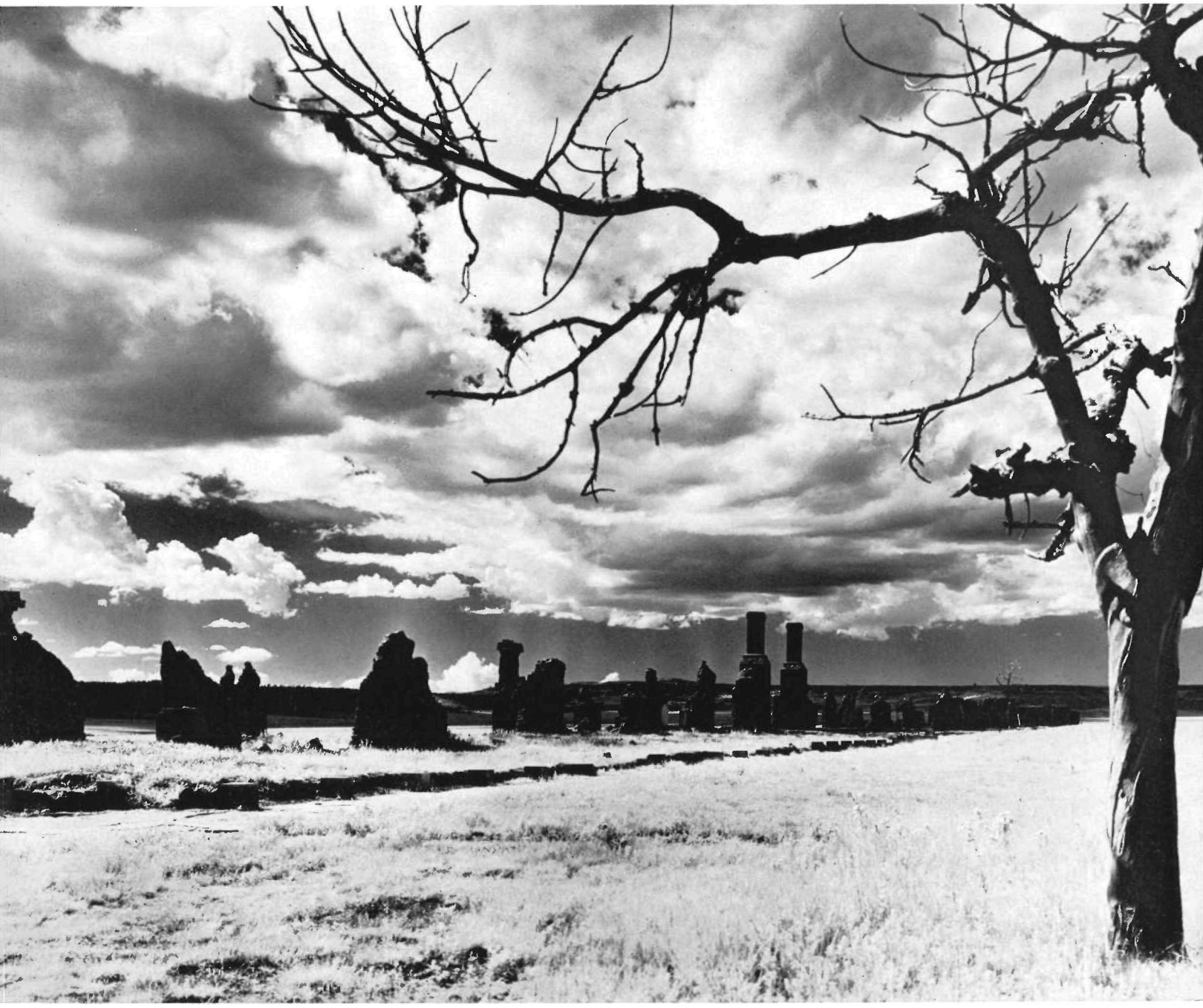
NATIONAL PARKS *Magazine*



Relic of the Santa Fe Trail: Ruins of Officers' Quarters, Fort Union National Monument

March 1962

The Editorial Page

Plain Facts on the Potomac

WE HAVE HAD OCCASION RECENTLY TO argue in these columns that the Corps of Engineers has refused to consider the most significant fact before its eyes in its plans for the Potomac River: the existence of a large body of fresh water at the doorstep of Washington in the Upper Estuary, which will provide for all the City's foreseeable future supplemental water supply needs in periods of low flow, regardless of population growth, if cleansed of pollution.

We reprint elsewhere in this issue, as part of our reportorial function, the views of one of America's great conservationists, Justice William O. Douglas, on this critical point. His analysis would appear to support our conclusions.

Conservationists have an immediate concern with the protection of the C & O Canal National Historical Monument, hopefully one day a national historical park, against substantial submergence beneath the reservoir which would be formed by the proposed River Bend Dam, a major element in the plans of the Corps.

But they have an equal concern with the protection of the natural outdoor environment throughout the Potomac Basin. The dams which the Corps has proposed on tributaries in farming regions would destroy much beautiful rural country. The dams proposed for the higher tributaries would destroy timber and wilderness which we can not afford to sacrifice.

We need a fresh look at all the facts. The truth is that much of this big-dam business is as out of date as an oxcart. The complete purification of all our rivers, as against flushing by big reservoirs, is the first order of the day, and our technological skills are entirely adequate for the task.

Complete purification will entail at least the following: (1) The fullest possible conventional treatment of all sewage, and (2) the distillation of treatment-plant effluents by methods now being perfected for the desalination of salt water.

Thereafter, the completely pure distilled water can be turned back into the river or directly into the water mains of the city, as preferred. The residue of valuable nitrogen salts can be used for fertilizer, as it should be.

We are gratified by reports that the Department of Health, Education, and Welfare intends to pursue a vigorous course of research, experimentation, and pilot plant operation along these lines. It is high time we got going.

Let there be no semantic nonsense about such an approach being uneconomic; no more completely uneconomic attack on water supply and pollution could have been invented than the big-dam approach, with its enormous Federal expenditures and its failure to solve the problem.

There will always be a measure of pollution from surface run-off, harbor shipping, recreational use, and the like, in the waters of a large urban area; but this is a trivial matter and can be handled by conventional filtration and chlorination, which have to be done anyway.

The pure-water approach to the urban water supply problem should be supplemented by the detention-basin system of flood control, watershed protection, and local upstream water supply, pioneered by the Soil Conservation Service, and by an even more vigorous program of agricultural cost-sharing to encourage good farming and forestry practices.

This is an issue which involves much more than the Potomac. It involves a re-orientation of national policies toward full pollution prevention, as against big-dam flushing for handling municipal pollution and municipal water supply. It involves a re-appraisal of the preference rights accorded to the REA cooperatives for hydro-power at Government dams, because the pressures being generated by the co-ops in their narrow interest are distorting our river basin planning, which should be done with a single eye to the general public interest. It involves also a re-examination of the functions of the Corps of Engineers; there is a growing conviction that the Corps is not and never has been qualified for the overall river-basin planning job, and that its proper function is merely to help carry out plans made by an agency better acquainted with broader national policies.

—A.W.S.

The News from Agriculture

THE OUTSTANDING FEATURE OF THE President's recent message on agriculture, from the viewpoint of conservationists, will be his observation that in spite of a 65 million increase in the population of our Nation, anticipated for 1980, our farms, as a result of rapid advances in agricultural technology, will produce all the food we shall need at that time from 50 million fewer acres of cropland.

The message envisions a massive shift in the use of this land into recreation, wildlife, forests, and grazing, and to some extent into urban and industrial uses. These areas have already been providing much of the remaining natural outdoor environment in America; the important thing is to protect them from destruction by poorly planned highways, sprawling developments, ill-conceived reservoirs, and badly located industrial installations. Their shift into conservation uses may well tend to provide such protection, while affording new opportunities for wholesome outdoor recreation which will alleviate the pressures on our national parks and forests; in view of these possibilities, the news from Agriculture is good news.

The President also proposes severe restrictions on agricultural production in the hope of eliminating surpluses and improving farm incomes. We forbear to comment on this portion of the message, except to observe that these restrictive policies can conceivably be eased if sufficient emphasis is placed on a durable shift of cropland into conservation.

A few days earlier, Agriculture Secretary Orville L. Freeman convoked a large conference of conservationists to consider a report by a committee chaired by Dr. George A. Selke, which placed similar emphasis on the need for a changeover of cropland into conservation; the President appears to have accepted this approach. We commend the Secretary and the Selke Committee on the conference and the challenging conservation recommendations of the report.

As we go to press, we receive the long-awaited report of the Outdoor Recreation Resources Review Commission, an admirable document on which we shall comment more fully in later issues; and we await another Presidential message embodying plans for park expansion developed by Interior Secretary Stewart L. Udall. We may be in the midst of a great national awakening as to the importance of the natural outdoor environment for the good life. *—A.W.S.*

Lost, Vicinity Kinzua, Pa.: One Treaty, Rather Old

THERE IS A SMALL TOWN CALLED KINZUA in the upper drainage basin of the Allegheny River in Pennsylvania. It is a place of only some five hundred people; but it may be found on a good road map of the State, close to the line separating Warren County from McKean County, a few miles south of the Pennsylvania-New York border.

At Kinzua, the Corps of Engineers is building a flood control dam on the Alle-

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NATIONAL PARKS *Magazine*

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MARCH 1962 Vol. 36, No. 174

Paul M. Tilden, Editor

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Front Cover Photograph Courtesy National Park Service

THE NATIONAL PARKS AND YOU

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

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

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

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A victim of the bounty hunter is

The Golden Eagle: King of the Bird World

By John J. Stophlet

Conservationists are making a determined effort to halt the slaughter of the golden eagle, an adult specimen of which is pictured below. Persecuted with trap, gun, and poisoned bait, the bird is now almost entirely confined, in the United States, to the remote wilderness areas.

Karl H. Maslowski, from National Audubon Society

FAR ABOVE ARIZONA'S DRAGOON Mountains, a golden eagle appears. I watch enthralled as the great eagle of the West, on seven-foot spread of wings, planes out across the valley. He moves with grace and beauty, his huge wings trapping the warm convection currents rising from the earth, enabling him to keep aloft with little effort. The eagle scans the earth below with sharp, telescopic eyes, searching for prey. The bronze hackles on his head gleam in the sunlight. He is a correlated mass of hollow bones, muscle, tendons, nerves, and feathers in a beautiful, living machine—a marvel of aerodynamics. In the ensuing weeks—spent on a ranch in the shadow of the Dragoons—I had ample opportunity to observe and marvel at a creature which has rightly been called the King of Birds.

* * *

The scene shifts to west Texas. A magnificent golden eagle soars in wide circles above the desert. To the south, shimmering in the heat waves, rise the rugged peaks of the Chisos Mountains. A green strip of vegetation belts the sinuous Rio Grande as it crooks into the Big Bend. Across an invisible line near the mountains, there is sanctuary for golden eagles and all other wildlife in the Big Bend National Park. But, outside of this invisible line, golden eagles are "fair game."

A mile away, two men climb aboard a small airplane. The motor starts, lifting the plane above the yucca and mesquite flats, to roar into the sky. The man sitting beside the pilot is "riding shotgun"—the weapon across his knees, cocked and ready. In a matter of minutes the eagle is sighted and they close in for the kill. The eagle sees the monster approaching and attempts to flee—but eagles are no match for airplanes. There is a blast from the gun. The great wings crumple; blood stains the glossy feathers; the "eagle eye" is glazed. The King is dead.

This tragedy has been enacted for years by the bounty hunters above the plains and mountains of Texas as well as other places in the West. The bounty hunters kill eagles for a profit, collecting twice—once on a bounty paid by the ranchers, and again by selling the skins and feathers to the Indian artifacts industry for conversion into "Indian headdresses" for the tourist trade. The ranchers of west Texas have an organization known as The Big Bend Eagle Club, in which they hire hunters to shoot eagles. One hunter boasted he had killed about 12,000 in 20 years. How many of these might have been immature bald eagles? One hunter hired by the club averages about 1000 eagles a year; and beginning in 1945, he slaughtered 8300 in about seven years. How many thousands have been killed since then? In one four-hour aerial eagle hunt, sixteen of the big birds were destroyed.

The commercialized slaughter of the golden eagle is strongly reminiscent of the wholesale destruction wrought against the American bison—or the passenger pigeon—by the market hunters of times past. No animal—from the polar bear in Alaska to the golden eagle of the Texas plains—can long withstand the concerted and deadly hunting from airplanes that is taking place today. It is a war of extermination against an interesting and valuable member of the wildlife community.

Golden eagle nestling, clothed in fine white down, was hatched after an incubation period of forty-three days. The nest, composed of sticks lined with grasses, weeds and lichens, commonly is built atop a high cliff (as that shown in photograph) or in a tall tree, and the nesting territory defended by a pair of eagles is large, from 20 to 60 square miles.

Golden Eagle in History

The golden eagle is circumpolar in distribution, breeding in the Northern Hemisphere in Europe, Asia, and America. In the long history of mankind the eagle has been the symbol of bold strength and courageous character. The bird appeared on the seal of the King of Ur, in double-headed form in Hittite art, on certain coins of the Mohammedans, and on the flags of Turkoman princes. These eagle symbols were probably derived from forms similar to our native golden eagles as closely allied species are found in the Old World. To the early Greeks the eagle was the messenger of Zeus, and the only bird that dwelt in heaven—a fancy based, perhaps, on the high-flying habits of these great birds. A silver eagle standing on a spear, symbol of power and sovereignty, was placed on military standards and carried into battle by the legions of Rome.

In the Scottish Highlands, where golden eagles have nested since time immemorial, the bird is now completely protected, with severe penalties for its destruction. One of Britain's finest naturalists, Seton Gordon, who has spent a life time studying the golden eagle, has described its home in the Outer Hebrides in his delightful book, *The Golden Eagle: King of Birds*. A

Harry Vern Truman, from National Audubon Society

particularly poignant passage is the following: "One Hebridean haunt of the golden eagle is a deep glen in the island of Harris. A high rock, often dark and grim in driving rain, rises sheer from a loch lonely and unfrequented, and on a small ledge high on this rock the eyrie is placed. The glen is little more than a hundred feet above the Atlantic yet the impression given is of much greater height, for the scenery is grand and Alpine in character. The eagles, as they rise in spirals high above their nesting rock, must in clear weather see the cone of Boreray of St. Kilda on the far Atlantic horizon; they must see the ocean swell break in white spray against the rocky shore of Gasker, nursery of the grey seal. In early summer they must see the snowfields on the Cuillin of Skye across the Minch, faint and nebulous in the far distance. They must often see herds of red deer grazing on the green, grassy slopes beneath them, and note the white forms of the black-faced sheep which also find pasture here."

Seldom Seen in East

In the Eastern United States the golden eagle is rare, despite the fact that Maurice Broun, during twelve autumns at Pennsylvania's Hawk Mountain Sanctuary, saw 651 of these birds migrating south along the Kittatinny Ridge. There is little information on the bird in the East, either past or present. Golden eagles still nested in two or three counties in Maine in 1949. A few pairs are reported breeding in the Appalachians, and the last known nesting in Tennessee's Cumberland Mountains was in 1932.

Dr. Walter R. Spofford, who has studied the golden eagle in the East for more than twenty years, writes in a recent letter: "Since no nests in the northern Appalachians were known from about 1880 until about 1951, it might be thought that they are coming back. But the places I have found are all long occupied, and I believe there have been a few remnant pairs for half a century, and I can't really say there is reason to believe they are coming back as yet. There is more reason to believe they are decreasing, because the wilderness is itself disappearing so fast . . ." So we see that isolation is essential to the welfare of the birds. But to really see the bird in its glory, one must go to the wilderness areas of the Far West.

The home range of the golden eagle in the vastness of the West is usually confined to the wildest mountain ranges. He rides the wind above the wild canyons of the Guadalupes to the shining peaks of the Tetons, and north to the wilderness of Denali. The nesting territory defended by a pair of eagles is large, approximately twenty to sixty square miles in extent. The average area is about the size of a township, thirty-six square miles.

The nests are usually built on cliffs with a far-reaching view of the countryside, but are also frequently built in trees. The aeries are immense structures composed of large sticks with a lining of grasses, weeds, and lichens. In the humid Pacific Coast redwood belt, the nests are more warmly lined with rabbit-fur, soft mosses, and eagle down. In California, nests have been found more than ninety feet up in giant pines and redwoods. Sparrow hawks and western kingbirds sometimes take up housekeeping in the lower parts of the eagle's nest. Although the eggs are usually two, sets of one are common, three are rare, and a set of four has been recorded. Incubation requires forty-three days. The nestlings are covered with white down at birth, and remain in the nest from nine to eleven weeks. There is evidence that the golden eagle does not nest every year; consequently it is a slow breeder, and deserves a full measure of protection.

Of the food of the golden eagle much has been written. Some sixty kinds of animals—from deer and antelope to mice, birds, frogs, and even insects—are taken. Attacks on full-grown deer and antelope by a combined force of two or three eagles seem to be rare indeed—the consensus being that the animals attacked were probably either sick or in an otherwise weakened condition. The fact is that rabbits and rodents—the abundant and available prey of the West—form the staple diet of the great bird. Small mammals are usually caught by chasing them into the open and pouncing on them.

Mr. Stophlet, whose bird studies have led him over a large part of the nation, is no stranger to the pages of this magazine. A former naturalist with the Michigan Audubon Society at its Battle Creek refuge, his main interests lie in wildlife conservation, bird study and photography, and outdoor life.

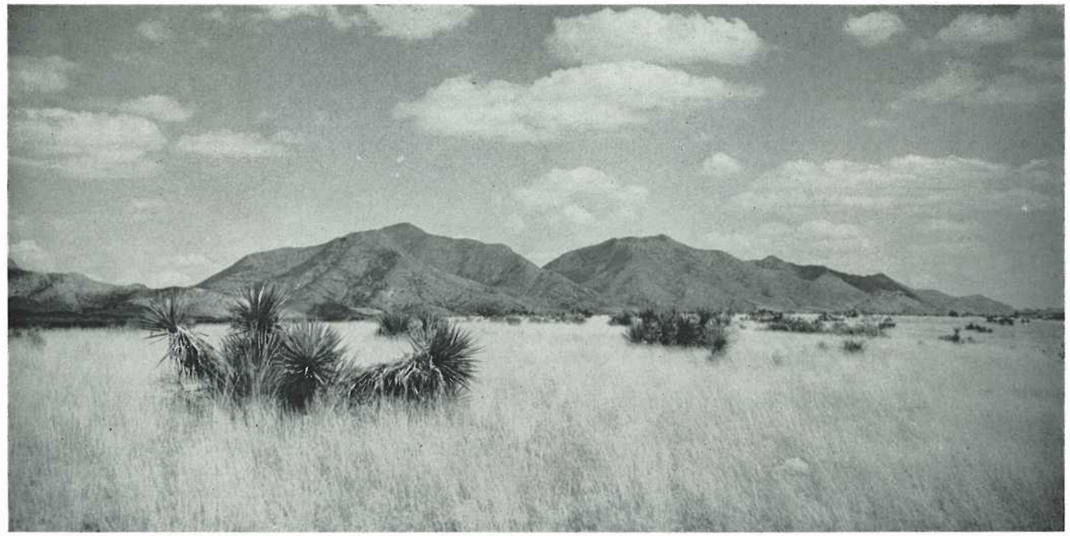
Coordinated Hunting Effort

Arthur Cleveland Bend, in *Life Histories of North American Birds of Prey*, quotes a Mr. Willard, who witnessed another interesting method of capture. "In company with some friends one day, I watched a pair of these eagles hunting jackrabbits. They swooped down and drove the rabbits to cover under a mesquite bush. Then one alighted close by and began to walk toward the rabbit. He was so frightened he dashed from his shelter only to be snatched up by the other eagle which had been hovering close overhead." Porcupines fall prey to the bird at times. One eagle was found dead as a result of an encounter with one of these mammals, stuck full of quills.

In the earlier days of the West, when prairie-dog towns extended from horizon to horizon in certain places, golden eagles had good hunting. More recently, a pair of eagles nesting near one such "dog-town," and feeding two young, consumed more than 600 prairie-dogs in a period of four months. Thus we see the service these birds may perform for both farmer and rancher; they are one of nature's important checkreins on this prolific little rodent.

There is an interesting story of an eagle's "Shangri-la" high in the mountains of Alberta Province, in Canada, known for centuries to the Indians of the region as the Valley of the Eagles. In the caverns of a sheer rock-face golden eagles are said to have built their nests and have formed a colony. If the story is true, this is a most unusual performance, because normally these eagles are solitary birds. Because of deep winter snows, the area is inaccessible until late in the season. One day in August, so the story runs, a man saw twenty-one golden eagles near the cliff. One may hope that the birds will continue to nest and rear young in their wilderness fastness, secure against destruction by man and his machines.

For the golden eagle is a persecuted bird. It is trapped, shot and poisoned throughout the West. It has a price on its golden head. It is when the golden eagle attacks domestic stock of the ranchers that it gets into trouble. There is no doubt that the bird has acquired



The Dragoon Mountains of Arizona, photographed by the author during the summer of 1956, are typical hunting country of the golden eagle. Among some sixty kinds of animals identified in the bird's diet, rabbits and rodents are prominent.

a taste for lamb, but this has been much exaggerated. The eagle's situation is complicated by local conditions such as lambing time, the unavailability of rodents and carrion as food, and many other factors. Eagles that kill stock can be controlled by the proper authorities but these do not include every nimrod in the country. Today, the golden eagle is being gunned down from airplanes in the name of "sport," and under the pretext that all eagles are guilty of killing stock.

Fortunately for the eagle, there is a ground swell against such "sporting" practices and human prejudices. It is gathering momentum fast, and I feel sure it will eventually bring victory to the golden eagle in its fight for survival. Senator Ralph Yarborough of Texas has already introduced a Senate Joint Resolution for federal protection of the golden eagle. It is significant that this legislation has been introduced by a Texan. One would not expect it from this quarter were the eagle such a threat to the livestock industry as some would have us believe.

Hunters Confuse Species

One good argument for complete protection of the golden eagle is the fact that, up to the third year of life of the bald eagle, the two birds are practically indistinguishable in the immature stage even by experts. It is not until the fourth year that the bald eagle acquires the white head and tail. Undoubtedly many immature "baldies" are killed in cases of mistaken identity.

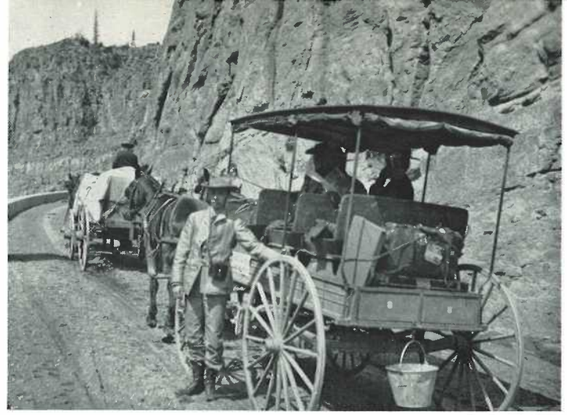
Why do we want to save the golden eagle? One of America's greatest naturalists, Dr. Olaus J. Murie, has stated the answer eloquently: "The fact that we have through the centuries recognized the qualities, the living beauty, of a bird sufficiently to engrave its image on the emblems of our sovereignties, places *us* high in the animal kingdom. A species that can produce a Shakespeare, Rembrandt, Beethoven, Gandhi, and Lincoln should not fail to enrich itself by reaching a friendly hand toward another species in difficulty. There is at stake in this particular instance not only the fate of a great bird, but also the human capacity to tolerate, to appreciate, and to enjoy."

Today, there are many thousands of people who would go far to observe an eagle of any kind. And they have the right to expect the great golden eagle of the West—the living embodiment of freedom—to remain a part of the rich wildlife heritage of this country. They would agree with wise King Solomon that among the many things "too wonderful to understand" is "the way of an Eagle in the air." ■

House Committee Holds Golden Eagle Hearings

On February 6 and 7, 1962, the Fisheries and Wildlife Conservation Subcommittee of the House Committee on Merchant Marine and Fisheries, of which Rep. Frank W. Boykin of Alabama is chairman, held hearings on House Joint Resolution 479, by Representative Conte of Massachusetts, to provide protection for the golden eagle.

This is one of four similar resolutions that have been introduced into the House; all are identical to Senate Joint Resolution 105, introduced in the 87th Congress by Senator Yarborough of Texas, for himself and for Senators Keating, Clark, and Saltonstall. All resolutions would amend the 1940 act for protection of the bald eagle to include the golden eagle.



F. T. Thwaites

Moving south into Yellowstone Park from Gardiner, Montana, the Thwaites party halts momentarily at the Silver Gate, south of Mammoth Hot Springs.

Through Yellowstone and the Tetons—1903

By F. T. Thwaites

In 1903 MY LATE FATHER, R. G. Thwaites, did some work for the advertising department of the Northern Pacific Railroad based upon his publication of the original journals of Lewis and Clark. Part of his pay consisted of passes on that railroad for both him and his family—a kind of reimbursement that made possible a family trip to Yellowstone National Park.

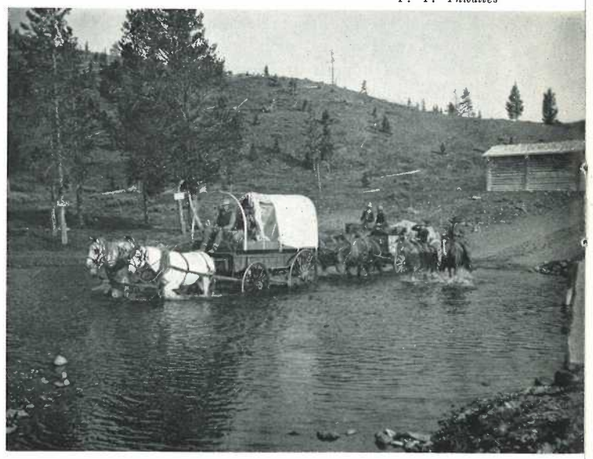
Our camping trip through Yellowstone Park and the country that is now Grand Teton National Park, in 1903, should point up some of the changes that have taken place in the last fifty-eight years in these two regions. My memory of the trip is supplemented by very full notes from my diary.

On the second of July we departed from Madison, Wisconsin, and spent the day in reaching St. Paul, Minnesota. Our party, which included my father and mother and an aunt and an uncle, left St. Paul late in the evening and awoke in the wheat country of North Dakota. Toward night we paused at Glendive, Montana, and my father started to photograph a "typical cowboy" who he found leaning against the station wall. This "cowboy" turned out to be a man from Madison who lived only a few blocks distant from us, and who knew us. Yes, indeed, it is a small world!

The morning of the Fourth of July saw us at Livingston, Montana. The usual wait between trains was enlivened by a walk uptown. Every one of the many saloons was fronted by a crowd of cowboys celebrating the occasion by firing their revolvers—into the air, we hoped, for we had read stories of making visitors dance by properly directed shots. Were they using blanks? I doubt it. While our garb proclaimed us "dudes," the cowboys did not choose to annoy us. Perhaps it was just too early in the day.

Before noon we arrived at Gardiner, where we contacted the guides who had been recommended to us. They proved to be Smith, a retired cowboy, and Clancy, his cook. Then we had to lay in a month's supplies at Hall's store, the only store among fourteen saloons.

F. T. Thwaites



A covered wagon and its supply wagon, with several riders, was photographed by the author crossing Nez Percé Creek, tributary of the Firehole River north of the Lower Geyser Basin.

Purchases completed, we set out for Yellowstone Park. The procession consisted of Smith, driving what was called a "hack," or "carryall," in which our party was seated, Clancy following with a "chuck wagon" which carried all baggage. Cars were not allowed in the park then, and I was most impressed by the bareness, the arid-land vegetation, and the grey rocks. It was an uneventful trip to Mammoth Hot Springs, where my father registered the party at the military headquarters. I do not recall any admission fee.

But here it was discovered that a hub-nut was missing from the chuck wagon. We never found out why, for such nuts are supposed to automatically tighten during travel. We could not help wondering if our guides had not wanted to leave the fourteen saloons at Gardiner. The wagon could not be moved after this discovery, and we camped nearby to await repairs. My uncle and I tried to explore the surrounding country on foot, but we discovered that downed timber from a recent forest fire made that well-nigh impossible.

Next day, the fifth of July, we were treated to one of the common delays of horse travel. The horses went "absent without leave," and despite the pony which was taken along to hunt them down on just such occasions, the party was confined to camp all day. Clancy left to repair our wagon and to retrieve some missing baggage at Gardiner, and about one o'clock Smith finally found our four horses. One of the horses carried a cow-bell to reveal his location; but a hobbled horse can walk somewhat faster than a man, and our guides suggested that when the horses desired to avoid being discovered the belled one would lie down while the others brought him grass to eat!

Next day brought us to the Norris Geyser Basin, where the steam vents were roaring. Camp was made at one of the marked locations which were fixed by water supplies. Sanitary arrangements were nil, and nights were cold. We were pleased by the greater rainfall in the higher parts of the park, but discovered several undesirable features in our equipment while there. The cotton sleeping bags which opened down one side with hooks (zippers had not been invented then) leaked air whenever the wind blew, and absorbed moisture from the ground. The tents had no floor-cloths. Our folding cots were found to be unusable. The "moleskin" suits two of us had ordered from a famous mail-order house—whose catalog was termed the "cowboy's Bible"—proved to have a strong affinity for grease, which we had no means of removing.

We found that Clancy claimed to have once lived in Madison, Wisconsin, which seemed to be verified by what he knew of the town. But we also found that he was normally a gambler, not a cook. We certainly could never have voted him a *good* cook, in any case, because of his free use of lard and tinned butter (which is somewhat different from the refrigerated variety).

Why Clancy the Cook Left Town

It seems that shortly before taking the job with us he was strolling down the main street of Gardiner. There he found the village marshal and a man from Livingston—who was in town to fumigate some houses where there had been smallpox—rolling in the ditch pummeling each other. They had evidently been sampling the wares of most, if not all, of the town's fourteen saloons. From his position on the bottom, the marshal sighted his friend and called out: "Say, Clancy, I deputize you to arrest the fumigator." Clancy pulled out his revolver and tried to do so. However, a deputy sheriff had happened by and had arrested all three, taking them to the new Gardiner jail. After sobering up, the two combatants were discharged, but Clancy had to pay a twenty-five-dollar fine for carrying concealed weapons. Open guns on the belt, such as we saw in Livingston, were legal, but concealed ones were not. This furnished Clancy with an obvious motive for leaving town.

The night of July 7 saw us camped at Nez Percé Creek, just below the Lower Geyser Basin. It should be noted that twenty miles was a good day's travel in this area, for the

F. T. Thwaites

A party crosses a crude foot-bridge across the Firehole River in the Lower Geyser Basin to reach the site of the Excelsior Geyser. This latter, at one time the greatest geyser not only of Yellowstone Park but the world as well, threw a prodigious quantity of water and steam two hundred or more feet into the air. Excelsior ceased playing in 1888.

The Thwaites party registers at the South Entrance army outpost on the Snake River Road, after camping at the West Thumb of Yellowstone Lake. At the Thumb, the party decided, in spite of the protests of the guides, to visit the area that is now within Grand Teton Park.

While encamped on the shores of Jackson Lake, the party was visited by John Dudley Sargeant (below), the Hermit of Jackson Lake. After hiring his boat, the group rowed across the lake to the foot of Mount Moran.

Photograph by R. G. Thwaites, 1903

horses tired quickly in the deep dust of the pulverized lava or "ash." To make it endurable for the two daily convoys of coaches each way, the roads were sprinkled with water. One of the convoys consisted of deluxe coaches which stopped at the hotels, and the other was an economy outfit which accommodated passengers who were tenting.

I will not dwell upon our visit to the Middle and Upper Geyser Basins, but should remark that things then looked much as at present, though without walks, or loudspeakers for the rangers. Old Faithful spouted as she does today, and similarly a small building nearby—then a military outpost—supplied forecasts of the next eruption. The campground was crowded, and actually boasted outdoor toilets. We did not stay, but pushed on to Lone Star Geyser to camp at what was then an approved location. How we suffered in the Basins, with no dark glasses and no place at which to get them!

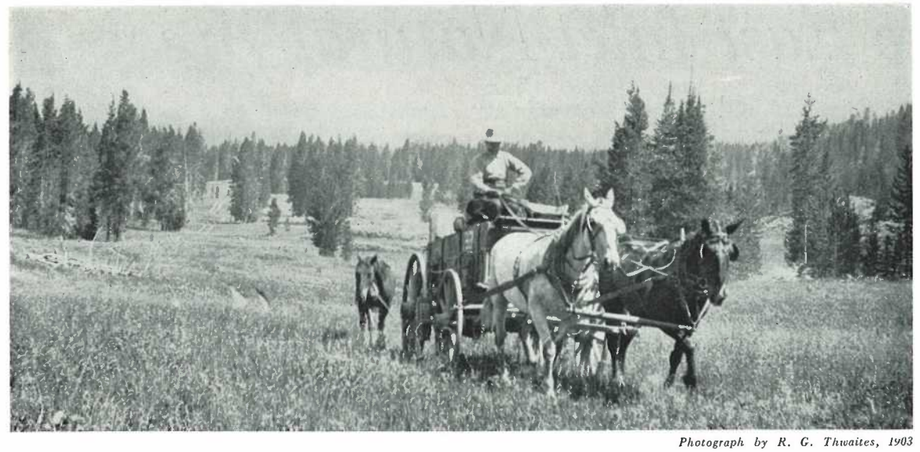
When we reached the Thumb of Yellowstone Lake, our party decided to make a side-trip to Jackson Lake, in what is now Grand Teton National Park. The guides demurred strongly, giving several excuses, one of which was that Jackson Hole had not long before been a resort for outlaws. We won the argument, and started south.

Our first camp was "in a glade with some ponds filled with water lilies and wild rice," my diary says. The ponds were also filled with mosquitoes; but previous experience in northern Wisconsin had made us all inured to these pesty insects.

The road to the south was much below the standard of the circle route around the park, although reported to have been laid out by a survey. Travel on it was slight. Throughout the park circle we met many other campers, and if they were clad in striped sweaters, the guides denominated them Mormons. Some of the campers used covered wagons. Others on the road were hauling in supplies with four- or six-horse teams. A log cabin at the park boundary was the outpost where travellers registered.

It was the twelfth of July when we reached the shores of Jackson Lake. Mosquitoes were much more abundant there than at the higher altitudes, and in one swamp they lit on my father's back so thickly that the color of his shirt was obscured. We camped on a small bay not far from Sargeant's Ranch, and soon were visited by John Dudley Sargeant, the Hermit of Jackson Lake. He was a great talker, very nervous, and obviously an Easterner. He stayed for supper, and offered to rent us his boat for less than the "quarter of a dollar for a quarter of an hour" which he advertised on signs.

The next day, having accepted his offer, we rowed across the lake to the foot of Mt. Moran. Sargeant said that the Grand Teton had never been climbed, despite claims to the contrary, and after looking at the cliffs through field glasses we were inclined to concur. We found that our guides were much afraid of snowfields, although in summer these offer the easiest means of mountain ascent. I might mention that the distances given by our guides were several times those as measured on a map. Once—although not on this trip—we overheard a guide say that he always estimated distances for "dudes" at two or three times what he really thought them to be. He excused this by saying that the dudes would not believe him anyway, and since one went around so many fallen trees and other obstructions it really *was* much farther than a straight line on the map.



Photograph by R. G. Thwaites, 1903

The party chuck-wagon is photographed by the author's father, R. G. Thwaites, four miles south of the Yellowstone Park boundary. The "road" is visible just to the left of the wagon; pony behind the wagon was used for rounding up the horses.

There was one serious annoyance in the Jackson Lake country. The horse-flies were so big and eager that Smith declared he should have brought along a rifle to shoot them. Daily the horses either made a break for home or bucked off whoever tried to capture them—once Smith himself. But was this the only reason why our guides wanted to avoid this country? We secretly wondered.

The Wizard and the Silent Man

At last we started back, and thought to foil the unauthorized homeward tendencies of the horses by camping just south of the Snake River Bridge. We thought we were watching, but several of the horses somehow managed to get across the bridge, and were only headed off on the home side. Two of them actually swam the swift river hobbled, and one of them went under water twice.

At the Snake River Bridge we met two unusual characters who were at that time selling phonographs. They were "Prof." Woodruff, the wizard, and Mr. Baker, the silent man. They were early practitioners of exploits like those of the later Houdini—getting out of jails and handcuffs, making church bells ring at a specified hour, and the like. Learning this, our guide Clancy offered a five-dollar bill to Woodruff to induce the latter to teach him how to escape from the new Gardiner jail. He was able to get out of the old one, he said. While Clancy was absent, the wizard confessed to us that the best way to accomplish such escapes was to slip the man in charge a dollar.

It was the seventeenth of July before we returned to the Thumb, and were ready to start north. We recovered some things left there on the way out. The cots had been sold to other travellers, we hoped with better sleeping equipment than we had. North of the Thumb we passed the locale for another story told to "dudes." The driver of the stage would say: "This road used to be ten miles long but now it's only seven." "Why, I don't see where it's been relocated," a dude would reply. "Naw, they sprinkled it with water from Alum Crick, and that shrunk it up," was the answer. Such yarns, plus black stumps which passed for distant bears, served to break the monotony of the slow travel of those days.

At what is now the Fishing Bridge, we crossed the Yellowstone River to see elk herds in the glades along the new, uncompleted Cody road. Every night we had the same phonograph records, for Prof. Woodruff and Mr. Baker, the phonograph salesman, had attached themselves to our camp. In fact, I still remember the words of one of the songs they repeated many times:

"Oh, why did I leave my little back room in Bloomsberee
Where I could live on a pound a week in luxuree
In my single days it was warm but when I married Marier
I jumped out of the frying pan into the blooming fi-er!"

On the nineteenth a cousin from Madison joined us, having come out from Gardiner by the economy route in only two nights. He came because my uncle and I were to leave the party. Soon after this we "shook" the phonograph salesmen by some maneuvers which are not recorded. On the way back my cousin and I climbed Mt. Bunsen, which overlooks Mammoth Hot Springs, a tiny mountain but the only one in the park I was able to climb.

As for the journey in Yellowstone Park and vicinity, one realizes that today the same distance can be covered in less than three days, with ease. It was to be forty-five years before I, the last survivor of the party, was to see the park again. What changes there have been in the wildlife during this time. One may now see two adult bears working as a team—one in each traffic lane—bears marching down the road in step, or coyotes begging handouts along the road. One wonders what the next half-century will bring forth! ■

The East Inlet Natural Areas

By Tudor Richards

Photographs by the Author

A quiet beaver pond mirrors the old-growth black spruces of a bog above Norton Pool, in New Hampshire's East Inlet Natural Areas, which have been set aside by a large paper company.

This article originally appeared in the Summer, 1960, issue of "Forest Notes," publication of the Society for the Protection of New Hampshire Forests, and appears here, in slightly shortened form, by kind permission of the Society. Mr. Richards, author of the article, is president of the Audubon Society of New Hampshire; his home is in Dublin, N.H.

AMONG THE MOST INTERESTING natural areas in the State of New Hampshire are two which are adjacent to each other, near the extreme northern tip of the State. Together they comprise several hundred acres of virgin forest stretching along the northern shore of one of Pittsburg township's best-known fishing areas, a dammed-up stream called "East Inlet." The lower natural area is a bog, which has an open section that is known as the "Moose Pasture." This has not been cut, except along one edge, most of its timber having been considered unmerchantable.

The upper part is the Norton Pool Natural Area, a magnificent 125-acre remnant of a once more extensive spruce-fir flat. This is the only sizable old growth remnant of a common forest type in the New Hampshire "North Country," and it is especially gratifying that the owner, the St. Regis Paper Company, has recently set it aside as a natural area.

My first trip to East Inlet was in September, 1947, when several thousand acres of the valley were still uncut. Two of us, as a forest survey crew, went by canoe to a point that we could recognize on our aerial photo, and then left for our objective, a sample plot right in the heart of the old growth, near, if not actually in, the present Norton Pool Natural Area.

Having recently moved up from the white pine region to the south, we were not as impressed with the sizes of the trees as with their obvious great age, mast-like form, and close growth. Compared with the few remaining virgin spruce slopes in the White Mountains, these flats, we found, also contained much red spruce, but were different in having an appreciable number of white spruces and a high percentage of balsam firs. Some spots, in fact, contained more fir than spruce; something one is likely to associate more with typical second growth. Many of the firs, however, were only less large than the larger spruces, which ran up to about two feet in diameter at breast height and close to one hundred feet in height. Some of the latter were probably three hundred or more years old.

What impressed us most of all, perhaps, was the thick layer of moss that covered not only the ground itself but all except the most recently felled of the innumerable fallen trees. This has been very well described by Dr. Henry I. Baldwin, who has made several visits to the area in recent years and who was influential in its establishment as a natural area:

"The most characteristic feature of the stand is a complete moss carpet on the forest floor; it is not only an unbroken 'wall to wall' carpet, but its deep luxuriant mass covers everything like a blanket. Countless generations of fallen trees lie beneath it, showing only as ridges. No twig or undergrowth interrupts the moss carpet. One can walk unimpeded and noiseless over the deep spongy surface. A wide variety of fern mosses comprise this cover, with sphagnum occupying the lower pockets. This moss community is a priceless feature of the area, for when the forest is cut the moss disappears."

Plants of the Forest Floor

The most abundant herb of the forest floor is wood sorrel, its delicate pink and white flowers and cloverlike leaves making it one of the most appealing of northern plants. Other conspicuous herbs are bunchberry and clintonia and, in places, the twinflower. Although shrubs are generally few and far between, mountain maple is common in small openings and alder is thick along the streams.

Tiny evergreen seedlings, especially those of balsam fir, are abundant almost everywhere except in the densest shade, many of them growing in rows along the lengths of fallen trees.

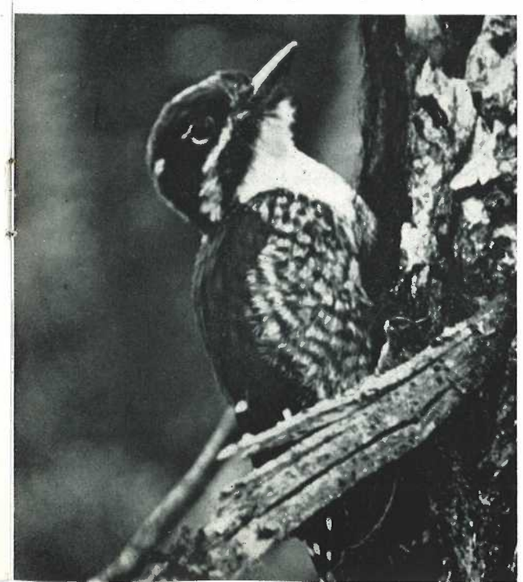
Of perhaps equal interest to the Norton Pool Natural Area is the Moose Pasture bog, immediately to the southwest. Actually the two areas merge into each other in the zone of intermediate drainage, the bog being poorly drained and the flat only a little better drained.

Conservation Officer Fred T. Scott, a naturalist and a resident of Pittsburg, introduced me to the Moose Pasture on a July day ten years ago. It was just a step from where we left the canoe, but once we were inside, in the several acres of open bog, it was as though we were in a different world. We stood on a wet mat of sphagnum moss, overgrown and partially obscured by a dense growth of cassandra and other ericaceous shrubs. Cotton grass was plentiful, and here and there were pitcher plants, some of them in full bloom. In the foreground were scattered black spruces and tamaracks, most of them only a few feet tall and many of the spruces being in clumps. The trees became taller and closer together towards the edge of the open part of the bog, eventually forming a dense forest.

After exploring the bog a bit we returned to the canoe, not choosing to walk through more of the wet terrain. While we found black spruce by far the commonest tree, larger tamaracks and northern white cedars occupied some areas. Unlike the Norton Pool area, this wooded bog turned out to have much undergrowth, the narrow and not very long crowns of the trees not being able to shut out enough light. Mountain holly, wild raisin, winterberry and alder were the most common shrubs.

The two East Inlet natural areas are just as interesting for their wildlife as their vegetation. Although we did not see any moose on that visit to the Moose Pasture, I felt that we should have with any luck. In earlier days moose were probably quite common, and no doubt the woodland caribou occurred there, too, along with timber wolves, their principal predators. With the elimination of wolves many years ago, the white-tailed deer is now able to cope with continuous deep snow except in the worst winters. Moose still occur, however, and at East Inlet are reported every year. Two other mammals that are now rare in New England, but which probably still occur in the East Inlet area are the marten and the Canada lynx. Their respective close relatives, the fisher and the bobcat, are now more common, the former having made a good comeback and the latter having in recent decades largely replaced the Canada lynx, as habitat and other conditions in the North Country have changed. Another recent arrival here is the raccoon, which now occurs at East Inlet. Other important mammals of the area are the black bear, otter, mink, various weasels, red fox, red squirrel, chipmunk, northern flying squirrel, beaver, muskrat, porcupine and snowshoe hare.

In a bog of the "Moose Pasture" the author came across the nest of a northern three-toed woodpecker family, and photographed a young bird only recently off the nest.



Bird Life of the East Inlet Areas

Much more in evidence, except perhaps in certain winters, are the birds, which are in great variety in summer as well as during their migrations in spring, late summer and autumn. Some of the most characteristic, however, are year-round residents. These include the spruce grouse (which is actually less common than the ruffed grouse), the black-backed and northern three-toed woodpeckers, the gray or Canada jay, and the boreal or brown-capped chickadee, as well as other more familiar species. In winter such northern finches as the white-winged crossbill, pine grosbeak and pine siskin may be more common than in summer.

Nevertheless, summer is the most interesting season in the East Inlet area as far as the bird life is concerned, and in recent years ornithologists have come from all over New England and even farther to study it. On that first visit to the Moose Pasture, Mr. Scott and I struck a bonanza. In the wooded part of the bog we discovered the nest of a northern three-toed woodpecker family and photographed a young bird that had just left it. We also saw a pair of gray jays, and heard the beautiful bubbling song of a ruby-crowned kinglet. In the open part of the bog we came across a spruce grouse family, and photographed the mother bird perched on top of a small black spruce only a few feet away from us. Our greatest discovery, however, was a half-dozen pairs of Lincoln sparrows, more than all the birds of this species previously found in New Hampshire at this season put together! Since this sparrow is both shy and obscurely marked, we might have had trouble identifying those we saw except for their musical, trilling songs. Very likely their ancestors had been nesting in that bog for hundreds of years.

Two years later, in early July, Mr. Scott and I made a bird count on a walk of a few hours in the old growth spruce flat above Norton Pool, and recorded more than two hundred singing males, other single birds, pairs or family groups of some thirty-five species. Since we followed

(Continued on page 19)

Clean water for the nation's capital means

Sewage Treatment Plants—Not Dams

By William O. Douglas

The nation's capital belongs, in the larger sense, to all the people of the United States. The welfare of the city and its surroundings—and, in fact, that of the entire river basin in which the city is located—is therefore a matter of concern to all the people. One of the pressing problems faced by the Federal City is that of an adequate supply of pure water, answer to which, most conservationists feel, is a clean Potomac River. In a January 10, 1962, address to the members of the Potomac Chapter, Daughters of the American Revolution, the Honorable William O. Douglas, Associate Justice of the Supreme Court of the United States, spoke of the urgent need for a clean rather than a "flushed" Potomac; flushing is proposed by those advocating high-dam construction on the river. Justice Douglas' remarks before the Daughters of the American Revolution are presented here in full.—Editor.

POLLUTION OF THE POTOMAC RIVER IS the foremost problem confronting all who live in the Washington, D.C., Metropolitan Area. It is also a problem for every citizen who has pride in the nation's capital. The Potomac River, though having some of the charm that George Washington knew, is now a national disgrace. At places it is an open sewer. At points the sewage sludge is ten feet deep on its bottom. The Public Health Service standard for drinking water is a 5000 bacteria count per 100 milliliters. The bacteria count at Great Falls, on the Potomac River, where Washington, D.C. gets most of its drinking water, is about 7000 per 100 milliliters.

The Corps of Army Engineers proposes a high dam at a locality known as River Bend, near Great Falls. Its primary function will be to supply water to wash the sewage down the river. The dam would back the river up forty miles, flooding choice grasslands, farms, and homes of Virginia and Maryland that must be condemned at very high prices. The water level would fluctuate as much as thirty-five feet, for the water flow in the Potomac is irregular. Think how ugly the silted mud banks of that lake would be. Think how awful they would smell. It is said that the water level in the summer months would fluctuate only five feet. A vertical fluctuation of only five feet means much wider margins of mud on the sloping banks of the river. Think how awful even that exposed area would look and smell. Think how dreadful the sight and smell, as the water level continues to go down in fall and winter when recreational needs are still great.

Eighteen communities in the Potomac Basin have no sewage disposal plants and dump raw sewage into the river above Washington, D.C.

There are fifteen communities in the Potomac Basin which have sewage treatment plants but which give only *primary* treatment and thus discharge sewage effluent into the waterways that contains sixty to seventy percent of the original contamination. These fifteen communities are above the Washington Metropolitan Area and discharge their sewage effluent into the river above the District's water intake.

Treatment Not Wholly Effective

Thirty-one communities in the Basin have sewage disposal treatment plants that give complete treatment. Of these thirty-one communities, twenty-two are above the Washington Metropolitan Area. Even when a sewage treatment plant gives so-called complete treatment, it is only seventy to eighty per cent effective. To put the matter another way, a sewage disposal plant which serves 1,000,000 people pollutes the river at least to the extent of raw sewage produced by 300,000 people. So the combination of raw sewage plus sewage effluent heavily contaminates the river.

Sewage consumes oxygen in any water. Silt, by covering up bottom plants in waterways, also tends to reduce the oxygen content of rivers. Sewage plus silt creates a serious problem for any river. Some of our rivers have zero oxygen. Then even the hardiest of fresh water fish—the buffalo fish—leave the water. I have seen fish leave the Potomac and thrash until death on the river's bank.

As the Potomac passes historic Mount Vernon, it is unfit for swimming and too polluted for fish. In warm weather the stench that greets the visitor is appalling.

This is a sorry condition for George Washington's river. It is also a needless condition.

Recently proposals were made to dam Trappe Creek in Worcester County, Maryland. After a study, the Water Pollution Control Commission of Maryland recommended against the dam. The Commission reported that the stream is too heavily polluted by sewage and industrial waste.

The same would be true of the River Bend Dam. The pollution of the Potomac at Great Falls is getting worse with each passing year. The area behind the high dam at River Bend would concentrate this pollution; the lake it would create would be so ugly and so ill-smelling that no one would ever want his name associated with it.

Why then propose it?

The Rural Cooperatives

The chief lobby behind it are the rural cooperatives. In 1937 they obtained a preference to power generated by Bonneville Dam on the Columbia. By the Act of December 22, 1944, this preference was extended to other public power projects. Under this law they will be entitled to priority over the electric energy generated at the proposed River Bend Dam. They want that power for transmission to the eastern shore of Maryland; and they expect to get it at seven mills per kilowatt.

River Bend would produce at most only 90,000 kilowatts, which is not enough to supply steady power levels. It would, in other words, supply only peak power. There is no shortage of power in the Potomac Basin. Private power companies have an overload capacity of about 200,000 kilowatts. The Coordinating Committee on the Potomac River Valley, in a pamphlet entitled *Potomac Prospect* that was published in January, 1961, says that River Bend Dam with a maximum of 90,000 kilowatt capacity would cost the public about $1,540,000 annually.

If the powerful lobby of the rural co-ops obtains the River Bend Dam, it should inherit the wrath of our people. For this River Bend Dam will inundate some of the loveliest valley and river bottom lands in the area and substitute for their beauty the stinking banks of a muddy reservoir. All this for the greedy ends of lobbyists who pretend to march under the banner of conservation and recreation.

The rural co-ops have found a stout ally in the Corps of Army Engineers. It will take a united, concerted movement to defeat the disastrous designs they have in mind for the beautiful Potomac. The rural co-ops call the prospective River Bend Dam a great "showcase" for Washington, D.C. It would be a "showcase" of stench and of ruin and a permanent monument to the co-ops' greed.

Non-Destructive Program Needed

Checci & Company has submitted a report to the Governor of Maryland dated November 13, 1961, endorsing the River Bend Dam. It bases its recommendations on the "economic significance of tourism and recreation," which it says will come from the River Bend Dam. That report proceeds from one fancy hypothesis to another, claiming that millions of people would be attracted to the lake area above the dam and bring millions upon millions of dollars into Maryland. But that report is only a cheap beating of brass. For it overlooks the basic problem, viz., that people would never be attracted to a reservoir surrounded by mud banks that have the stench of sewage on them. It also fails to realize that there exist even greater recreational potentials along the estuary once it is cleaned up; it fails to appreciate the fact that access and facilities are the key to recreational development. A pool eight miles long now exists west of Seneca, Maryland, that can provide the same benefits for recreation that are proposed for a River Bend dam. All that is needed is access and development of facilities. This can be done with no destruction to farms, grasslands, and homes and at a much lower cost.

Some will say, "Let's build the dam *and* clean up the river." But if the river is cleaned up—as it must be—there will be no need for the dam.

The real need of the Metropolitan Area is a stable water supply and a healthy water supply. We can have it now, and in the year 2000 A.D., and in all future years, without any dams—if we will only clean up the Potomac and the Patuxent.

Cleaning Up the River

A nation that can conquer outer space and put a man on the moon certainly should be able to clean up its waterways. This cannot be done overnight. What we need is a full-fledged overall program so that in the near future we can have a clean river. This requires the following:

1. Prohibition of any raw sewage from any source being discharged into the waters of the Potomac Basin.

2. The adoption of sewage disposal systems for all communities in the Potomac Basin so that the so-called complete treatment would be given all sewage in the near future, and a system of treatment which would remove 100 percent of the contamination should be prepared for the next decade or two. The latter is possible by putting the effluent through distillation or other methods that may be developed. It will give our grandchildren, if not our children, a clean and healthy waterway.

If this is done, and there is no reason why it cannot be done at a cost no greater than the cost of the dams which the Army Engineers propose, there will be an abundance of water for all our Metropolitan needs.

The estuary of the river can be divided into two parts: the Lower and Upper. The Lower Estuary extends from Chesapeake Bay to about Indian Head, approximately thirty miles below Little Falls, and is brackish or saline. In time—and probably a shorter time than we now appreciate—economic desaltation will be available. It is being used extensively in Israel today. The town of Freeport, Texas, has desalted water in its entire metropolitan water system. So has a small town in California. So has St. Thomas in the Virgin Islands. The scientific know-how is available. The problem is one of getting the cost lower; and the experts say there is a solution for that which is just around the corner. When that happens, all the estimates of the water needs of the entire country, including the Metropolitan Area of the District of Columbia, will change.

But in the meanwhile we have in the Upper Estuary an abundant supply of potable water, if the river is only cleaned up. The Upper Estuary extends from Indian Head to Little Falls, where a new pumping station has been installed in recent years. This thirty-mile strip of river contains a minimum of seventy-five billion gallons of fresh water. Once the river is cleaned up and restored to the beauty that George Washington knew, we would have a reserve of seventy-five billion gallons of potable water; and that is enough by any estimate to satisfy any use, normal or emergency. Whenever the natural flow of the river above Little Falls became inadequate, the present pumping system need only be shifted to the Upper Estuary.

Flushing Not A Solution

Flushing a dirty river is not the answer to our problem. We need a clean, wholesome playground for the four or five million people who will inhabit the Metropolitan Area. We need clean swimming-holes, waterways for canoeing and boating, picnic sites for old folks. We need a waterfront toward which people will turn their faces, not their backs. We need the esthetic values of the Potomac. We need to preserve the historic shrines scattered along its whole length. We need them as reminders of the men who fashioned the nation. We need these wild lands at our back door so that we, too, can find places for relaxation. Dams are sometimes necessary. If dams were necessary so that people could drink and bathe, all of us would subordinate other desires. But there is no such need on the Potomac.

Selfish interests distort the Potomac picture, making people believe that only dams provide salvation. Dams on the polluted Potomac would bring shame and disgrace to their proponents. Dams on a Potomac that was not polluted would be bad enough. When the pollution is ended, the need for dams disappears both at River Bend and on the several wilderness tributaries upstream from Washington, D.C.

If we are short of electric power, let's build steam plants and put West Virginians back to work mining coal. It is reckless and irresponsible for selfish groups, who have a dollar to gain, to make their profits through destroying the Potomac. But the lobby is a powerful one. If that lobby is to be defeated, all who love the Potomac for its history, its beauty, and the wonders of its islands and white waters must present a united front. ■

News Briefs From the Conservation World

Ice-Age Area Might Be "Scientific Reserve"

Congressman Henry Reuss of Wisconsin has recently approved a National Park Service suggestion that, if established. a geologically significant area in his State be designated the Ice Age National Scientific Reserve instead of a National Park. In a December address to the Optimist Club of Milwaukee, Mr. Reuss indicated that he was more concerned with preserving the outstanding features of continental glaciation in Wisconsin than in debating an exact name for the possible unit.

Should Congressman Reuss' bill be enacted, a new category would be added to the park system. While the cost of land acquisition would be shared equally by the federal government and the State, ownership of the preserve and primary administrative responsibility would lie with State and local governments.

An area of especially fine examples of glacial relics like moraines, "kettles," glacially-impounded lakes and bogs—with their distinctive biotic communities—and other ice-age phenomena was recommended for federal preservation by the Advisory Board on National Parks, Historic Sites, Buildings and Monuments at its September, 1961, meeting in Olympic National Park. At that time the Board indicated that some of the nation's finest examples of continental glaciation are to be found in Wisconsin.

Recent Interior Department Appointments

With the retirement of Charles S. Dunn from the National Park Service, John O. Cook has recently been appointed superintendent of Chickamauga and Chattanooga National Military Park, Georgia-Tennessee. A native of California, Cook has been superintendent of Saguaro National Monument in Arizona since 1958.

The Interior Department has also announced the appointment of Merle E. Stitt, chief park ranger at Lassen Volcanic National Park since 1958, to succeed Floyd A. Henderson as superintendent of Craters of the Moon National Monument, Idaho. Henderson is now supervisory park planner in the Park Service's San Francisco Regional Office.

James C. Rettie, 57, nationally known resource economist and long-time federal career employee, has been named to a newly established position in the Interior Department—that of economic advisor and senior Resources Program Staff economist. A native of Oregon, Mr. Rettie studied at Willamette University in Salem, Oregon; Yale University, and the London School of Economics. He is experienced in the fields of economic research and programming in water and power development, forest and land economics, taxation, resources utilization, and river basin development.

Roosevelt Elk Transplanted To Eastern Home

An interesting experiment back in 1958, fostered by the New York Zoological Society, brought three Roosevelt elk—a bull and two cows—from the Prairie Creek Redwood State Park in California to the Bronx Zoo via the Flying Tiger Airlines. Unlike the previous attempts to establish a transcontinental elk colony, this effort proved a success, as the three elk now number seven, all thriving in their New York home, a wooded section of the Zoo.

Bald Eagle Film Is Now Available

A film on the natural history of the bald eagle is now available for print-sale or rental through the National Audubon Society, of New York City. Entitled "The Bald Eagle—Our National Bird," the film was produced by Cornell University's Laboratory of Ornithology in cooperation with the National Audubon Society, the National Park Service, and the U. S. Fish and Wildlife Service.

This timely film is in full color, runs for thirty-three minutes, and is narrated by Bayard W. Read, a member of the University Laboratory and a recognized authority on eagles. A preview print may be obtained from the Photo and Film Department, National Audubon Society, 1130 Fifth Avenue, New York City 28, New York; sale price per print is $210, and rental fee for a single showing is $7.50.

Second Conversion Plant Commences Operations

The second of five saline water conversion plants authorized by Congress in 1958 is now operating on a test basis in San Diego, California, according to the Interior Department. The first is in Freeport, Texas. Burns and Roe, Inc., of New York City and Santa Monica, California, will manage and operate the plant, which is preparing to sell water to the City of San Diego. A multi-stage flash distillation technique is used by the million-gallon-per-day plant. Water heated to 200° F. is flashed into a series of evaporators at succeedingly lower pressures, producing steam and vapor to be condensed to water. Different techniques will be utilized by the Roswell, New Mexico, Webster, South Dakota, and Wrightsville Beach, North Carolina, installations. The contracts for these three plants have yet to be settled.

The responsibility for the establishment of the sea water conversion plants belongs to the Interior Department's Office of Saline Water, which has recently agreed to act as the clearinghouse for all saline water research being conducted in the nations belonging to the North Atlantic Treaty Organization. The invitation was issued in the form of a recommendation by persons attending the Seventh Annual Conference of NATO Parliamentarians in November, as a result of a paper prepared by the Office of Saline Water for presentation at the Paris conference. Ratification of the recommendation by the United States Senate is still required.

Lost, One Old Treaty

(Continued from page 2)

gheny to create the Allegheny Reservoir, one of the units authorized by the Flood Control Act of 1938 for protection of the city of Pittsburgh. When the reservoir is full, it will create a lake some thirty-five miles long, extending from Kinzua all the way to Salamanca, New York. The lake will inundate an area of some 21,000 acres.

But approximately 9000 acres of the drowned land will lie within the Allegany Reservation of the Seneca Indian Nation; according to a 1794 treaty between the United States and the Senecas, the reservation lands were forever "secured and guaranteed" to the Indians.

The Senecas have protested that they do not want to leave their homes and their ancestral lands in the river valley, in spite of the prospects of reimbursement from condemnation proceedings and government cooperation in finding lands on which to relocate.

The Senecas have suggested a number of alternative flood control plans, paying the costs of engineering studies from their own pockets. Their proposals have been rejected by the Corps as too costly, although probably feasible. The Indians have instituted legal actions at levels up to and including that of the Supreme Court, but to no avail. They have appealed to the President, but the President has declined to interfere. Construction of the Kinzua Dam continues, and its completion is scheduled for 1965.

Many Americans—other than the Senecas—have protested the construction of this dam, feeling that the honor of the United States is too precious a thing to be thus entombed under two hundred-odd feet of earth and concrete in an obscure valley of the Allegheny's upper basin. They find the abrogation of a solemn agreement between the United States and the Seneca Nation a most distasteful thing—an action which seems only to place one more shabby entry on the record of the white man's relations with the American Indian. —*P.M.T.*

Legion Will Purchase Lands For Battle Site

The Maryland Department of the American Legion has recently launched a program by which, as funds are collected, lands will be purchased and donated to the Antietam National Battlefield Site at Sharpsburg, Maryland, according to a recent announcement. In 1890, twenty-eight years after the Battle of Antietam, a twenty-acre commemorative site was established. Since then, through the efforts of various States and the Washington, Maryland, Historical Society, the site has grown to 183 acres. While Congress in 1960 authorized outright purchase of 600 acres with appropriated funds and imposed restrictive covenants on the remainder of the 1,800-acre area of the battlefield, the Legion will seek to purchase lands which would otherwise be excluded, it was said.

Owens Valley Refuge Seen For Tule Elk

A great natural park in the southern part of the Owens Valley of California—present home of the Tule elk and an area of majestic beauty—is the goal of the Committee for the Preservation of the Tule Elk, non-profit organization of Los Angeles dedicated to the protection of one of the world's rarest mammals. The envisaged area lies south of the Tinemaha Reservoir, and comprises some 240 square miles, extending the width of the valley for about thirty-five miles.

The tule elk refuge idea is not a new one, but it has received fresh impetus since the 1960 organization of the Committee, staff and advisory board of which bristle with the names of nationally prominent scientists, conservationists and civic leaders. Chairman of the Committee staff is Rodney Ellsworth, educator, while serving in the same capacity on the advisory board is Horace M. Albright, native of the Owens Valley and former director of the National Park Service.

The diminutive tule elk has had a checkered past, at one time barely escaping the status of "extinct mammal." Its numbers, because of specialized habitat and uncontrolled slaughter, were once reduced to a figure that has variously been described as a single pair to less than ten animals. Today, thanks to generous past protection by Owens Valley ranchers and businessmen, the California State Fish and Game Commission, and conservationists, the little elk numbers 296 (July, 1961, figure—*Ed.*).

According to a recent release by the Committee, memberships and letters of commendation have been received from every part of the country and from some foreign countries, and it was noted that the plight of the tule elk seems to have caught the imagination of scientists and conservationists alike. The release stated that membership in the organization is $2.00 or more, optionally, for two years, and that the Committee has pictures, slides, and other current information on the tule elk available, including Gerhard Bakker's *History of the California Tule Elk*.

Secretary of the organization is Mrs. Tasker L. Edmiston; the address is 5502 Markland Drive, Los Angeles 22, California.

Montana Biologists Endorse Service Elk Reductions

In a recent joint statement, six wildlife biologists of Montana State University announced their support of the National Park Service's present program for dealing with elk overpopulation on the Northern Range of Yellowstone National Park by shooting rather than by transplanting, pointing out that the latter control device offers, in their opinion, no possibility of a satisfactory solution and "merely shifts the problems elsewhere."

The six biologists—Drs. W. L. Pengelly, C. M. Senger, R. D. Taber, P. L. Wright, R. S. Hoffman and G. F. Weisel—also announced their support for elk population control by Park Service personnel rather than by public hunting.

Senate Passes Great Basin Park Bill

Passing the U. S. Senate during the latter part of January on a voice vote was legislation (*S. 1760*, Bible and Cannon) to establish a Great Basin National Park in Nevada. There has been no action on Great Basin in the House of Representatives since the National Parks Subcommittee of the Interior and Insular Affairs Committee held hearings on *H. R. 6873* (Baring) in July, 1961.

Both of these bills call for the inclusion of Lehman Caves National Monument in the proposed park, and both provide for mining and grazing under the general supervision of the Secretary of the Interior.

The Editor's Bookshelf

A NATURALIST IN ALASKA. By Adolph Murie. The Devin-Adair Company, 23 East 26th Street, New York City 10. 1961. 302 pages clothbound. Illustrated in line drawing and halftone. $6.50.

Adolph Murie must be reckoned as being among the relatively few men of science whose writings tower like spires over the current welter of "papers" and other productions which are at the same time so important to a science-oriented world and so dull to the reading lay public. In *A Naturalist in Alaska,* biologist Murie administers a solid dose of scientific fact and observation in words so warm and simple that his readers also find themselves in the vast Alaskan wilderness, observing, measuring, studying, delving into the details of family life, evaluating the conditions under which some of the larger mammals live in a land that is yet relatively untouched by the Great Predator and his works.

The book is illustrated throughout with line drawings by scientist-brother O. J. Murie, and with superb photographs by the author and Charles J. Ott, Park Service employee of McKinley Park, Alaska, whose wildlife photography stands, the reviewer believes, at the very summit of this field. The volume is a fine addition to Devin-Adair's "American Naturalists Series," of which Farida A. Wiley is general editor.

MUSHROOMS OF THE GREAT SMOKIES: A Field Guide to Some Mushrooms and Their Relatives. By L. R. Hesler. The University of Tennessee Press, Knoxville, Tennessee. 1960. 289 pages, illustrated, with glossary, bibliography, and index. Clothbound, $5.50.

Among the living things preserved within our national parks and monuments that are known but casually by most of the yearly millions of park visitors are the representatives of the tremendous division of plants called the Thallophyta —the mushrooms and their myriad close relatives such as the molds, mildews, earth-stars, and others.

Because of its ample rainfall, heavy and diverse tree cover, and wide range of temperatures and geological conditions, the mushroom and other fungus population of Great Smoky Mountains National Park is extraordinarily great; the number of different funguses collected and identified to date stands at around the two-thousand mark. Many of these are pictured and described in this excellent and conveniently-sized field guide; while it is addressed primarily to the funguses of Great Smokies Park, the book is hardly hemmed by park boundaries. It would seem equally valuable in most other parts of the country as well.

FOLIAR FEEDING: A Milestone in Plant Nutrition. Extracts from *The Contribution of Atomic Energy to Agriculture.* Ra-Pid-Gro Corporation, Dansville, New York. 16 pages and cover.

Readers of this magazine who garden, raise fruit trees, or are otherwise botanically inclined will be interested in the recent proof, through radioactive isotope techniques, of the ability of plants to absorb nutriment not only by root but also by foliage, fruit, twig, trunk, and even flower.

This pamphlet is a record of the testimony of Dr. H. B. Tukey, distinguished American horticultural scientist, before the Research and Development Subcommittee of the Joint Congressional Committee on Atomic Energy, on the subject of foliar feeding. The notion that plants receive part of their diets otherwise than by root is not a new one; this has been suggested on occasion for at least several hundreds of years. Dr. Tukey, however, discusses the implications of the phenomenon's scientific proof for modern agriculture.

It might be said further that, while this pamphlet is an advertising vehicle for the publisher, a fertilizer company, it is advertising that is both inoffensive and educational, devoid of blatancy and and tiring repetition of "the message." It is perhaps the more effective—on plant enthusiasts, at least—for these reasons. Copies may be obtained from Foliar Feeding, Ra-Pid-Gro Corp., Dansville, New York.

WAWONA'S YESTERDAYS. By Shirley Sargent. Yosemite Natural History Association, Yosemite National Park, California. 1961. 40 pages, with chronology and bibliography. Illustrated in black and white.

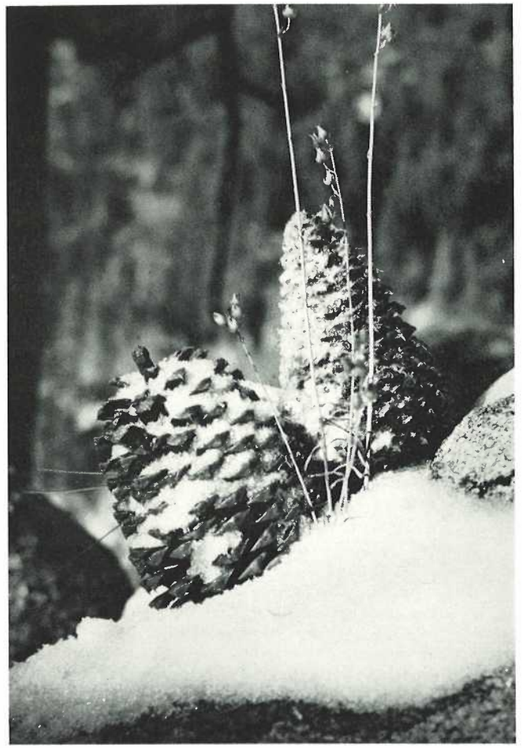
Between 1890 and 1914, United States soldiers were the rangers of Yosemite Park. Wawona, also known as Clark's Station, was their headquarters. This is a colorful account of Wawona's history during and after military occupation.

THE GREAT SWAMP. Edited by George Porter. North American Wildlife Foundation, Washington, D. C. 10 pages in large format with interleaves. Illustrated in black and white.

A beautifully illustrated presentation of the threats confronting the Great Swamp of New Jersey's Passaic Valley, a biological area of great wealth and last remaining large open space in eastern Morris County, less than thirty miles from metropolitan New York. Led by the Great Swamp Committee of the North American Wildlife Foundation, a great effort is under way to establish nearly half of the Swamp as a National Wildlife Refuge.

PINE CONES AND SNOW

Yosemite National Park



A Photograph by Nora R. Klynjan

East Inlet Natural Areas

(Continued from page 13)

the main stream, the list included a disproportionate number of edge-loving birds such as the yellow-throat, redstart and white-throated sparrow, but evergreen-lovers were still preponderant. Virgin forests are not always the biological deserts that some "experts" insist they are.

In conclusion, it should be emphasized that forested areas still in their "original" natural state are now very scarce in the eastern United States, and good examples of as many types as possible should be given full protection for all time. Perhaps the greatest potential values of the best that remain are as scientific study areas with which foresters, ecologists, botanists, zoologists and interested laymen can compare the many kinds and degrees of artificial conditions that make up most of our landscape today.

Natural areas may be useful in studies of such things as timber growth, water runoff, soil fertility and wildlife populations. As outdoor "living museums" they are the best possible examples of natural communities in which plants and animals live together under more or less balanced conditions. Once destroyed, they can never be duplicated —at least, not in less than several hundred years.

Those wishing to visit the Norton Pool Natural Area or the Moose Pasture should get in touch with Mr. Fred Cowan, resident manager of the St. Regis Paper Company, West Stewartstown, New Hampshire. Mr. Fred Scott, of Back Lake, Pittsburg, or Mr. Harry Scott, of Idlewilde Camp, Second Lake, Pittsburg, would be glad to help direct visitors to these areas. ■

Florida State News Bureau

Everglades National Park
Florida