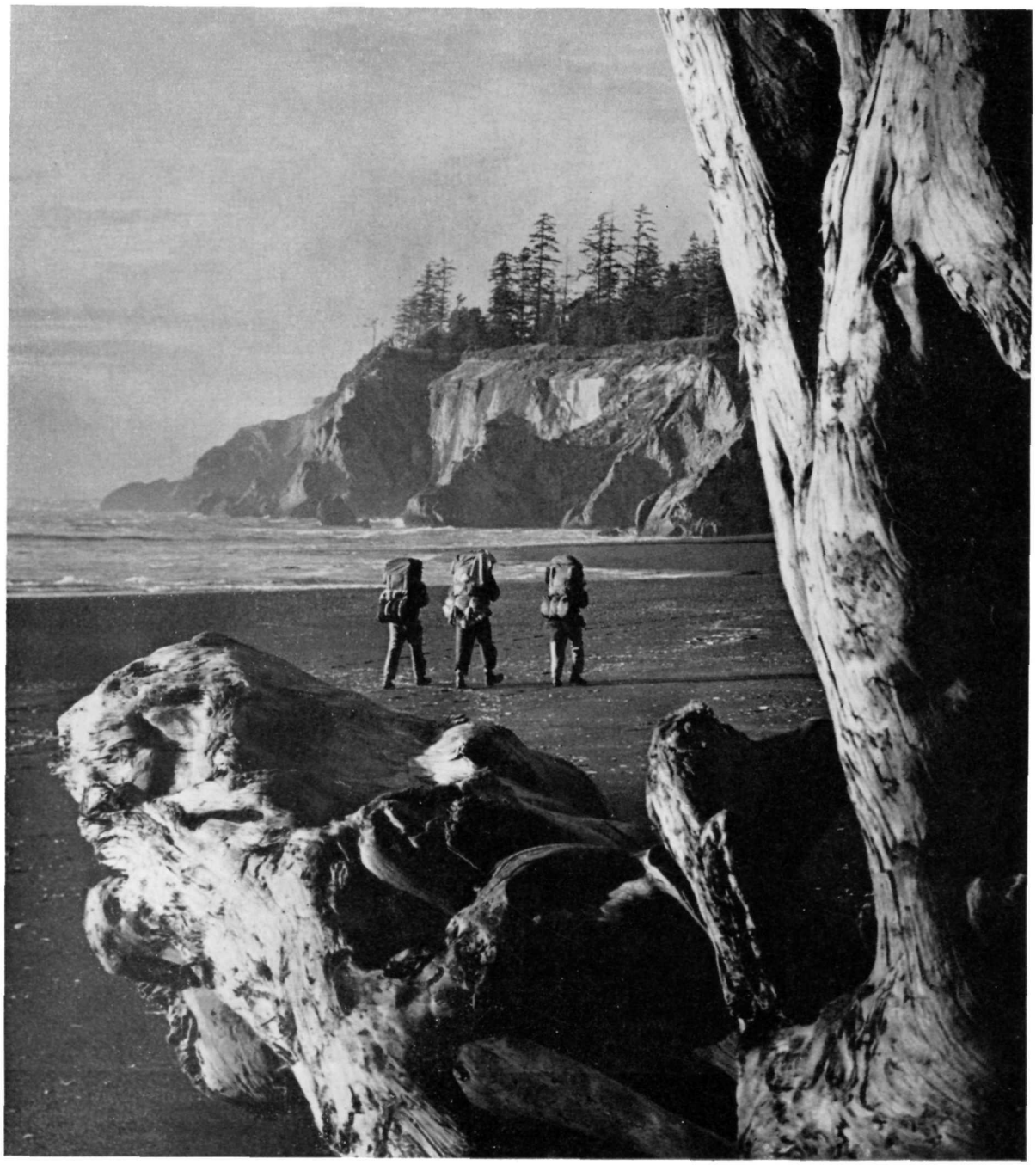
NATIONAL PARKS *Magazine*



Hikers on a wilderness beach:
Pacific Coast section, Olympic National Park

May 1965

The Editorial Page

Roads in Human Refuges

DURING THE PAST YEAR American automobile manufacturers produced nearly 7.5 million automobiles. With the addition of nearly half a million imported cars, total registration of new pleasure vehicles in 1964 was over 8 million—a record. Domestic car production figures for 1965, projected through the balance of the year with imports added, point to a new-car registration of more than 9 million—another record. And although several millions of worn-out or wrecked vehicles go to the junkyards every year, the annual net gain in automobiles on city streets and country highways is large indeed.

It is the cities and the suburbs that suffer most from supersaturation by the motorcar. It has been suggested, rather unscientifically, perhaps, that the population of an American city can now be roughly estimated by the density of its gasoline-haze. And under the envelope of fumes the traffic and its endless uproar reigns supreme.

So it seems reasonable to think that the people of the cities and suburbs, who now number about seventy percent of the national population, have a peculiar interest in the system of seashores and lakeshores that Americans are presently engaged in putting together, and in the way such park system units are to be developed and managed. No one pretends, of course, that national seashores or lakeshores must, or indeed any longer could, reflect America in its primeval condition. Rather, such units are thought of more as refuges for human beings carved from combinations of land and water that have largely escaped the hand of the subdivider and the highway engineer—places that still offer a chance for the enjoyment of beauty, and for quiet relaxation; human refuges from the traffic.

There seems to be a comfortable assumption on the part of some planners that car-loving Americans must surely want these refuges opened up with highways and parking lots as they are acquired. We do not think this is a valid assumption, and we think the history of those refuges that have so far been acquired supports us in the conclusion. The terms under which the people have added at least two national seashores to the park system in the recent past—Padre Island and Fire Island—seem to make the case clear enough. We think that what Americans have been trying to say is, that there seems little point in transferring city traffic to the shore, and that the esthetic qualities of a black-topped parking lot are no higher at the edge of the sea than elsewhere. —*P.M.T.*

Roads in Animal Refuges

FURTHER ON THE SUBJECT of road construction, it is understood that the projected path of Interstate Highway 65 will take it through the heartlands of the 35,000-acre Wheeler National Wildlife Refuge in north-central Alabama, established in 1938 to help maintain ample populations of ducks and geese in the Mississippi flyway. Bare statistics show that the Bureau of Sport Fisheries and Wildlife, which has immediate jurisdiction over the units of our national wildlife refuge system, has done a splendid job in the development of the refuge. In 1939, a year after the area was established, 1500 ducks were present; some twenty years later peak counts have shown 90,000 ducks and nearly 50,000 geese making use of the refuge.

Wheeler is a key unit in the refuge system of the southeast, and the slashing apart of its two principal waterfowl concentration areas would, in the words of a Sport Fisheries and Wildlife spokesman, do irreparable damage. The Bureau has indicated that there are no other comparable refuge sites in the region available to compensate for the loss of Wheeler, and it has proposed an alternative route that would also be within the refuge but would not impair its basic values. The alternative would entail an additional 2½ miles of highway construction at a cost of $2½ millions.

The Bureau of Public Roads, which must approve State plans for Federally-assisted highways, and which must acquire rights-of-way over lands of other Federal agencies, has apparently taken the position that the best route for Interstate 65 through the refuge is that which is shortest and least expensive from the engineering point of view. We think there are other considerations, also. There are no exact figures on the total amount of public money invested in Wheeler Refuge since its establishment, although Sport Fisheries and Wildlife feels certain that the figure would exceed the cost of the alternative, without taking into consideration other values that cannot be measured in money. We had thought that a start has been made away from roadbuilding philosophy of the kind represented here; a start further encouraged, perhaps, by the President's recently expressed hope that the location and design of highways ought to reflect increased respect for the natural and social integrity and unity of the landscape.

Secretary of the Interior Stewart L. Udall has given his approval to the Bureau of Sport Fisheries and Wildlife plan for an alternative routing of Interstate 65 through the Federal refuge, and has indicated that he will not grant the BPR permission to acquire a right-of-way for the original destructive route. Surely the Secretary deserves the support of all American conservationists in this position. —*P.M.T.*

Readers of this Magazine who may wish to lend the Interior Secretary their written support and encouragement in his defense of the Wheeler National Wildlife Refuge may write: Honorable Stewart L. Udall, Interior Department Building, Washington, D.C. 20240.

NATIONAL PARKS *Magazine*

OFFICIAL PUBLICATION OF THE NATIONAL PARKS ASSOCIATION

VOLUME 39 MAY 1965 NUMBER 212

Front cover photograph by Ruth Kirk

The upturned roots of a driftwood log frame three sturdy hikers on a wilderness beach in the Pacific Coast section of Washington State's Olympic National Park.

The Association and the Magazine

The National Parks Association is a completely independent, private, non-profit, public-service organization, educational and scientific in character, with over 28,000 members throughout the United States and abroad. It was established in 1919 by Stephen T. Mather, the first Director of the National Park Service. It publishes the monthly *National Parks Magazine*, received by all members.

The responsibilities of the Association relate primarily to the protection of the great national parks and monuments of America, in which it endeavors to cooperate with the Service, while functioning also as a constructive critic; and secondarily to the protection and restoration of the natural environment generally.

Dues are $6.50 annual, $10.50 supporting, $20 sustaining, $35 contributing, $200 life with no further dues, and $1000 patron with no further dues. Contributions and bequests are also needed. Dues in excess of $6.50 and contributions are deductible for Federal taxable income, and gifts and bequests are deductible for Federal gift and estate tax purposes. As an organization receiving such gifts, the Association is precluded by law and regulations from advocating or opposing legislation to any substantial extent; insofar as our authors may touch on legislation, they write as individuals.

Membership in the Association carries with it subscription to *National Parks Magazine*. School and library subscriptions are $5 a year; individual copies 50 cents. Letters and contributed manuscripts and photographs should be addressed to the Editor at Association headquarters. The Association is not responsible for loss or injury to manuscripts and photographs in transit. Return postage should accompany contributions.

Title Registered U.S. Patent Office. Indexed in the *Reader's Guide to Periodical Literature*. Printed in the U.S.A. Second-class postage paid at Washington, D. C.

NATIONAL PARKS ASSOCIATION, 1300 NEW HAMPSHIRE AVENUE, N. W., WASHINGTON, D. C. 20036

A marmot peeks from the safety of his burrow high on Hurricane Hill in the meadow country of the Olympics.

OLYMPIC REVERIE

By Ruth Kirk

With photographs by the author
unless otherwise credited

MAYBE MARMOTS ARE MY FAVORites. We have just come from Hurricane Hill and, for the moment, I can think of no scenery in all the Olympics that surpasses the high meadows, nor of any wild creature more satisfying than the marmot.

Marmots *do* things. Today one reached with a single forepaw and bent yellow arnica to its mouth; another sat like a squirrel and used both forepaws on bistort. A huge male rustled past us with a load of "hay" in his mouth and plopped down the nearest burrow to arrange a fresh bed.

A hawk's shadow glided over, a shifting silhouette screening the sun from the meadow, and warning of death. Some marmots sat up and shrieked the high-pitched call that belongs to the high country, along with the rushing of snow meltwater and the *enk-enk-enking* of nuthatches hidden among the firs. Some raced from home burrows, fluffs of honey-brown bounding through the meadow's wild garden. One—a foolish baby—sat and looked frightened. The hawk made a pass, and missed. It looped back and tried again. It alighted and jabbed with its beak. The marmot cowered and shrieked and stayed on the packed-earth burrow mound instead of diving to safety, but the hawk could neither lift this prey on the wing nor kill it on the ground.

Finally the bird gave up, flapped aloft, caught a downdraft, and disappeared against the blue haze of the inner Olympic Mountains.

In a park as varied as this it is impossible to say which beauty is the most nearly perfect. You must choose between horn peaks stabbing above glaciers, and ridges that each summer burst into patchwork gardens of purple and red and yellow and white; between the hush and luminous green of the rain forest, and the endless toss

of waves washing the headlands and beaches of the wilderness coast. In Olympic National Park there are more glaciers than in Glacier National Park; more peaks than in Rocky Mountain; seven tree species of world-record size compared to Sequoia's one; and even bears that are better behaved than Yellowstone's, because they still are wild.

Clearly, a choice among such superlatives is impossible. Yet today I favor the meadows and the marmots. The two are inseparable, in my mind.

Our first hike each summer never fails to disclose where a marmot has tunneled through two feet or so of snow to break hibernation and hurry into purposeful living. Their rush speaks somehow of the urgency that reigns throughout the high country, where all living things must catch the blessing of the moment or forever lose the chance.

Spring-beauty stalks show their red first-growth beneath icy crusts, and avalanche lilies push tightly furled spikes through snow to intermingle white petals with the uphill retreat of the snowdrifts. Dappled fawns make pogo-sticks of their spindly little legs, and leap at the sides of their mothers within a day or two after birth. Bear sows and cubs rip mouthfuls of grass from greening slopes with the same gusto they later will devote to ripening huckleberries and salmon fighting upstream to spawn.

The Short Alpine Summer

The high meadows make stringent demands on all forms of life. Twelve weeks separate avalanche lilies from fringed gentian, first flowers from last. Hudsonian-zone plants are not annuals; the growing season is too short to mature from seed each year. Two species of willow—*Salix arctica* and *S. nivalis*—are mature when two inches high. Wind so distorts and gnarls Douglas fir and mountain hemlock that they are termed *Krummholz*, German for "crooked wood." Trees six feet high and just over an inch in diameter may be fifty years old, and their growth rings so close-set that you cannot count them without a hand-lens.

The beauty of alpine summer does not wait. Like the marmots, you must venture forth to meet it, or do without it until next year. It means the time is short for us to pitch a tent on High Divide, or to cast in Moose Lake for rainbow or brook trout. But the end of summer, and the autumnal crimson and yellow that ring down its curtain, does not mean the end of back-country hiking.

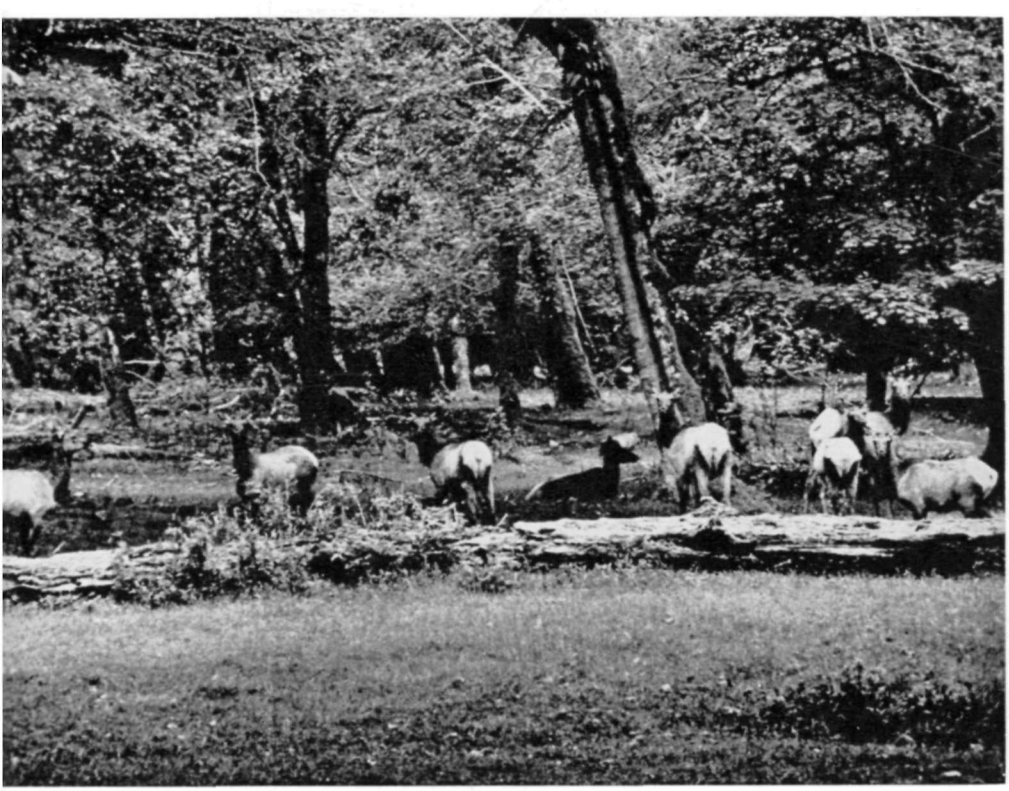
By November the leaves drop from the maple and alder of the river-bottoms and the time comes to look for

Mount Olympus, in Olympic National Park: a view from the southwest.

National Park Service

Deer browse the meadow at Hurricane Ridge in Olympic Park.

"I banged out the door not thinking about elk—and there they were!" The photograph below was taken by the author with water-bucket in hand.



elk. To be sure, they are also one of the glories of the summer high meadows. I have mental images—if none on film—of elk bands resting on a snowfield to chew cuds free from the torment of flies, or trailing across a heather slope at sunset to drink the sapphire water of a tarn.

Yet for all the elks' majesty in the mountains, it is in the upholstered tangle of the rain forest that I most enjoy them. Not that I have any greater luck with the camera! Elk are wary. You hear them snapping twigs and snorting warnings as you approach. You see them crash across the trail ahead in a blur of black manes, brown flanks, and white rumps. But you do not photograph them. At least, I do not.

Once I stayed a week in a cabin ten miles up the Hoh Valley, supposedly helping a professional photographer get elk pictures. But the elk were nowhere about. Later I went to spend a week alone, writing, and when I banged out the door with the water bucket the first morning, heading for the creek and not thinking about elk, there they were!

Our first winter in the park I hiked with my husband, Louie, and Glenn Gallison, the chief park naturalist, to check elk "exclosures" (plots in the rain forest valleys fenced to keep elk *out*, to permit study of the proliferation of forest plants not subjected to browsing). Up the Bogachiel an antlered bull and ten or twelve cows and yearlings thundered across the trail while we grabbed for cameras. The elk had neither seen nor heard us coming even though we were talking loudly. The elk stood or lay at ease among the sword fern, oblivious to our voices. But when we stopped and reached for cameras, they "spooked" and ran.

The next "exclosure" was up the Queets. "Failure of the brain" we call it now, for somehow our cameras were in the packs when we came on a herd of seventy elk, close and well-lighted on a gravel bar in mid-river. "There will never be such a chance again," Glenn moaned as the elk stampeded off, unphotographed. He was right. There has not been.

But if elk are frustrating, the forest holds other joys. My diary records:

"January 5. These are the sounds of the winter forest: chickadees lisping among the alder buds overhead, and a

male sooty grouse drumming his wings on a log; a sudden splash as the man next ahead on the trail misjudges his leap and falls in where the footbridge is gone; the crackle of dry wood in the stove; the hiss of the lantern; the scratch of pencils as we sit after supper noting the impressions of the day.

"Rain beat at the windows while I cooked, but just now when I stepped to the porch to brush my teeth I found a half-moon softened by a ring of luminous mist and a cold, brilliant Jupiter riding below the black silhouette of the spruce. A bear had been rummaging the garbage pit as we arrived at the cabin—as well as a doe by the door and six robins, which flushed. We turn into our sleeping bags joking about who is to fend off the bear with the Pulaski, who with the shovel, and who with the broom."

Winter, to me, is the time for the Olympic forest, and summer for the high meadows. But in spring perhaps it is the beach.

Early in March the stems of salmonberry gleam satiny yellow-brown, and green leaf-buds faintly flaunt the ticking of their inner clocks. You feel they would burst as you watched if only you could sit nearby for a day. Spring's return brings a resurgence of life along the fifty-mile ocean strip of the park. Whales migrate northward so close inshore that their fins and flukes flash wet and dark between spurts of sprays that look like silent, white fireworks. Scoters and loons paddle beyond the breakline of the surf; black oystercatchers screech from low rocks, gulls stand knee-deep, feeding where creek water merges with salt.

In the sand, coyote tracks lead from the drift logs on the upper beach straight to the spume-line of the waves —and at the end of such a track we once found the remains of a muskmelon-size octopus. Bear, elk, and deer tracks are imprinted in the sand, too; and small pits mark where skunks and raccoons have dug beach-hoppers—small feed for animals their size.

Treasures of the Tidepools

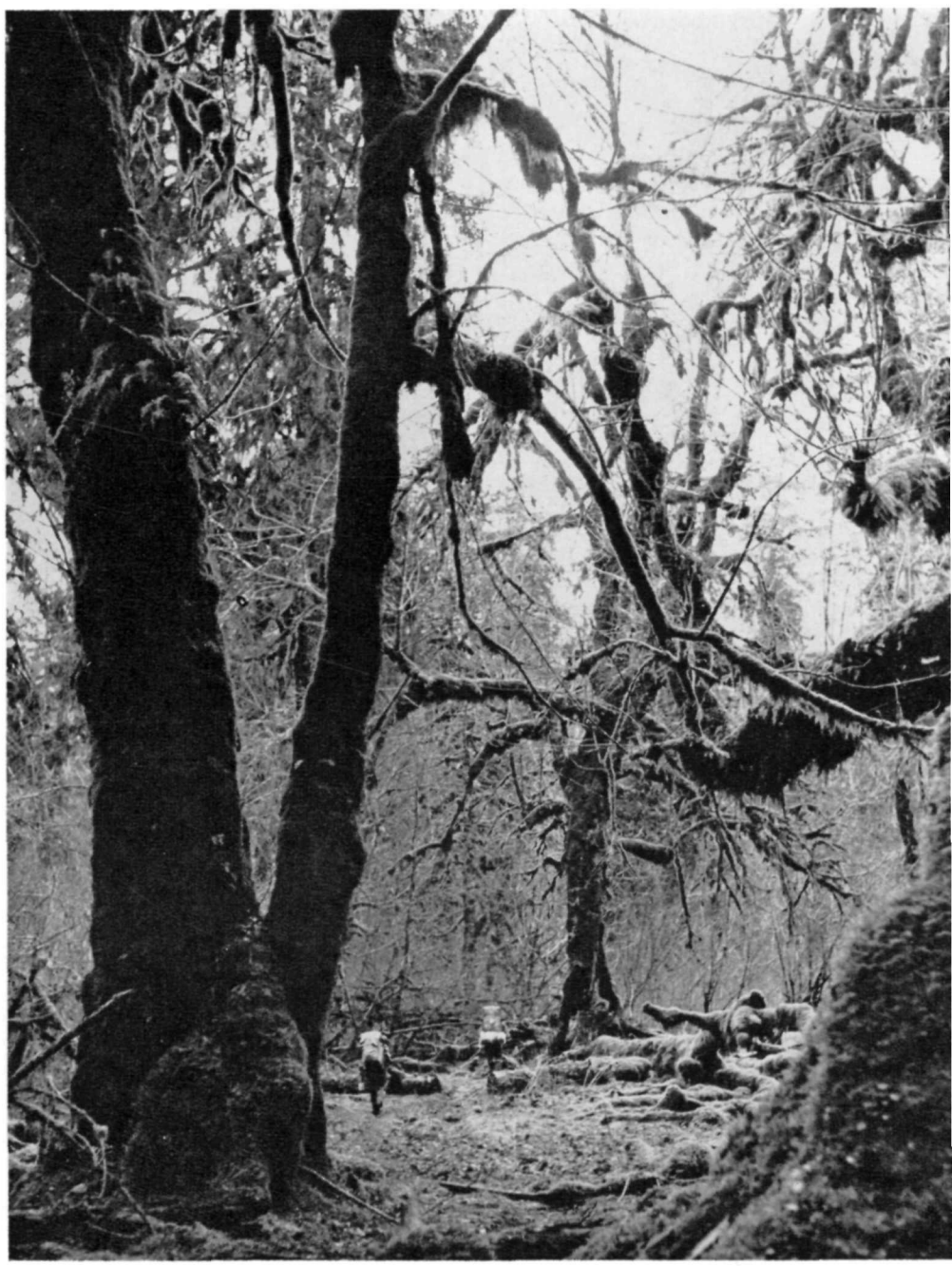
Tidepools are crusted with starfish, anemones, hermit crabs, limpets, periwinkles, barnacles, mussels: creatures side by side and piled one on top another, all competing, cooperating, living, dying. The shore population crowds all available space, for compared to the alpine peaks and ridges or the valley forests, the shore is benign.

Tides alternately bare and submerge the rocks; storms toss the seas. But the temperature fluctuates little, and ocean water is a soup of nutrients, and rich in oxygen as well. Life demands little of shore creatures, except escape from enemies—a far cry from the rigors of the alpine ridges or of the forest.

The springtime Olympic coast is wild, and its forest fringe is lush with life. To hike it is to remember forever the ballet of sandpipers at ebb tide, the stare of a seal riding a swell and watching you walk, the pink benediction of sunset when the time comes to turn inland, back to the waiting car.

But today there are the meadows and the marmots. They are my favorites—for the moment. ■

The winter tangle of the Olympic rain forest. Club-mosses and lichens "upholster" bigleaf maples; sphagnum and other true mosses cover fallen logs.



Recollections of a trip with Mr. John D. Rockefeller, Jr., at the time of his contribution of $2,000,000 toward the preservation of the Bull Creek and Dyerville Flats, and other lands in California's Humboldt Redwoods State Park, July, 1926.

By Newton B. Drury

MR. ROCKEFELLER, MRS. ROCKEfeller, and their sons Laurance, Winthrop, and David, made a trip into the redwood country in a special car which was sidetracked at South Fork Station near Dyerville.

We had prevailed upon some of the leading businessmen of Eureka to lend their automobiles to the cavalcade. We also had hired an open touring car of rather ancient vintage, feeling that at times some of the party would like to ride in this car in order to get a better view of the redwood forest. It turned out that the Rockefeller family, for almost the entire trip from Dyerville to Grants Pass, preferred to ride in the open car so that a Pierce-Arrow and another large limousine carried the baggage.

On this trip, Mr. Rockefeller showed remarkable interest in all that was going on in the redwood region, and his courtesy was never-failing. I remember that at the end of the trip he took me aside and suggested that in addition to meeting all of the expenses, he felt that he ought to make a present of $50 to each of the individuals who had lent their cars to the expedition. I was per-

The photograph at left was taken by Laurance S. Rockefeller, then 16 years of age, on July 6, 1926, in the Bull Creek Flat redwoods of Humboldt County, California, now known as the Rockefeller Forest. On the right side of the table, the first four persons are: David Rockefeller, Winthrop Rockefeller, John D. Rockefeller, Jr., and Newton B. Drury. Seated at the left of the table the first four persons are, from left to right: Andre Trocme, tutor; Florence M. Scales, nurse; Dr. William S. (or F.) Tillott (or Tillett), physician; and Mrs. John D. Rockefeller, Jr. At the far end of the table, seated and standing, are drivers of the party's cars and staff personnel from the Eureka Inn.

haps a little emphatic in stating that I did not feel this was necessary, so that Mr. Rockefeller very courteously enumerated to me the various reasons why he felt this would be the proper course for him to pursue, including the fact that these men had been taken from their business, that their normal routine had been disrupted, and that he felt he owed them a very definite debt. He ended by saying, "So, you see, it isn't just that I *can afford it.*" When he learned that a group of men working on the highway were convicts, as he passed them he took the pains to give them a wave of greeting.

When we got to Grants Pass, Mr. Rockefeller desired to telephone ahead to Western Union and send a congratulatory telegram to his father who was the next day celebrating his birthday. There appeared to be some mix-up, and Mr. Rockefeller seemed to have had difficulty in identifying himself over the country telephone system for credit purposes. The call was put in some distance short of Grants Pass, I believe at Crescent City. Mr. Rockefeller promised to come in and pay for the telegram when he arrived at the latter place. In identifying himself he said, "This is Mr. Rockefeller." Whereupon the country operator replied, "Yes, this is Mr. Carnegie." The misunderstanding was straightened out, and when we got to Grants Pass, Mr. Rockefeller insisted on going to the telegraph office and meeting and shaking hands with the operator with whom he had had the difficulty.

To Each a Task

Mr. Rockefeller obviously took pains in the training and education of his boys. He assigned to each of them the responsibility for some specific task each day. Laurance checked all the hotel bills and the meal checks very carefully before paying them. David was responsible for the luggage, wraps, etc. Mr. Rockefeller's accuracy in fiscal matters and his knowledge of practical affairs was shown when we had a rather sumptuous luncheon served by the Eureka Inn in Bull Creek Flat, now happily named the Rockefeller Forest. A chef and a waitress came down with the luncheon about forty-five miles from Eureka to Dyerville. In checking over the bill it seemed to me that it was a little large, and since Mr. Rockefeller had insisted on meeting it, I took the liberty of eliminating therefrom the cost of the truck that brought the luncheon, feeling that this could well be met by the Save-the-Redwoods League. In going over the accounts that night, Mr. Rockeller remarked upon what a splendid luncheon it was and how reasonable in price. "Why, that truck to and from Eureka itself must have cost at least fifteen dollars," he said. As it happened, that was exactly what it did cost.

When we came to the majestic forest of Bull Creek Flat, Mr. Rockefeller asked to be left alone for a considerable period while he sat there contemplating the forest. ■

The photograph below was taken at the edge of the incomparable redwood grove of Bull Creek Flat in Humboldt County—the greatest of the great coastal redwoods, Sequoia sempervirens. *On a large boulder in the Bull Creek Flat grove there is a bronze tablet inscribed with these words: "The preservation of this forest was made possible by a gift from John D. Rockefeller, Jr. / May those who come here find inspiration and peace in the enduring splendor of these magnificent trees."*

Photograph courtesy the Sierra Club: Philip Hyde

A little-known geological oddity of northern Arizona is the

Grand Falls of the Little Colorado

By Ivan Dryer

THE LITTLE COLORADO RIVER FLOWS in a northwesterly direction from the White Mountains in eastern Arizona to its confluence with the Colorado River in the Grand Canyon. It is primarily a runoff drainage system, fed by ephemeral streams and washes that billow with earth-laden currents only after rains and during spring thaws. For three months of the year it is dry, carrying only the currents of the wind. But after the storms and melting of winter snows, the desert sheds its clay and sand into the muddy torrents of the Little Colorado, which takes them to the Colorado River.

On its way, the Little Colorado makes many turns and takes a fall or two. Thirty-five miles northeast of Flagstaff, Arizona, it strikes a tongue of basalt rock and meanders in a sudden semicircle around the brink of a series of vertical cliffs, then plunges abruptly to the riverbed below. The wonder of the sight, sound and spray of this furious cataract is known by few, and witnessed by still fewer. It is called Grand Falls, the "Chocolate Niagara" of the American Southwest. Eighteen feet higher than its Eastern counterpart and nearly two-thirds as wide, Grand Falls is truly one of nature's major works in this or any region; and the history of its origin is rather remarkable as the making of great waterfalls goes.

Some six thousand years ago, even as now, both the Little Colorado and Colorado Rivers were quietly cutting

Below, the Grand Falls of the Little Colorado River, some miles northeast of Flagstaff, Arizona. The falls was created when a tongue of basaltic lava from Merriam Crater poured into the ancient channel of the Little Colorado and forced the river to bypass the lava-plug. The flat-lying sedimentary rock strata over which the falls plunges is the colorful Moencopi sandstone; a remant of the basaltic flow from the crater is visible in upper right-hand portion of the photograph.

Photograph by the author

great gorges in the Colorado Plateau of northern Arizona. The San Francisco Peaks, rumblings and eruptions of which had shaken the plateau intermittently for two hundred thousand years in the more distant past, were silent. But just to the east of the peaks, the earth's surface was bursting with the activity of a period of vulcanism that produced many smaller cones, the last and most notable of which was Sunset Crater, now preserved in our park system as a national monument.

Geology of the Falls

The building of another cinder cone, Merriam Crater, would not have been an unusual event for that era, except that its cone was fairly large, and a lava-flow issuing from it took a curious course down a side-wash that steered it into the bed of the Little Colorado River. It is probable that the river was running when the flow hit it: tons of molten lava surged into the river and smothered it; and tons of silted steam must have shot up from the muddy water.

The lava flowed up the riverbed a short distance, and downstream for at least twenty miles. The river probably did not flow again in this part of its channel until the lava had cooled, but rather boiled away as steam. Dammed by the cooled basaltic lava the river later formed a small, narrow lake. Then it deposited silt on the basalt beneath and raised its level; and finally it found an opening between the huge basaltic slab lying in its channel and the canyon wall it had long ago cut. At first a rivulet seeped around the basalt floor to the side of the old canyon, then dropped into its former trough, now almost filled with basalt. Eventually the lake drained as cutting continued, and the entire river poured through the widening way around the basalt dam, over the canyon wall, and thence on to the Grand Canyon again.

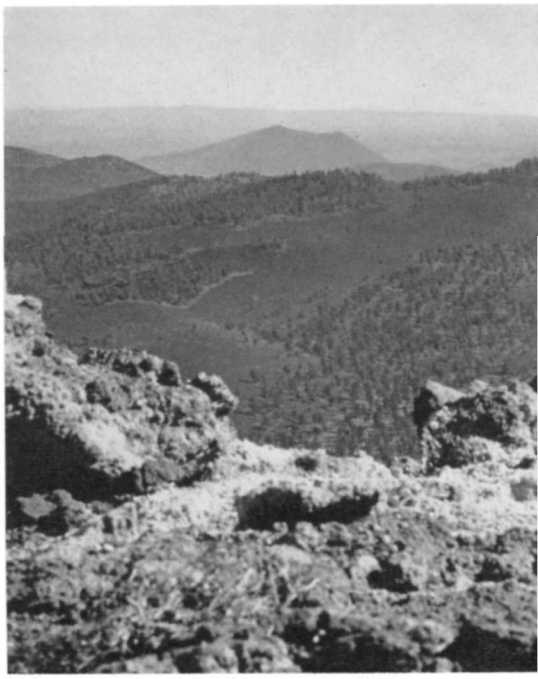
After ages of pounding of the basalt below the dam, the river has increased its drop to 185 feet and has cut a secondary course, leaving a shelf of basalt on one side of the falls and cutting a deeper canyon than before on the downstream side. The river has also widened its bed above the drop-off, so that today's visitor to Grand Falls (when the river is running full) is rewarded by the sight of a brown curtain of liquid earth nearly two hundred feet high and almost six hundred feet wide, cascading from red cliffs and sending up thick clouds of yellow spray—a foaming torrent that is, in the language of the Southwest, "too thick to drink, and too thin to plow."

The best time to visit the falls is, of course, after a storm when the river is in full volume. The Little Colorado is usually dry only during the months of May, June and July. You may want to determine the flow of the river before making your visit. This can be done by checking with the Flagstaff Chamber of Commerce; or better, by telephoning the Leupp Navajo Indian Boarding School (682-2111, area code 602); Principal Roy D. Scheindst, or a staff member, will be able to advise if the river and falls are flowing.

A few hundred feet downstream from the falls is a cross-canyon cable tram maintained by the United States Geological Survey. Survey measurements indicate the average volume of the river to be 116 cubic feet per second; most visitors would not want to risk being swallowed by such a churning current. But for the more courageous, a rather steep path descends from near the cable tram along the basalt shelf to the river, where one may obtain a different view and perhaps also be drenched by the muddy spray. Protection for you and your camera equipment is recommended if forays to points near the base or directly above the head of the falls are contemplated. In spite of the spray, a visit to Grand Falls is worth the trip; and even when the water is relatively low, the falls make a grand spectacle, with ribbons of water streaming over the face of the massive, sheer wall of red sandstone.

Few Visit Grand Falls

Although annual visitation is difficult to estimate exactly, the visitors to Grand Falls each year number only in the low hundreds, if that many. According to the Flagstaff Chamber of Commerce, most of these are local residents (with many repeats) and students from Arizona State College at Flagstaff. Probably not more than a few thousand white persons and even fewer Indians have seen the falls since it was recorded by Captain Lorenzo Sitgreaves during an expedition in 1851 to determine if the Little Colorado River was navigable to the sea. (After seeing Grand Falls, the Captain decided it definitely was not, and he struck off overland to California.)

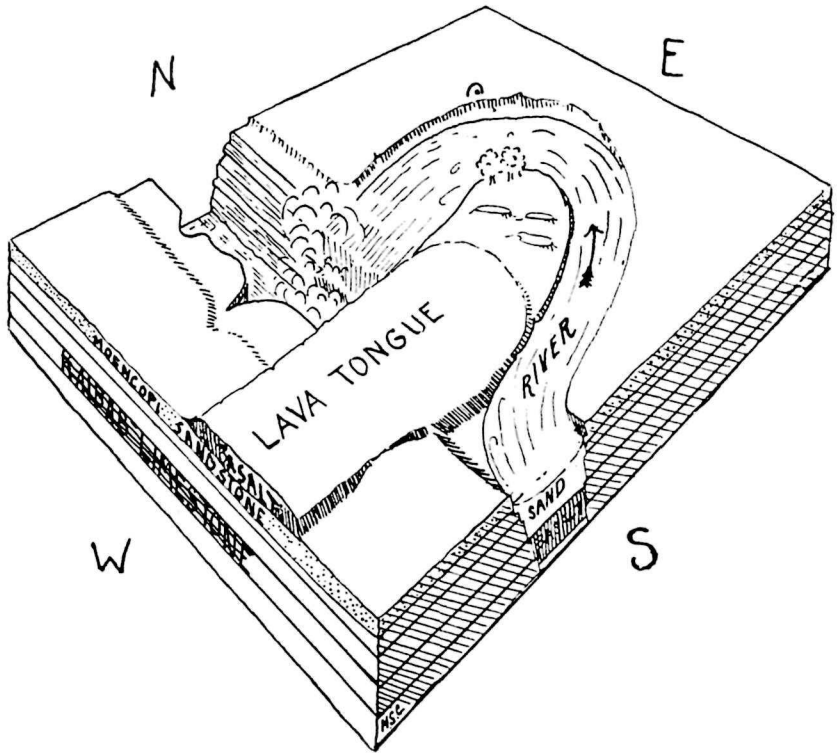


Photograph by the author

Merriam Crater, whose activity in the geologically recent past gave birth to the Grand Falls of the Little Colorado River, is seen in the distance in the photograph above. The picture was taken from the rim of Sunset Crater in Sunset Crater National Monument.

Why there have not been more visitors is something of a mystery. Probably it is owing more to a lack of widespread information than any inconvenience of accessibility. Anyone can reach Grand Falls in a passenger car with no difficulty on the mostly-well-kept gravel roads leading to it. It is not really far from the beaten track—less than forty miles by road from Flagstaff, off an old section of Highway 66. There is plenty of unpaved but relatively flat parking area adjacent to it. But Grand Falls is not widely known or well publicized: few maps show it; main highway signs do not point to it; little has been written about it. Indeed, there is little to indicate its existence to the potential visitor.

Despite its location within the bounds of the Navajo Indian Reservation, even the Indians of the area, ancient and contemporary, have taken little note of Grand Falls. Contrary to their treatment of most nearby natural wonders, there is little or no reference



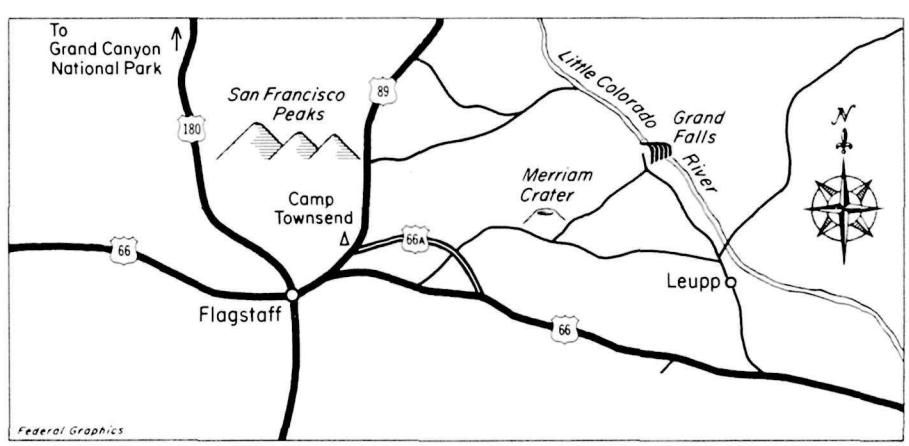
The geologic block diagram shows how a tongue of lava from Merriam Crater choked the ancient canyon of the Little Colorado River. Lava-tongue followed a watercourse draining into the Little Colorado from the west. The cooling basalt impounded a temporary lake on its upstream side (south in the diagram); as the lake waters reached the lowest point on the plug they commenced to cut a new channel and re-entered the old river-course in a falls downstream. Diagram is used by courtesy of Museum of Northern Arizona.

to it in ritual or legend; the locale was evidently not considered a very accommodating site by earlier Southwestern Indians, as only two small ruins have been found within a radius of five miles.

It is true that Grand Falls' lack of notoriety has made it seem in some ways not so accommodating to the modern visitor, either. There are no paved roads or acres of black-top; no tourist conveniences; no Government guides; not even information plaques —just the awesome spectacle of a giant waterfall in its pristine setting. But this is also perhaps the greatest attraction of Grand Falls. It is one of the few remaining great statements of the majesty of natural things left as they were fashioned, untrammeled by the encroachment of civilization; and one can usually be alone with the falls.

FOR THOSE WHO MAY ALSO BE INterested in the vegetation and wildlife of the area there is an interesting footnote to the story of Grand Falls: Merriam Crater, the lava source which produced the falls, was named after the famous biologist, Dr. C. Hart Merriam, whose studies of the flora of the San Francisco Mountain Volcanic Field led to his principle of the seven life zones into which types of plant life may be generally categorized according to altitude. Foremost among the vegetation of the Upper Sonoran Zone, in which the Grand Falls area would be placed, are the juniper and piñon pines, and desert grasses and cacti. However, the prevalent bare lava flows near the falls preclude the rooting of many otherwise-common plants, except for small pockets of scrub pine, juniper, grasses, cacti and wildflowers.

Similarly, the fauna of the immediate region is relatively sparse and little in evidence. Predominant are the jackrabbit, the Arizona cottontail and a few rodents; in the air, the canyon wren, among few other birds; on the ground, the ever-present lizard and the uncommonly encountered scorpion, tarantula, centipede and desert rattlesnake or sidewinder, which constitute little or no hazard because of their scarcity; and predatory mammals like the bobcat and coyote. Neither of these last two are of any danger to the visitor who will leave them alone. A friend of the author's once walked to within thirty feet of a mountain lion resting near a small crater just outside Sunset Crater National Monument; this animal is rarely seen, and an unusual picture was obtained. The lion lazily arose and sauntered off when the posing was completed. ■



NATIONAL PARKS ASSOCIATION
NATIONAL PARKS MAGAZINE
1300 New Hampshire Avenue, N.W., Washington, D.C. 20036

Insert 5-65
Report to the General Membership by the
President and General Counsel 1965

Report of the President and General Counsel, Anthony Wayne Smith,
to the General Membership of the

NATIONAL PARKS ASSOCIATION

on the Occasion of the Annual Meeting of the Corporation and Trustees, May 20, 1965

A NEW EPOCH in national park protection and enjoyment may have been opened by the National Parks Association in its recent public recommendations for comprehensive regional recreation planning for the Yellowstone and Grand Teton Parks region.

The Association has proposed [1] that a large region comprising parts of three States be planned as a whole. It would contain, besides the national parks, the national forests, public domain, reclamation reservoirs, soil conservation projects, wildlife refuges, Indian lands, State and local parks and forests, and private recreational developments outside the public lands.

Recreational use would be relatively light in the natural areas of the national parks and forests, including the wilderness and primitive areas, and heavy in the private recreational areas in the surrounding communities.

The effect of these proposals should be to protect the natural areas of the parks and forests against overdevelopment in a way not hitherto considered feasible by many; and at the same time to provide accommodations for wholesome outdoor relaxation for the increasing multitudes which are visiting our great recreational regions as our population grows.

The Association has also analyzed this approach for the TVA-Great Smokies region,[2] urging more intensive use of the big TVA reservoirs for recreation, and greater moderation in developing roads and mass-recreation facilities in Great Smoky Mountains Park.

We have pointed out that the Government now for the first time has machinery in the Bureau of Outdoor Recreation for making comprehensive plans of this kind, and also for coordinating the work of many public agencies in carrying out such plans.

These comprehensive regional planning proposals have met with broad concurrence by conservationists and a cordial acceptance by public agencies; the difficult dilemma of protection as against visitation has been solved in principle; practical application should not be unduly difficult as time goes on.

It may seem surprising that this approach had to be suggested to the Government by a private educational and scientific organization; it happened because there has been no place in the Government where a broad perspective could be obtained on these governmental operations; thus an autonomous, objective, public-service organization like our Association plays a vitally important part in the democratic process in America.

This work by the Association is made possible almost entirely by the devotion and generosity of its 30,000 members. Publication and distribution of the Magazine is paid for out of membership dues. Our investigations into the biological and social sciences and our consultations with public officials in the Executive Branch, the results of which are usually published in the Magazine, and which make up a large part of the work of the Association, are financed mainly from contributions by members, over and above basic annual dues; such contributions are tax-deductible. They are aided to some extent by income from investment funds which have also been contributed by members, occasionally as sizable bequests; such gifts are also tax-deductible.

THE GRAND CANYON of the Colorado, America's world-famous scenic shrine, has been in great danger in recent years from hydroelectric power promoters. One proposal, the Kanab Creek project, has been to divert 92 percent of the water of the river out of the canyon to generate power; the matter came before the Federal Power Commission, and the Association led conservationists in intervening to oppose this development. Another possibility would be the construction of several hydropower dams in Grand Canyon National Park.

More recently a number of old power projects have been revived in the form of the Pacific Southwest Water Plan; this proposal, developed by the Bureau of Reclamation,

[1] *National Parks Magazine*, January, 1965.
[2] *National Parks Magazine*, March, 1965.

would involve power generation at Marble Canyon above the park and at Bridge Canyon below the park; the Bridge Canyon dam would thrust a reservoir many miles through Grand Canyon National Monument and into the park.

The purpose of the Marble Canyon dam would be to generate hydropower to pump water from the Colorado River near the Mexican border into central Arizona for agricultural, municipal, and industrial purposes; Bridge Canyon dam would generate power for sale to earn money for a basin account to be reinvested in more water works in California and elsewhere.

The National Parks Association has shown, by expert investigation, that Bridge Canyon dam is unnecessary to earn the money for the basin account, because the water pumped into central Arizona will produce more revenue than represented: moreover, firm power can probably be generated at coal-fired thermal plants at 4 mills a kilowatt hour, as contrasted with 6 mills for peaking power at Bridge Canyon; firm power from Marble Canyon will cost 4.2 mills; in other words, coal power will do the job more cheaply, and save the canyons of the Colorado. We have also pointed out that Government studies indicate that atomic energy will be available soon in the Pacific Southwest at from 2 to 3 mills a kilowatt hour; thus the hydropower projects will not pay out.

We have also pointed out that solar energy may be the natural source of electric power in a sun-drenched region like the Pacific Southwest and have urged more vigorous efforts by the Government to harness this source of energy.

These conclusions were announced in the National Parks Magazine [3] and have been placed in the hands of high Government officials for their consideration.

Objective educational work as to the economic and engineering facts in such matters is one of the functions of the Association; the Magazine and special reports are its main educational tools; unbiased, impartial studies provide the information upon which an enlightened public opinion can be developed.

THE PRESIDENT OF THE UNITED STATES in his epochal Message to Congress on Natural Beauty recently expressed his desire to have the Potomac River Basin become a model for good conservation practices; he asked the Secretary of the Interior to review the plan which had been under review by the Army Engineers and make recommendations to him.

This decision by the President came after long efforts by this Association and other conservationists to protect the Potomac against 16 major deep-drawdown pollution-dilution reservoirs proposed several years ago by the Army Engineers. The Association first took interest in the problem on behalf of the C&O Canal National Historical Monument, much of which would be flooded by one of these major reservoirs; but it became apparent that the monument could be protected only within a completely new program for the Potomac Basin.

This new program has been thought of as beginning with the complete elimination of all kinds of pollution; as comprising a network of small headwater impoundments of the Soil Conservation Service type; and as utilizing modern methods for water supply, including a new intake on the fresh-water estuary of the Potomac near Washington for metropolitan water-main purposes.

An unprecedented coalition of conservation, farm, and labor organizations concurred in the Association's Analysis of the Army Engineers' Program, first published in June 1963 as a special report; the Magazine has also carried material on the subject from time to time. The concurring organizations represent perhaps 6 to 7½ million members throughout the United States and in the Potomac River Basin; the review directed by the President may well prove to be a historic landmark. A complete reorganization of governmental structure in respect to river basin planning is probably in the offing; the Association can properly claim credit for a major hand in this impending transformation.

THE CALIFORNIA COAST REDWOODS have been dear to the hearts of conservationists for half a century. Heroic efforts by many people have resulted in the preservation of a small segment of the coast redwoods forest in several magnificent State parks. The President of the United States has recently encouraged proposals for the establishment of a new national park in the coast redwoods and enlargement of the existing State parks. Disastrous floods this past winter have proved the need for better watershed management in the region, including better forestry, and the enlargement of public park holdings.

The Association has given strong support to plans for park enlargement in the redwoods. A National Park Service study considered three possibilities of varying scope, and the Association urged that the largest be considered as a minimum project for protection. It recommended a much more extensive plan for protection of watersheds above the parks, suggesting that Federal purchase of conservation easements for good timber management might be a suitable managerial tool.

The American people, the Association pointed out in its comments to the Service, have proved their interest in the redwoods by hundreds of thousands of financial contributions for protection during some 50 years; they are not likely to stand by idly while remaining redwoods of park quality are logged in a destructive manner. The Association has joined with other conservation organizations in educational and scientific work in this field in the public interest.

The Association has recently been the beneficiary of a generous bequest by a devoted conservationist for protection of the *Sequoias*, both *sempervirens*, the coast redwood, and *gigantea*, the Big Tree of the Sierra. The income from this fund, and if need be portions of the principal, from time to time, will be devoted to this great purpose. This is an example, one among several in recent years, of the way conservationists may provide through their estates for the vital work of the Association.

EVERGLADES NATIONAL PARK, preserving an irreplaceable subtropical world of strange and beautiful plants, birds, and reptiles, was established by the American people, acting through Congress, about 20 years ago at the southwestern tip of Florida.

Since then, conflicting public and private programs of

[3] April, 1964; June, 1964.

flood control, wetlands drainage, water impoundment, agricultural expansion, and municipal and industrial development, have been robbing central Florida of its immemorial water supplies, which have in the past supplied the park region as well.

The Association has been making expert studies of this problem in cooperation with responsible State and Federal agencies, looking toward permanent provision of abundant water to the Everglades Park. We think the nation committed itself to the protection of the Everglades in the park many years ago and that the vast majority of the American people are still committed to that purpose. It is the duty of the various State and Federal agencies responsible for the administration of these natural resources to see to it that Everglades National Park and the irreplaceable natural wealth it contains are protected by adequate water supplies for the enjoyment of the American people, now and permanently.

There have been many warnings by conservationists, including this Association, in the past, that something had to be done about the Everglades; resolution of the problem, however, has awaited a more thorough and precise analysis of the legal and economic problems than has ever before been made, whether by private groups or public agencies. The Association hopes to present such detailed recommendations soon; such technical investigations, needless to say, are extremely expensive, and the constantly recurring problem the Association faces is to find money, through contributions by its members, or otherwise, to carry on these activities.

MANY ADDITIONS to the park system, of great value for all time, have been made in the last three or four years; Cape Cod, Padre Island, Point Reyes, and Fire Island Seashores, Ozark Scenic Riverways, and Canyonlands National Park, among others; important new proposals have been advanced, Assateague National Seashore, Indiana Dunes Lakeshore, Sleeping Bear Dunes Lakeshore, Pictured Rocks Lakeshore, Oregon Dunes Seashore.

The Association made the first suggestions which initiated some of these projects; it examines the plans as they are advanced, and has often recommended the enlargement of territory and the provision of better protection.

Once created, nearly all the parks, monuments, and seashores come under heavy pressure for over-development. The regional planning approach we have suggested is one way to meet these pressures. However, there must be direct resistance at times to plans for big roads through parks, excessive concessioner installations, and even unwise camping and trailer facilities. We follow the master and subordinate plans of the National Park Service, and we often hear about events in the park through our members and our network of correspondents and consultants throughout the country. These problems are discussed with the responsible government officials, who usually welcome our support in resisting over-development.

One of the most objectionable offenders against protective policies is the Bureau of Public Roads in the Department of Commerce. The Association has pointed out the need for bringing the work of this Bureau under proper policy planning; Federal aid should not be given to States for the construction of roads which may even in part pass through State parks, as has been threatened in the California redwoods; nor should the Bureau make the plans for roads in national parks. Park roads should be built to low-speed standards and designed for the enjoyment of scenery; high-speed standards are not appropriate in parks.

The big-dam agencies, notably the Bureau of Reclamation and the Corps of Engineers, have customarily operated with a complete disregard for the values of the natural outdoor environment which the American people have come to treasure more and more. The Federal Power Commission must also be listed as one of the worst offenders; a case in point was its issuance of a license to the Consolidated Edison Company for a hydropower plant at Storm King Mountain on the Hudson.

The presently growing recognition of the importance of the natural outdoor environment, which has been stimulated by the President of the United States, points toward a basic governmental reorganization in these matters, bringing such agencies under the control of policy-minded interdepartmental councils or planning commissions. The Association follows such developments closely, endeavors to appraise new proposals, advances its own suggestions, and thus lends a supporting hand to conservation progress in places where such help counts vitally.

A WIDE VARIETY of conservation and environmental issues claims the attention of the Association constantly.

We fought off efforts a year or two ago to introduce hunting in the national parks as a so-called management tool; the parks give the public a chance to see animals in a natural environment, whereas hunting can be enjoyed elsewhere.

We manage to find the time for seemingly small but important causes like the protection of the endangered Kaibab squirrel against ill-considered open hunting seasons. Our protests last year in this matter were taken up by great numbers of people and were effective; we shall continue to stand guard.

We have thrown the searching light of scientific inquiry and public attention on the abuse of pesticides, particularly insecticides, promoted by public agencies and private corporations. We exposed the atrocious Green River fish poisoning in the Dinosaur National Monument region, an operation which, as a consequence, will probably not soon be repeated.

We have been devoting much time, thought, and effort to the views which we must advance when administrative hearings are called on the recommendations of the Secretary of the Interior on wilderness areas in the parks, required by the Wilderness Act of 1964. We must also analyze the plans of the Bureau of Outdoor Recreation and the National Park Service for land classification within the parks, the desirability of which has been doubted by many, and the results of which could be disastrous, opening large parts of the parks to occupation, if improperly handled. We have examined the master plans and budgets of the National Park Service for road and other facility construction in Mount McKinley National Park, among others, criticizing them as too favorable to heavy traffic and destructive to wildlife, scenery, and wilderness.

THE NEW LAND AND WATER FUND will make it possible to finance land acquisition for the national parks, forests, and wildlife refuges as never before; it will also give matching funds to the States for land acquisition and the development of recreational programs; it will afford magnificent opportunities for conservation and environmental protection if properly employed; pressures for mass recreation of an undesirable kind could change it into a destructive force; this Association, among others, must be on guard to protect the public interest.

The new Water Pollution Control Administration which will probably be established in the Department of Health, Education and Welfare will strengthen the hand of the Government in helping industry and communities to prevent pollution from getting into our streams and rivers. This will be a great boon to conservation, aiding fish and waterfowl protection and making deep-drawdown reservoirs for the dilution of pollution unnecessary. The educational work of the Association aids developments of this kind.

Public transportation, supplementing the private car, as a means of lightening the traffic pressures in the parks has been suggested by the Association; comfortable coaches, perhaps electrically driven, could be operated from outlying communities around the great parks, or from the entrances to the forests or the parks; people could leave their cars behind and visit the parks unburdened; the parks would be protected from traffic, excessive road construction, and great deserts of parking lots. Similar suggestions have been made for water access to the national seashores, making lengthwise roads unnecessary.

We have urged interdepartmental cooperation, instead of conflict, between agencies like the National Park Service and the U.S. Forest Service in respect to such questions as the establishment of a new national park in the northern Cascades; these recommendations have led to the use of interdepartmental study teams whose work is promising.

We have concerned ourselves within the limits of our facilities with the protection of parks and green and open spaces in the cities, in one instance by court action, and in others by objective publicity, for we are concerned with a natural life-environment for all people everywhere, both in the cities and in the country.

Scenic and conservation easements, as a means of protecting privately owned land for its natural beauty and recreation and as a means of achieving ecological forestry, have been recommended persistently by the Association; at first, public agencies were heedless, but recently the idea begins to gain overwhelming support; it leaves basic private ownership untouched, but protects the public interest.

The underlying menace of the population explosion to all conservation efforts begins to be widely understood; the Association makes a continuing contribution to such public understanding in the pages of the Magazine.

Close cooperation has been developed with National Educational Television, many of whose stations carry outstanding programs in the conservation field.

National parks are a theme of world-wide significance. The Association cooperates closely with comparable organizations in other countries and on the international scene to establish and protect great national parks abroad for wildlife and scenic preservation and public enjoyment. In recent months, it has had distinguished lecturers on its Washington Conservation Education Center platform and has published many articles in the Magazine on national parks in other countries and their vital contributions to civilization.

We remind our readers and members regularly that their voices are influential with public officials in the Executive Branch. Public administrators depend heavily on their incoming mail to tell them how people feel about government policy; we help our members by providing information on issues and occasions for the expression of their views.

OUR MEMBERS MAINTAIN a vigorous correspondence with us. It is always helpful in reflecting their views and making valuable suggestions; we do the best we can to answer with our limited staff. Members' interest in the Association is also shown by the gifts received in our annual contribution drive. About 200 members contribute between $25 and $20,000 apiece every year, and more than 10,000 persons, or over one-third of our membership, contribute smaller amounts within their means every year, over and above membership dues, which now range between $6.50 and $35 a year. More and more of our members are making provision for the Association in their wills. And our members realize that in addition to receiving the enlarged National Parks Magazine, with quarterly color covers, and its wide-ranging articles and beautiful photographs on conservation, they lend their vital help in a great cause to which they are devoted.

The strong loyalty which the Association has engendered among its members, and their intense interest in the Association and its work, are the best guarantees that the Association will continue to grow and to influence public affairs creatively in America in respect to the parks, the public lands, the protection of the natural environment, and the enhancement of natural beauty; all those great purposes, which taken together, we know as conservation. ■

In the 1880's cattleman Theodore Roosevelt could be seen in the Little Missouri country of the North Dakota Badlands in ranch costume complete with sixshooter.

Theodore Roosevelt Memorial Park

By Roy W. Meyer

Photographs courtesy National Park Service

PROBABLY NO ONE WILL EVER KNOW for sure whether General Alfred Sully really described the North Dakota Badlands as "hell with the fires put out." Colonel Miner T. Thomas claimed to have been at his side when he made the remark, but Thomas' recollections were published long after that blazing hot August day in 1864 when General Sully and his troops, campaigning against the Sioux, suddenly came upon a break in the prairie and looked out across a fantastic landscape of starkly eroded buttes and canyons stretching away as far as they could see. Sully, whose father was a painter, had an eye for the pictorial, and in his official report described the Badlands in more conventional language. "Grand, dismal, and majestic," he called them.

No doubt most people, when they hear the term "badlands," think immediately of the White River Badlands in South Dakota, a region of weirdly sculptured pinnacles and spires, part of it included in Badlands National Monument. Actually, badlands topography is found in North Dakota, Montana, Wyoming, Alberta, and elsewhere in the Great Plains. Although these widely dispersed stretches of badlands were not formed in precisely the same way, erosion played the major role everywhere. Centuries of cutting away by wind and water have left a terrain sharply dissected. Combined with a semi-arid climate, this rugged topography has made for a region inhospitable to plant and animal life, including man.

A Colorful Terrain

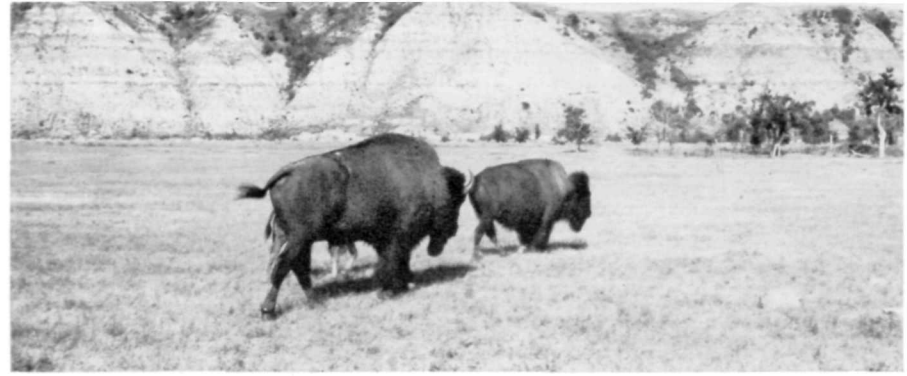
The Little Missouri Badlands of North Dakota support more vegetation than those in South Dakota and hence, although less spectacular, are more colorful. Besides the varying shades of tan and brown of the clay soil, the landscape is diversified by the green of juniper and the gray of sage. In addition, subterranean lignite beds, set afire by lightning, have burned some of the clay to a brick-red substance locally called "scoria." (True scoria is the product of volcanic action.) In the North Unit of Theodore Roosevelt National Memorial Park there are masses of a bluish clay, called bentonite, which become soft when saturated with rain and slide down the slopes, adding yet another shade to the color scheme of the Badlands.

Except for occasional Sioux hunting parties, the Indians seem to have made little use of the Badlands. Those living nearest, the earth-lodge dwellers of the Mandan, Hidatsa, and Arikara tribes, avoided this region, partly because of fear of the Sioux, partly because the area was the refuge of men who had survived being scalped and were there-

after looked upon with awe and fear by their people.

White men had visited the Badlands occasionally for sixty years before Sully and his troops marched through, but it was only with the railroad surveys of the early 1870's that the region became widely known. The panic of 1873 delayed actual construction of the Northern Pacific through western Dakota until 1879, when a detachment of troops was stationed just west of the present town of Medora to protect the track-laying crews from Indian attack. As soon as the tracks were laid, the Northern Pacific began promoting the area. An attempt was made to substitute the name "Pyramid Park" for Badlands, which bore unfavorable connotations, and a town called Little Missouri sprang up.

Theodore Roosevelt's association with the Little Missouri country began in 1883. Coming there to hunt, he remained to ranch. Once the Indians had been subdued and the bison all but exterminated, cowboys and range cattle replaced them. Roosevelt and his not-always-friendly contemporary, the Marquis de Mores, were but two among many who invested—and lost—heavily in the cattle business during the 1880's. Roosevelt prospered until the disastrous winter of 1886-87, when heavy snows and severe cold destroyed the herds, already weakened by a summer of drought. Although he retained an interest in the Elkhorn and Maltese Cross ranches until near the end of the century, his operations were conducted on a much smaller scale, and he came to spend less and less time in the West as his involvement in public life increased.



American bison in the south unit of Theodore Roosevelt National Memorial Park

The idea of honoring Roosevelt with a national park developed in the years following his death in 1919. North Dakota Congressmen seized upon his identification with the Badlands to push for the establishment there of a park bearing his name. Bills for this purpose were introduced in at least six successive Congresses in the twenties and thirties, all without success. At the dedication of the Medora bridge in 1928, Stephen Mather and Roger W. Toll made an official investigation for the National Park Service and recommended a national monument rather than a national park.

Wind and water have cut deeply into the soft and largely unconsolidated formations of North Dakota's High Plains country to create a terrain once called by General Alfred Sully "grand, dismal, and majestic."

Inception of the Park

Theodore Roosevelt National Memorial Park had its origins in the depression and drought of the 1930's. The first attempt to develop the area was made by the Civilian Conservation Corps, which started work in the Badlands in 1934 on a single section of land provided by the State of North Dakota a couple of miles northwest of Medora. Almost simultaneously with the CCC activities came the Rural Resettlement program, which aimed at buying up submarginal lands and removing the homesteaders to more suitable locations. Much of the land thus acquired by the government was converted into Recreational Demonstration Areas, which were placed under the supervision of the National Park Service. Roosevelt Park was approved as one of these in 1935.

Development by the CCC, limited mainly to road-building and the construction of camp and picnic areas, continued until 1942, when the CCC

was liquidated and the park dropped into a sort of limbo while the National Park Service decided what to do with it. The original plan had been to turn the Recreational Demonstration Areas over to the States after their potential had been demonstrated, but North Dakota was unprepared to assume responsibility for Roosevelt Park. The Park Service, regarding it as a duplication of Badlands National Monument, did not wish to retain it. In 1946 it was transferred to the Fish and Wildlife Service as a game refuge.

Some Legislative History

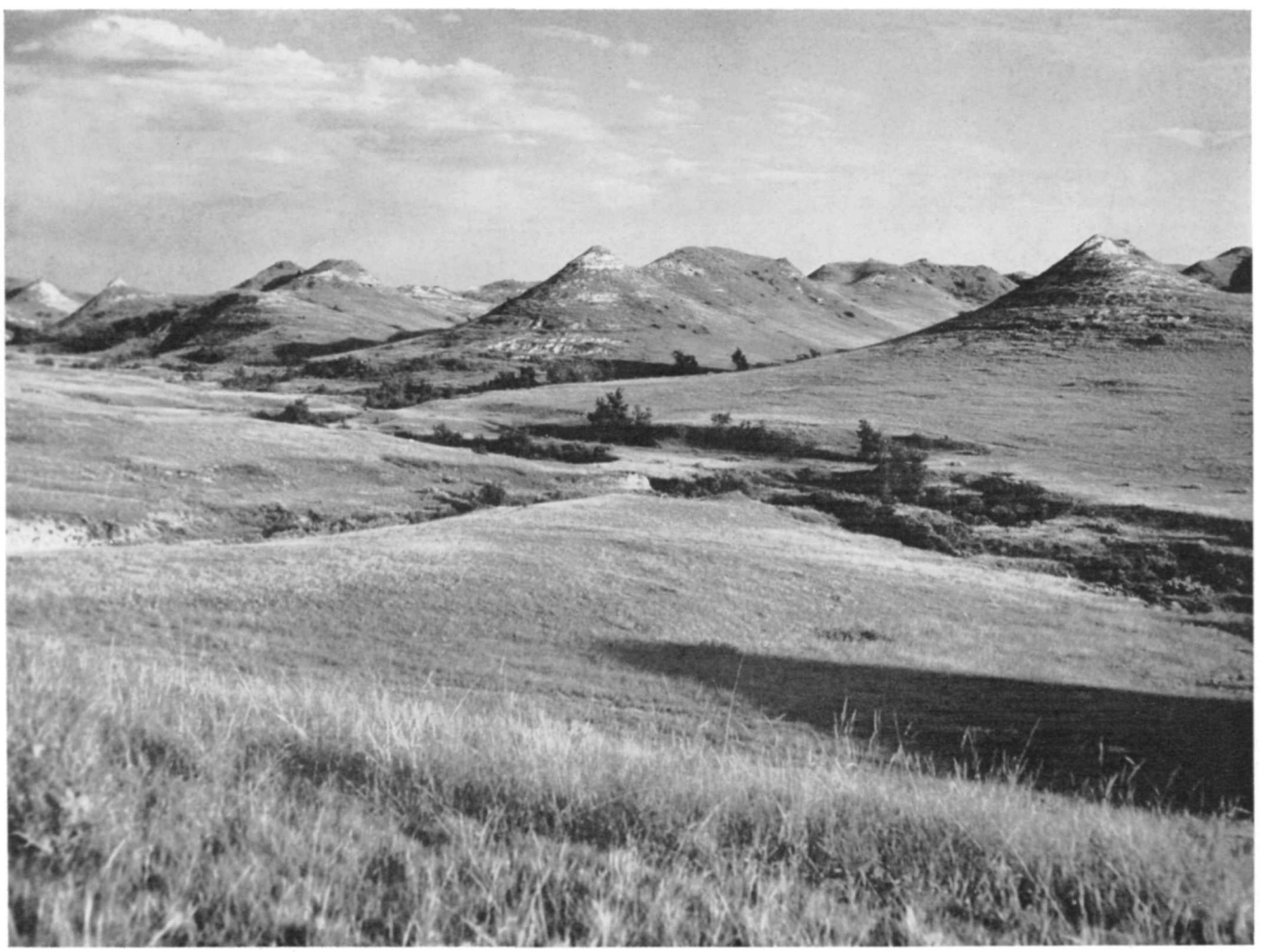
North Dakota people were not satisfied with this disposition of the park, however, and continued agitating for a Theodore Roosevelt National Park. After a bill introduced by Representative William Lemke to accomplish this end had been vetoed by President Truman, presumably on the recommendation of the Park Service, Lemke tried again, this time inserting the word "Memorial" in the title and including the Elkhorn ranch site to identify the proposed park more closely with Roosevelt. This bill went all the way and was signed into law April 25, 1947. A little more than a year later the original area, near Medora, was enlarged and the North Unit added. The official dedication was held June 4, 1949.

To one who visits the park today, the Park Service's hesitation is difficult to understand. Although the association of the area with the 26th President was stressed in order to get the park established, it can stand on its own merits as a scenic preserve of outstanding interest. In the South Unit, adjacent to U.S. Highway 10, the chief attractions, in addition to the badlands formations themselves, are a burning coal seam, several prairie dog towns, and the Ridgeline and Wind Canyon nature trails, the latter affording fine views of the Little Missouri.

The alert west-bound tourist may catch an occasional glimpse of the Badlands a few miles west of the plains town of Belfield, but his best view of them comes when the spectacle of Painted Canyon suddenly opens on his right—perhaps the very scene that confronted Sully a century ago. Even if he eschews the purple passages written about the Badlands by Herman Hagedorn and others, he will almost certainly agree with Roosevelt's more restrained comment that this country "has a desolate, grim beauty, that has a curious fascination for me."

The flavor of Theodore Roosevelt

Although devoid of the spectacular, both units of Theodore Roosevelt Park possess a quiet beauty of their own. Typical of south unit scenery is the grassy butte-and-watercourse picture below.



National Memorial Park can be appreciated by a visit to the South Unit alone, provided one stops at the visitor center at Medora (where the much-traveled Roosevelt ranch house has found a final home), follows the nature trails, and spends a few nights at Cottonwood campground. Yet the North Unit, much less frequented, has attractions of its own, notably the bentonite deposits, best seen along the Caprock Coulee trail, and the magnificent panorama spread out below Sperati Point, beyond the end of the park road. The Little Missouri is a small stream, but over the centuries it has carved out a sizable valley. To enjoy the North Unit fully, one should camp at least a night or two at the uncrowded Squaw Creek campground.

Wildlife at Theodore Roosevelt is typical of the Northern Plains region. Except for bison, reintroduced in recent years, the big game is gone. The bison are not hard to find—indeed, they may sometimes hold up traffic as they lumber across a park road—and a mule deer may emerge at dusk from the brush at the edge of the campground, stand motionless for a few minutes, then vanish whence it came. The pronghorn is also found in the park, but is less frequently seen. Prairie dogs are numerous and always a source of entertainment to park visitors. Most birds are species common throughout the Midwest—robins, flickers, kingbirds, grackles, and the like—but magpies, eagles, and other Western birds are present also.

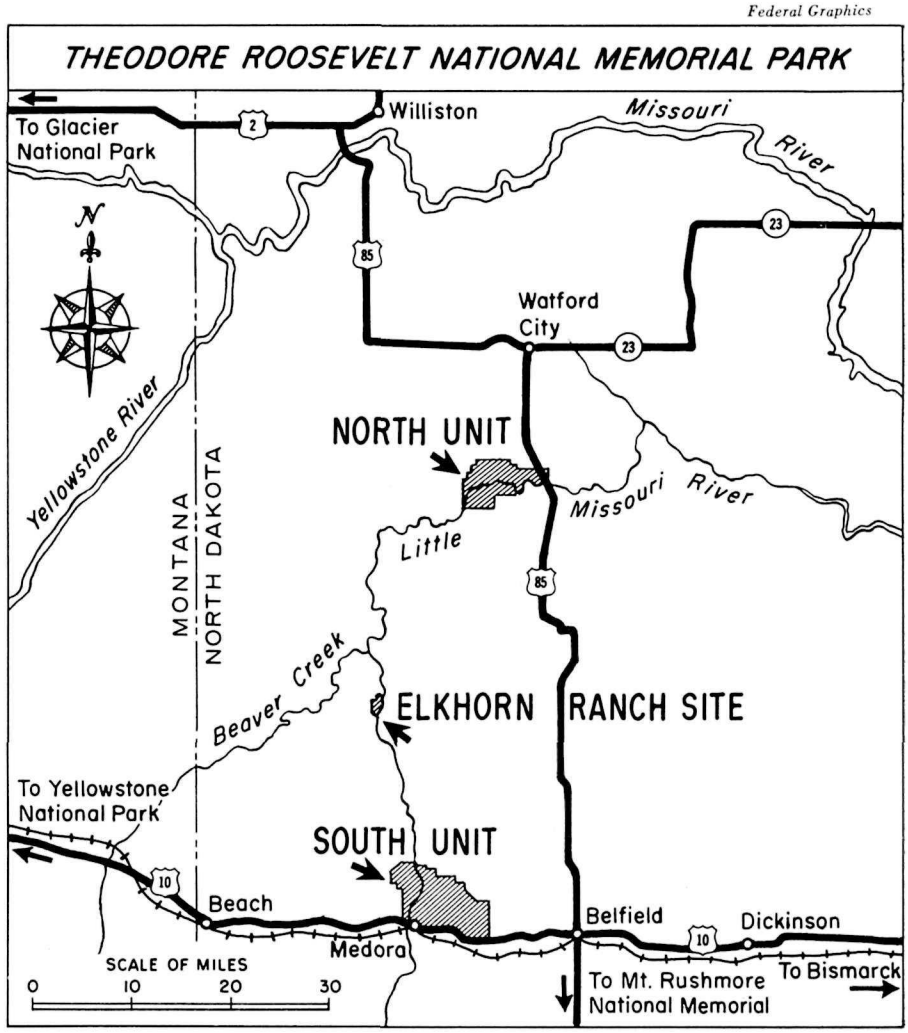
Plants of the Region

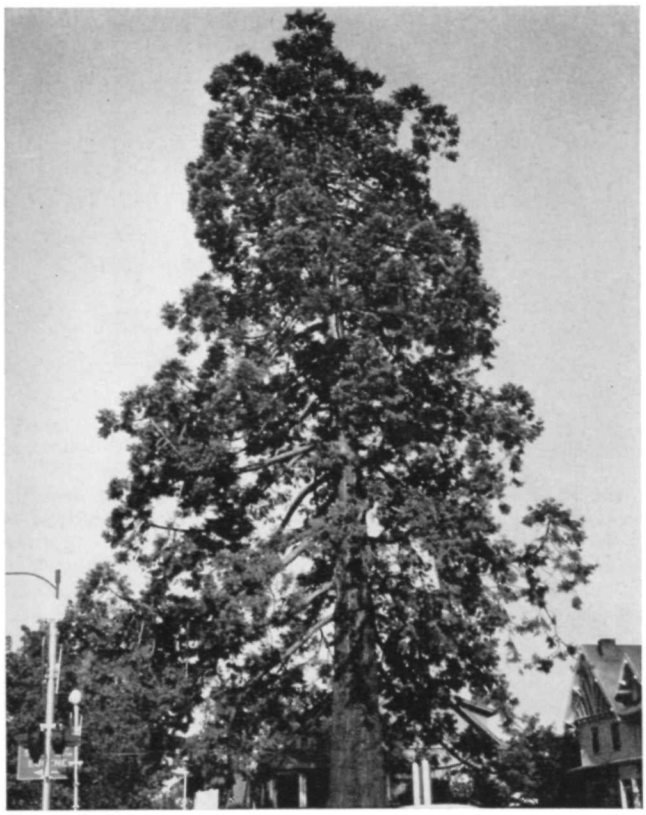
Considering the semi-arid climate, the Badlands support a surprisingly rich plant cover. Limited largely to sage, prickly-pear cactus, and grasses on the exposed south sides of the buttes, it is more luxuriant on the protected, north-facing slopes, where heavy stands of juniper are found, together with shrubs and small trees such as sumac, chokecherry, wild plum, and currant. The flood plain along the river is densely clothed with cottonwood, green ash, box elder, and other deciduous trees. A wide variety of prairie flowers find a home in the park, including the pasqueflower, scoria lily, prairie rose, and several composites.

Theodore Roosevelt National Memorial Park includes only part of the Little Missouri Badlands. Outside the park boundaries there are many features of scenic, historic, and scientific interest, such as the columnar cedars, which grow only in a small area near a burning coal seam near Amidon, and the Killdeer Mountains, a range of heavily-wooded hills rising sharply above the level prairie east of the North Unit. Both of these areas have been recommended by the National Park Service for inclusion in the State park system. Nearer to the park, the town of Medora has several buildings of historic interest, notably the Rough Riders Hotel, built in 1885, and the De Mores chateau, which is administered by the State Historical Society. Within the South Unit, but difficult of access, is a large petrified forest whose relics are thought to represent an ancient species of *Sequoia*. The real Roosevelt "buff" may want to follow the 20-mile dirt road to a point across the river from the Elkhorn ranch site, but he should know in advance that nothing remains of the buildings but a hole in the ground and a few stones.

As the visitor to Theodore Roosevelt National Memorial Park drives along the hard-surfaced roads or hikes the graveled trails, he ought to think now and then of Sully's hot, thirsty, battle-weary soldiers trudging through what seemed to them a desolate wasteland, imagining a Sioux warrior behind every butte. He might also spare a thought for the Sioux themselves, most of whose food and supplies had been lost at the battle of the Killdeer Mountains, and who were in all probability not the Indians Sully had been sent to fight. To soldiers and Indians alike, this country was emphatically hell, and the fires were not quite out. ■

Federal Graphics





Yellowstone National Park was established in 1872 and is still one of the largest of American public preservations. In the same year William Waldo, of Salem, Oregon, planted a Sequoia gigantea *sprout which was later to be preserved in one of the nation's smallest public parks. The Big Tree of Waldo Park, seen at the right, is now 76 feet tall and more than six feet in diameter at breast height.*

Photograph by the author

Small Park for a Big Tree

By Glen W. Taplin

In 1872 William Waldo, prominent citizen of Salem, Oregon, bought a tiny sprout of *Sequoia gigantea*, the California Big Tree, from a traveling salesman and set it out on his acreage just outside the city limits as they were drawn at the time. As the tree grew the town also increased in size, and the time came when Waldo's property was due to be platted and taken into the city. By that time, however, Judge Waldo's voice in community affairs was strong enough to enable him to successfully insist that the tree be preserved before he vacated his land for a State highway route. Judge Waldo died in 1911, and it remained for others to perpetuate his interest in the growing Big Tree.

As has happened in all American cities and towns, proliferation of the automobile necessitated first the widening and then the paving of Salem city streets; and each accommodation with the ever-flowing tide of steel and rubber brought a fresh crisis for the tree. It was condemned several times as a traffic hazard, but each time loyal residents took up the challenge. Finally, the American War Mothers, supported by many of the city's leading citizens, succeeded in having the city council declare the tree and its site to be a city park. The council accomplished this by a resolution passed in June, 1936. The new park was named after Judge Waldo, the man who first planted the sprout of *Sequoia gigantea.*

The tiny sprout is no longer tiny—it has reached a height of seventy-six feet, and measures seventy-four inches in diameter four and a half feet above ground level. As *gigantea* goes, perhaps this *is* still a sprout; two or three thousand years from now it will no doubt be necessary to increase the dimensions of the park! The plot now measures twelve by twenty feet, or .0055 acre; a size which should certainly qualify it as one of the nation's smallest public parks. ■

An Identification Test for Bird Enthusiasts

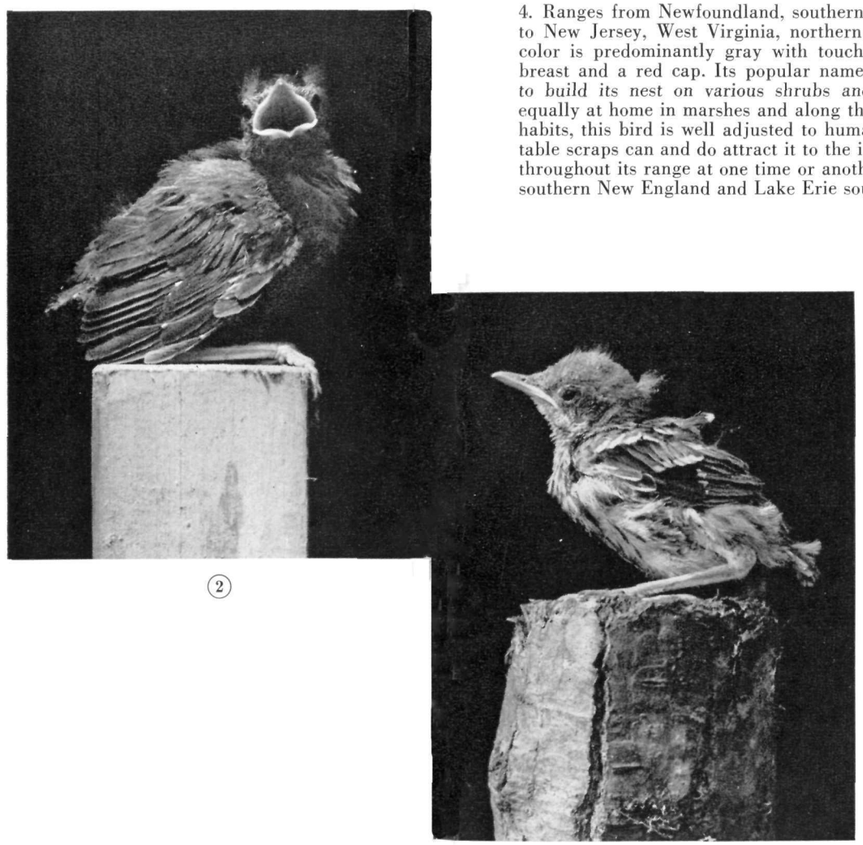
By Larry J. Kopp

Photographs by the author

With the aid of a good field guide, anyone can identify most of the adult songbirds. But to find out how expert you really are, try naming the six young birds illustrated on these pages! The answers will be found on page 26.

(1)

1. Among the most familiar of all songbirds, this one is found from the limit of trees in Canada south to northern Georgia, Mississippi and Louisiana, and is readily recognized by its gray-black wings, brick-red breast and yellow bill. Often associated with the first day of spring on calendars, the bird in real life competes for this honor with a number of other songbirds which either winter in northern areas or arrive from the South at about the same time in spring. The lower part of its nest is composed of mud and bits of grass, while the top portion is made of tiny roots and a few twigs; its nests are usually found in crotches of trees. Perhaps one of its most interesting habits is its resentment of competition at nest-building time; it will actually fight other birds which seem inclined to intrude.



(2)

2. This bird ranges from southern Canada to northern Florida, Louisiana, and southeastern Texas. Slate-gray in color, it has a black cap and reddish feathers on the underside of its tail. Although its song is often musical, the species is more easily identified when disturbed, for it can abandon its musical talent and substitute a series of harsh notes. Its nest, composed of assorted twigs, is found on a variety of shrubs located in open country, frequently in thickets and along stream banks. Most members of the clan spend their winters in the southern part of the United States; but one may sometimes see hearty specimens in colder regions as far north as southern New England.

(3)

3. One of few songbirds that are widely distributed about civilization; in cities, towns and in farming country throughout the United States and Canada. In the city this bird is usually so sooty that it may be difficult to recognize, but in the relatively clean country it is easily identified by its black throat, white cheeks and chestnut nape. It builds its nests in birdhouses or crevices of other buildings wherever conveniently located. At dusk groups gather in and around leafy trees where they roost for the night, and the loud, repetitious chirping which ensues while the birds are settling down far exceeds the babbling that is usually associated with young humans during a good pillow fight.

(4)

4. Ranges from Newfoundland, southern Quebec and northern Manitoba south to New Jersey, West Virginia, northern Missouri and northern Nebraska. Its color is predominantly gray with touches of black; it has a white, streaked breast and a red cap. Its popular name is derived from the fact that it likes to build its nest on various shrubs and weeds in swamps; but the bird is equally at home in marshes and along the banks of streams. Despite its nesting habits, this bird is well adjusted to human society; for breadcrumbs and other table scraps can and do attract it to the immediate vicinity of many farm homes throughout its range at one time or another during the summer. It winters from southern New England and Lake Erie south to the Gulf of Mexico.

(5)

5. Seen by birding enthusiasts in Maine, southeastern Quebec, northern Michigan, and southern Manitoba, this one ranges as far south as the Gulf of Mexico. Bright rufous-red above, striped breast, the species is easily distinguished from similar birds (thrushes, for example) by wing-bars and yellow eyes. Of interest is the fact that it winters in the southern part of the United States; on occasion, however, as far north as Massachusetts. Its loosely constructed nest of twigs is found on or in dense shrubs—seldom in trees—nearly always in open country rather than in the woods. The bird, although in popular name only, has something in common with an operation performed by farmers in the fall.

(6)

6. You might expect to find this feathered singer from central Pennsylvania, southern Michigan, northern Illinois, and southern Nebraska south to central Georgia, Alabama, Mississippi and Arkansas. Dark brown in color, it is most easily distinguished from its relatives by white spots in the corners of its tail and a white stripe over the eye. It is fond of nesting in birdhouses, but will build with equal vigor in cavities of stone walls, trees, and abandoned buildings. Its song is variable and frequently sounds like that of the song sparrow. While there may be individual exceptions, this bird generally winters throughout its nesting range and southward to the Gulf of Mexico.

News and Commentary

Range Management Convention

For four days last February, over a thousand stockmen attended the Eighteenth Annual Convention of the American Society of Range Management in Las Vegas, Nevada. Present was an Arizona trustee of the National Parks Association, conservationist and writer Weldon F. Heald, who attended as observer for the Association. Mr. Heald sat in on panel discussions, heard some thirty papers on modern range management, and reported his impressions to the Association.

This meeting was the largest in the Society's history, and seemingly reflected the growing awareness among ranchers that Western ranges must be improved not only for increased grazing yield but to provide for wildlife restoration, preservation of scenic values, and to satisfy the increasing demand for outdoor recreational opportunities on private rangeland.

Mr. Heald reported that this awareness seemed to be coupled, however, with a determination to "manage" nature for profit instead of allowing natural laws to prevail so that visitors could partake of the esthetic rewards accompanying man's appreciation of untrammeled land. Heavy emphasis was placed upon the "management tools" of fire, pesticides, machinery, and artificial restoration; the preservation of nature for its own sake seemed to receive little consideration. In addition, said Mr. Heald, there were indications that stockmen oppose the preservation of land under the terms of the new Wilderness Act, and likewise oppose creation of any more national parks under present Park Service designation as areas of primarily esthetic and scientific, but not commercial, value.

A School of Bio-Sciences

During the fall of 1965, Texas A & M University will inaugurate a School of Natural Bio-Sciences, thought to be the first school of its kind in the country. It will represent, in the words of Dr. R. E. Patterson, dean of the College of Agriculture, "our effort to keep up with the demands and the changing picture in land use . . . we must do a better job of multiple land use if the nation is to produce food, fiber and timber and provide recreational areas, too." Dean Patterson pointed out that recreational programs proposed by Federal agencies in the recent past require students to be trained more fundamentally in parks and recreation development. Thus, within the new School there will be a Department of Recreation and Parks; the Dean emphasized that this study area "is bulging with career opportunities for graduates." Many positions, he said, can be found in Federal and State parks, municipal parks, private recreational areas, and private industry recreation facilities.

Assateague Seashore Hearings

In establishing national seashores, Americans set aside shore environments still relatively natural and unspoiled as refuges from the traffic and havens where city people may find quiet natural beauty. The people do not want their national seashores laced with highways and parking lots, and in the establishment of at least two national seashores—Padre Island and Fire Island—they have made this philosophy quite clear.

This was, in essence, the view presented, upon invitation of the Senate Interior and Insular Affairs Committee, by Anthony Wayne Smith, president of the National Parks Association, at public hearings in regard to the proposed Assateague Island National Seashore. Mr. Smith was represented at the hearing by Smith W. Brookhart, Washington attorney. The hearings, held in Washington during March, considered two bills, S. 20 and S. 1121, generally similar except as to contemplated roadbuilding in the reserve. While S. 20 would leave roadbuilding to the discretion of the National Park Service director, S. 1121 calls for a road between existing Assateague Bridge in the northern part of the island and Chincoteague Bridge in the southern part. The Chincoteague Wildlife Refuge occupies the southern, or Virginia, portion of the island and, while the refuge would remain under jurisdiction of the Fish and Wildlife Service, it would be part of the seashore.

It was pointed out that a road running nearly the entire length of Assateague Island would open up the seashore to fast traffic, much of it uninterested in the seashore and its scenic and wildlife values; and that roads constructed on the shore would mean large expanses of black-topped parking areas, which would automatically tend to spread, to the ruination of the natural scene. "This is very squarely a question of people against traffic; what is involved here is an effort to protect a few remaining vestiges of natural America where human beings can escape the congestion, the noise, the uproar, the hawking and vending . . . and find themselves, at least for a few brief hours, in a comparatively quiet, undisturbed, uncrowded, natural and beautiful environment," Mr. Brookhart said; he further pointed out that the idea of access by automobile to the entire length of the seashore ought to be discarded in favor of a well-developed system of public and private water access from the mainland to many points on the island.

Water-Conversion Test Center

During mid-March Interior Secretary Stewart L. Udall made public plans for cooperation between Interior and California's Department of Water Resources in developing a saline-water conversion test center in southern California. From a number of possible locations a definite site for the center will be chosen in the near future, the Secretary indicated. The test facility is one of the key features of the "Program for Advancing Desalting Technology" which the Secretary submitted to President Johnson last September at the President's request; it will serve as a central location where full-scale components of desalting plants can be tested and evaluated.

Antietam Battlefield Bypass

The National Park Service has let a contract for the relocation of a Maryland State highway that now passes through Antietam National Battlefield. When completed, the 1½-mile new road will allow non-park traffic to bypass the historic area, away from sites of visitor congestion.

Florissant Fossil Beds

Scattered here and there over the nation are many tracts of land—sometimes small, and often scenically unspectacular—that are intensely interesting to scientists and the natural-history oriented among lay Americans. Such an area lies a few miles west of Colorado Springs in the Front Range of Colorado's Rockies, in a high mountain basin—the Florissant Lake Fossil Beds, renowned for many years among geologists and paleobotanists and entomologists all over the world for the variety and perfection of its fossil plants and animals of the Oligocene period. More than a thousand life forms have been identified at this locality; in particular, it has yielded a vast quantity of fossil fishes and insects, including nearly all the fossil butterfly specimens of the New World. There are several fossil forests, so-called, consisting of in-place stumps and root-systems mainly representing *Sequoia* sp., and beautifully preserved fossil wood and leaves of walnut, beech, oak and maple.

Aside from the fossil relics themselves the manner in which they came to be en-

tombed in a small mountain basin furnishes a fascinating story in natural history. The National Park Service has had an active interest in acquisition of the area as a national monument for interpretation to the public, and the Advisory Board on Parks and Monuments recommended its inclusion in the national park system several years ago. The Magazine hopes to present its readers with an account of this remarkable locality in an issue of the near future.

The Overhead Wire Problem

No one would argue that the webwork of utility transmission wires that drapes America's cities, suburbs and countryside like so much catenarian spaghetti is of particular esthetic value, but the solution to this vexing conservation problem will not come easily. The fact is that underground lines, over any considerable distances, are very expensive. Conservationists will recall that the President, in his recent message to the Congress on natural beauty, touched on the overhead wire problem, and noted that further research is badly needed on the underground installation of utility transmission lines.

Now the Federal Power Commission has announced its intention to sponsor a joint government-private industry committee to make a study of methods and costs of putting public utility power lines underground. The committee will not engage in research work, but rather will survey the "present status and future prospects" of underground power lines. The FPC has indicated that the study will probably lead to a public report.

Private industry has also been looking at the overhead wire problem, and recently activated a Joint Electric Power Research and Development Council which will promote actual research in the matter. The FPC's committee would "dovetail" its efforts with those of the Council in order to avoid duplication.

Great Swamp Refuge Addition

Several years ago New Jersey and other conservationists banded together under leadership of the North American Wildlife Foundation to save New Jersey's Great Swamp of the Passaic River, in Morris County, from obliteration under the concrete of a jet airport for New York City. The struggle to save the swamp and its exceptional natural beauty and scientific interest brought more than a million dollars in contributions from thousands of individuals and hundreds of organizations all over the country. Nearly 3000 acres of swampland was finally obtained and turned over to the Fish and Wildlife Service for administration as a national wildlife refuge and outdoor educational area. Now John S. Gottschalk, Service director, has announced an allocation by the Migratory Bird Conservation Commission of $2.8 millions for another 3267 acres of swampland, to be added to the wildlife refuge—the largest allotment of funds ever made for an addition to such a reserve. Director Gottschalk cited Great Swamp as "a type of wild terrain that is becoming steadily more valuable, particularly so close to a metropolitan area." (The swamp is less than 40 miles from New York City.) It has been indicated that acquisition of the additional lands may be a rather slow process, however, because of clouded titles to many of the parcels involved.

The Migratory Bird Conservation Commission has also approved additional acreage for the following wildlife refuges: Willamette, in Oregon, 2651 acres; Horicon, in Wisconsin, 80 acres; and Santee, in South Carolina, 1022 acres.

Harpers Ferry Expansion

During late March the formal addition of 763 acres to Harpers Ferry National Historical Park was announced by the National Park Service. Director George B. Hartzog, Jr., of the Service, said that the property, located across the Potomac River from the West Virginia section of the historical park, was deeded to the United States by Maryland in 1963, but formal addition to the park was held up pending clearance of title matters. Under terms of the deed a power company and a railroad retain certain rights of way. Development of the property, which lies on Maryland Heights, will emphasize preservation of scenic and historic values, the Park Service has indicated; during the Civil War the strategically important Heights was occupied by both Confederate and Union forces.

Conference Date Announced

The Wildlife Management Institute, national conservation organization with headquarters in Washington, D.C., has announced that the 31st North American Wildlife and Natural Resources Conference will be held next year at the Hilton Hotel in Pittsburgh, Pennsylvania, March 14, 15 and 16. The 30th Conference, held during March in Washington, D.C., drew an attendance of nearly 1500 persons, the Institute has revealed; the conferees, representing conservationists, natural resources administrators, biologists, educators, outdoor writers, and others, heard more than 50 presentations under the general theme "Statesmanship in Our Changing Environment."

Foundation Assumes CORC Programs

The Conservation Foundation, nonprofit New York organization for the promotion of knowledge about the earth's resources, has announced its assumption of responsibility for the educational programs of the Citizens Committee for the Outdoor Recreation Resources Review Commission Report, which has its headquarters in Washington, D.C. Samuel H. Ordway, Jr., president of The Conservation Foundation, has stated that "The Foundation will continue CORC's efforts to develop sound outdoor recreation opportunities for the American people as an integral part of the Foundation's overall program in behalf of the quality of man's environment." Frank Gregg, formerly secretary and executive director of CORC, has joined the Foundation as director of its Washington office, and will direct the continued program from the present CORC office at 1001 Connecticut Avenue, N.W., Washington, D.C. 20036.

Sanctuary Expands Its Holdings

The president of Hawk Mountain Sanctuary Association has announced that the Association recently purchased 640 acres of land adjacent to its sanctuary near Kempton, Pennsylvania, the purchase price having been financed by gifts from a charitable foundation and several of the Association's directors. The Association is a private, non-profit conservation group with a national membership; its unique refuge for birds of prey now encloses more than 2000 acres of ridge and valley along Blue Mountain in Pennsylvania's Alleghenies. The purchase was made to acquire new land for the Association's expanding program of conservation education and to protect green acres essential for quiet recreation and ecological knowledge. The extensive new tract includes a geological feature called the River of Rocks, a mile-long field of giant boulders left by retreating Pleistocene ice.

THE CONSERVATION DOCKET

Representative Ottinger of New York, who recently requested the Federal Power Commission to withhold final decision on a proposal by the Consolidated Edison Company to build a hydroelectric plant overlooking the Hudson River, has introduced *H.R. 3012*, to establish a Hudson Highlands National Scenic Riverway in New York. The bill calls for authorization of $20 millions to allow the Secretary of the Interior to buy up to 5000 acres and acquire scenic easements in the counties of Rockland, Orange, Putnam, and Westchester to preserve the scenic values of the Highlands area. Storm King Mountain, where the company plans to build its power project, would be protected by the bill. *H.R. 3012* was referred to the House Committee on Interior and Insular Affairs. As reported in the April Magazine, the FPC has granted Consolidated Edison a license to proceed with the Storm King project; Representative Ottinger has indicated his belief that there will be a court challenge of the decision. Scenic Hudson Preservation Conference, which has been in the forefront of conservation opposition to the project, has already applied for rehearings in the case.

During March the Subcommittee on Parks and Recreation of the Senate's Interior and Insular Affairs Committee held public hearings in Washington on two bills to create Assateague Island National Seashore; both bills, *S. 20* and *S. 1121*, were considered at the same time. The two are essentially similar except in regard to road-building. *S. 1121* provides for a road through the proposed seashore and the Chincoteague National Wildlife Refuge; *S. 20* would leave island development to the discretion of the National Park Service. The Interior Department favored *S. 20*. The National Parks Association, presenting its views upon invitation, also favored *S. 20;* it made the point, however, that no roads should be built within either seashore or wildlife refuge, and that there should be a system of public and private water access points to the island.

The Senate has passed *S. 4*, which would amend the Federal Water Pollution Control Act to provide for research into water pollution, and to provide grants for water pollution prevention and abatement. *S. 4* has also been reported favorably by the House Public Works Committee.

S. 22, a bill to promote a more adequate national program of water research, was reported favorably out of the Senate Interior and Insular Affairs Committee during March. *S. 22* would provide Federal funds, and match other funds, for special research in water problems by educational institutions, local, State and Federal agencies, and competent private organizations and individuals.

The youngsters on pages 22 and 23 are: 1, robin; 2, catbird; 3, house sparrow; 4, swamp sparrow; 5, brown thrasher; 6, Bewick's wren. What was your score?

Reviews

HANDBOOK OF APPLIED HYDROLOGY. Ven Te Chow, Editor-in-Chief. McGraw-Hill Books, 330 West 42 Street, New York City. Clothbound, $39.50.

The increasingly important study of water resources technology, chiefly as applied in the United States, has been given the most extensive coverage to date in this book. Water resources technology is a complex branch of physical geography; it deals with the study and utilization of the earth's water. This weighty volume embraces the full hydrological cycle in all its ramifications: from precipitation to surface disposition and return to the atmosphere. The full phases of man's struggle to find and use water for his growing needs is discussed within the limits of present technology in this book. In addition, the book deals with some of the socio-economic aspects of hydrology.

Forty-five contributors prepared the 1404 pages of text for the thirty-nine sections into which the book is divided, and also compiled the numerous figures and tables therein. Each section is followed by a comprehensive list of references to important related works.

A number of subjects dealing with hydrology which are of particular concern to conservationists—and which in the past have been ignored or only touched upon briefly—are treated in this book. The more important of these are "ecological and silvicultural aspects," "hydrology of urban areas," "water resources planning and development," and "water policy." Good content and coverage make the treatment of these subjects interesting.

Changes in water relations that might be brought about to improve water yield while maintaining a satisfactory vegetative cover are only mentioned briefly, since little work has been done on this subject. More adequate information of this nature is needed in view of the growing national concern over future availability of fresh water.

The section on the hydrology of urban areas is directed primarily toward storm water runoff, with only incidental reference to water supply and pollution abatement for urban centers. These two subjects are treated briefly elsewhere in the book. The need for advanced waste treatment to abate pollution in urban areas and for the reuse of treated sewage plant effluent could have been covered more fully.

Water resources planning and development for storage projects is covered in considerable detail. The use of fresh water from natural storage in estuaries and the creation of new supplies by the depollution of contaminated streams is not discussed. The economic evaluation of projects by means of the conventional benefit cost analysis is discussed, but this does not take into account the adverse and sometimes destructive effects upon existing recreational areas, historical landmarks, and other preserves.

The section on water policy indicates that for purpose of water policy, pecuniary evaluation of a large portion of the social benefits and cost attributed to the development and allocation of water resources would be meaningless. These social benefits and costs should, however, be taken into account as much as possible, since water policy objectives affecting the development and allocation of water resources cannot be divorced from the objectives of other social policies, and social welfare criteria are no different in water policy than in other fields.

—Ellery R. Fosdick
Consulting Engineer

TECHNIQUES FOR TEACHING CONSERVATION EDUCATION. By Robert E. Brown and G. W. Mouser. Burgess Publishing Company, 426 South Sixth Street, Minneapolis, Minnesota 55415. 1964. 112 pages, spiral bound in paper cover. $2.00.

Today's generation of conservationists helps to establish new parks, seashores, lakeshores, preserves of many kinds; allies itself with science in alerting humans to the dangers of pesticides uncontrolled or misused, and advertises the implications of excessive human proliferation; it urges the need for salvage of a little remnant of natural environment for the frightening human myriad promised for the future, that the future may not be entirely artificial and wholly unstable. All such effort will be of little avail without a far greater conservation understanding, if not active effort, on the part of the future myriad; it is probably true that today's greatest conservation hope lies in teaching the conservation teachers, who are the trustees of the human future. "Many teachers," say the authors in their preface, "are somewhat at a loss to know both what and how to teach concerning natural resources." The aim of this volume is to resolve so far as possible both of these difficulties.

TALL TREES AND FAR HORIZONS. By Virginia S. Eifert. Dodd, Mead & Co., 432 Park Avenue South, New York City 16. 1965. xii + 301 pp. in cloth. $5.00.

Virginia Eifert has been writing for many years about her own explorations and observations in the natural world, and about the explorations and findings of American and other naturalists of an earlier day. Through the pages of this, her latest book, the men and women who found, studied or classified much of America's plant life wander and search; and, in truth, the lives of these people were in many cases as colorful as the bloom of the plants they found.

Photograph by Ruth Kirk

Climbers stand on one of the three peaks on the Mount Olympus massif in Olympic National Park, high in the world of ice and rock and sky.

SOME PEOPLE LOVE TO HEAR the rustle of beach sand as wave-water drains away into the foamy commotion of breakers, sandpipers ebbing and flowing with the water. Other people escape the commotion of the crowd and the fumes of the street in the chill of a mountain summit. In Washington's Olympic National Park one may savor either the sea or the snowy summit, clean, restful, uncrowded, unspoiled. As America's leading private, nonprofit conservation organization devoted primarily to the welfare of the great national parks and monuments, the National Parks Association helps keep parks like Olympic in their natural condition, free of artificiality and "improvement" of the landscape.

YOU CAN HELP YOUR ASSOCIATION in this work in any of several ways: by contribution to the general funds of the Association over and above regular dues; by helping secure new members; perhaps by remembering the Association in your will. All dues over and above basic annual dues, and all gifts and bequests, are deductible for Federal income gift and estate tax purposes.

National Parks Association

1300 New Hampshire Avenue, N.W. Washington, D.C. 20036