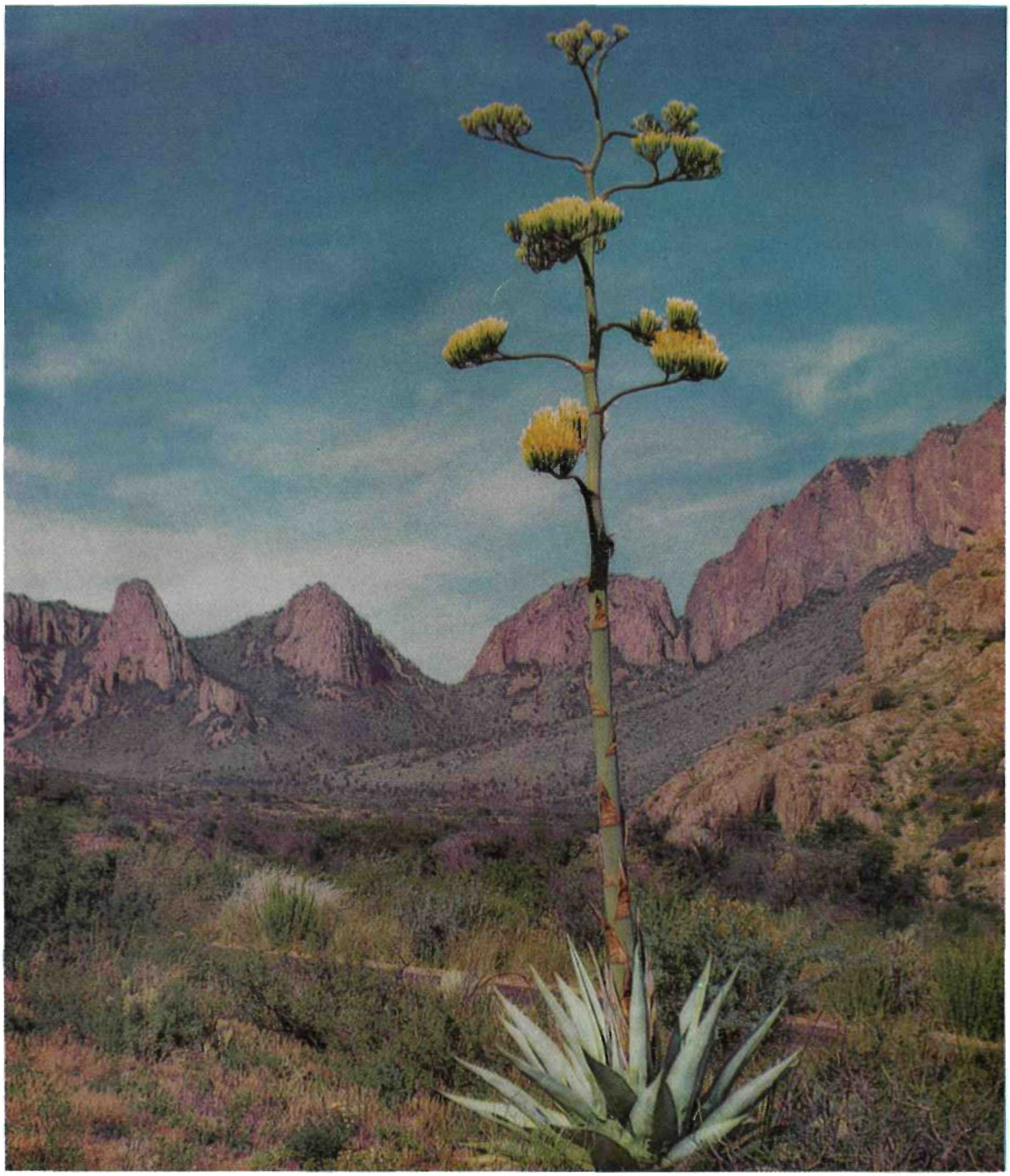
NATIONAL PARKS *Magazine*



Agave, or Century Plant
Big Bend National Park, Texas

October 1962

The Editorial Page

This Pesticide Business

THE WILDLY IRRESPONSIBLE ABUSE of insecticides and herbicides which has been drenching this country in poison the last few years has now become a topic of heated controversy. Rachel Carson's much-heralded book, *Silent Spring*, a courageous exposure, bears the publication date September 27; the author will speak under the auspices of the National Parks Association at the Smithsonian Institution Auditorium in the city of Washington on October 2; excerpts from the book have already been published in *The New Yorker Magazine;* a large portion of a chapter appears in the present issue of this Magazine.

The morning chorus of the birds is being silenced. The magnificent displays of summer and autumn flowers along our roadsides are being destroyed. The wild animals in our forests, and even our own livestock, are being poisoned and sterilized. We may well be tampering with human genes and chromosomes.

Some of the chemicals may be so lethal that they should be stowed away for good; others doubtless have their uses, but should be better understood and more severely controlled. Our greatest enemy, as always, will be the fatuous assumption that all technical advance is good. Let us turn the complete light of full publicity on this subject, and then let us find the moral stamina as a nation to bring these abuses under salutary discipline.

—*A.W.S.*

The Price of Brainwash

SINCE THE WORD "BRAINWASH" IS not listed in the pages of Webster's—at least, not in our edition—the editorial office of your Magazine is not sure whether this word, lately so well established in the popular vocabulary, is a verb, noun, or perhaps both. For all we know, brainwash may be a commodity that can be bought by the gallon, like maple syrup or gasoline. If this is so, the Corps of Engineers has recently fallen heir to seventy-five thousand dollars' worth of the mysterious liquid—enough to apply at least one coat to the cranial contents of every man, woman and child in the Potomac River Basin.

Past issues of this Magazine have brought our readers' attention, through editorials and articles, to the expansive plans of the Corps for damming the Potomac River and its tributaries in the interest of adequate future water for the nation's capital. It has been pointed out that the city of Washington has a well-nigh inexhaustible supply of fresh water before its very eyes—in the estuary of the Potomac—were it to make the effort to clean and use it. It has also been stressed that the Big Dam approach to adequate water, whether for Washington or elsewhere, is largely archaic in the light of modern technological knowledge.

Nevertheless, at the request of the Corps, the Appropriations Committee of the House of Representatives has included an item of $75,000 in the public works appropriations bill for fiscal year 1963 for "backup data" with which the Corps may support the findings of, and presumably ward off public challenges to, its forthcoming master plan for "development" of the 15,000-square-mile Potomac River Basin.

Conservationists and other interested persons will be curious, we think, to know more about the "backup data" of the Corps. Until they do, they may logically suspect that backup data may prove to be—in this instance, at least—one of the ingredients of that mysterious liquid called "brainwash."

—*P.M.T.*

The 1962 Special Educational Issue of the Magazine

WITH THE THOUGHT THAT TOMORROW'S trusteeship of our country's natural resources—its soils, waters, forests, wildlife, and parks and preservations of all kinds will be passed to those now in our schools and colleges, the National Parks Association annually designs an issue of its Magazine as an aid to teachers; those key persons who are in the best position to emphasize the need for all those practices which collectively constitute the national conservation effort.

The next issue of the Magazine—that for November, 1962—will be titled a special educational issue, designed especially to assist the teacher in furthering student knowledge of conservation and preservation matters, and in suggesting methods by which conservation education may be made effective.

The Magazine will be available for distribution to teachers, institutions and libraries on the "free or inexpensive material" basis as in the past, and will be priced at 15¢ per copy or 3 copies for 30¢, with special prices for larger quantities.

A Bit of Western Shore Is Set Aside

THE MONTH OF AUGUST BROUGHT with it an event gratifying to conservationists the country over; the final approval by Congress of a bill authorizing a Point Reyes National Seashore on the beautiful Pacific Ocean side of Marin County, California, thus assuring public protection for another bit of the nation's few remaining miles of

(*Continued on page 17*)

LATE NEWS ITEM

Lumber Industry Reported to Be Sharpening Axes For Campaign Against Forest Service

Reliable reports reach us as we go to press that lumber industry representatives met in Chicago on June 14 to map an all-out campaign against the Forest Service with a view to increasing the allowable timber cut in the national forests and reducing the price of stumpage sharply. It is said that programs will be organized in communities receiving a percentage of gross returns from national forest harvests and in the districts of key Congressmen and Senators. The pretext will be that forest products are meeting stiff competition from substitutes and that the communities and industries must have heavy Government subsidy by this method if they are to survive. There will also be heavy pressure to open the few remaining old-growth stands, such as the beleaguered Minam River Basin in Oregon. We would be happy to receive comments from the industry.

NATIONAL PARKS *Magazine*

OFFICIAL PUBLICATION OF THE NATIONAL PARKS ASSOCIATION

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Paul M. Tilden, Editor

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Front cover photograph by Lucile Dunn

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Beyond the Dreams of the Borgias

By Rachel Carson

This article is excerpted from a chapter of the book entitled SILENT SPRING, *published during September by Houghton Mifflin Company, Boston, Massachusetts. It appears here by permission of author and publisher.*

SO THOROUGHLY HAS THE AGE OF poisons become established that anyone may walk into a store and, without questions being asked, buy substances of far greater death-dealing power than the medicinal drug for which he may be required to sign a "poison book" in the pharmacy next door. A few minutes' research in any supermarket is enough to alarm the most stouthearted customer—provided, that is, he has even a rudimentary knowledge of the chemicals presented for his choice.

If a huge skull and crossbones were suspended above the insecticide department the customer might at least enter it with the respect normally accorded death-dealing materials. But instead the display is homey and cheerful, and, with the pickles and olives across the aisle and the bath and laundry soaps adjoining, the rows upon rows of insecticides are displayed. Within easy reach of a child's exploring hand are chemicals in *glass* containers. If dropped to the floor by a child or careless adult everyone nearby could be splashed with the same chemical that has sent spraymen using it into convulsions. These hazards of course follow the purchaser right into his home. A can of a mothproofing material containing DDD, for example, carries in very fine print the warning that its contents are under pressure and that it may burst if exposed to heat or open flame. A common insecticide for household use, including assorted uses in the kitchen, is chlordane. Yet the Food and Drug Administration's chief pharmacologist has declared the hazard of living in a house sprayed with chlordane to be "very great." Other household preparations contain the even more toxic dieldrin.

Use of poisons in the kitchen is made both attractive and easy. Kitchen shelf paper, white or tinted to match one's color scheme, may be impregnated with insecticide, not merely on one but on both sides. Manufacturers offer us do-it-yourself booklets on how to kill bugs. With push-button ease, one may send a fog of dieldrin into the most inaccessible nooks and crannies of cabinets, corners, and baseboards.

If we are troubled by mosquitoes, chiggers, or other insect pests on our persons we have a choice of innumerable lotions, creams, and sprays for application to clothing or skin. Although we are warned that some of these will dissolve varnish, paint, and synthetic fabrics, we are presumably to infer that the human skin is impervious to chemicals. To make certain that we shall at all times be prepared to repel insects, an exclusive New York store advertises a pocket-sized insecticide dispenser, suitable for the purse or for beach, golf, or fishing gear.

Routine Use of Poisons

We can polish our floors with a wax guaranteed to kill any insect that walks over it. We can hang strips impregnated with the chemical lindane in our closets and garment bags or place them in our bureau drawers for a half-year's freedom from worry over moth damage. The advertisements contain no suggestion that lindane is dangerous. Neither do the ads for an electronic device that dispenses lindane fumes—we are told that it is safe and odorless. Yet the truth of the matter is that the American Medical Association considers lindane vaporizers so dangerous that it conducted an extended campaign against them in its *Journal*.

The Department of Agriculture, in a *Home and Garden Bulletin*, advises us to spray our clothing with oil solutions of DDT, dieldrin, chlordane, or any of several other moth killers. If excessive spraying results in a white deposit of insecticide on the fabric, this may be removed by brushing, the Department says, omitting to caution us to be careful where and how the brushing is done. All these matters attended to, we may round out our day with insecticides by going to sleep under a mothproof blanket impregnated with dieldrin.

Gardening is now firmly linked with the super poisons. Every hardware store, garden-supply shop, and supermarket has rows of insecticides for every conceivable horticultural situation. Those who fail to make wide use of this array of lethal sprays and dusts are by implication remiss, for almost every newspaper's garden page and the majority of the gardening magazines take their use for granted.

So extensively are even the rapidly lethal organic phosphorus insecticides applied to lawns and ornamental plants that in 1960 the Florida State Board of Health found it necessary to forbid the commercial use of pesticides in residential areas by anyone who had not first obtained a permit and met certain requirements. A number of deaths from parathion had occurred in Florida before this regulation was adopted.

Little is done, however, to warn the gardener or homeowner that he is handling extremely dangerous materials. On the contrary, a constant stream of new gadgets makes it easier to use poisons on lawn and garden—and increase the gardener's contact with them. One may get a jar-type attachment for the garden hose, for example, by which such extremely dangerous chemicals as chlordane or dieldrin are applied as one waters the lawn. Such a device is not only a hazard to the person using the hose; it is also a public menace. The *New York Times* found it necessary to issue a warning on its garden page to the effect that unless special protective devices were installed poisons might get into the water supply by back siphonage. Considering the number of such devices that are in use, and the scarcity of warnings such as this, do we need to wonder why our public waters are contaminated?

High Cost of a Lawn

As an example of what may happen to the gardener himself, we might look at the case of a physician—an enthusiastic spare-time gardener—who began using DDT and then malathion on his shrubs and lawn, making regular weekly applications. Sometimes he applied the chemicals with a hand spray, sometimes with an attachment to his hose. In doing so, his skin and clothing were often soaked with spray. After about a year of this sort of thing, he suddenly collapsed and was hospitalized. Examination of a biopsy specimen of fat showed an accumulation of 23 parts per million of DDT. There was extensive nerve damage, which his physicians regarded as permanent. As time went on he lost weight, suffered extreme fatigue, and experienced a peculiar muscular weakness, a characteristic effect of malathion. All of these persisting effects were severe enough to make it difficult for the physician to carry on his practice.

Besides the once-innocuous garden hose, power mowers also have been fitted with devices for the dissemination of pesticides, attachments that will dispense a cloud of vapor as the home-owner goes about the task of mowing his lawn. So to the potentially dangerous fumes from gasoline are added the finely divided particles of whatever insecticide the probably unsuspecting suburbanite has chosen to distribute, raising the level of air pollution above his own grounds to something few cities could equal.

Yet little is said about the hazards of the fad of gardening by poisons, or of insecticides used in the home; warnings on labels are printed so inconspicuously in small type that few take the trouble to read or follow them. An industrial firm recently undertook to find out just *how* few. Its survey indicated that fewer than fifteen people out of a hundred of those using insecticide aerosols and sprays are even aware of the warnings on the containers.

The mores of suburbia now dictate that crabgrass must go at whatever cost. Sacks containing chemicals designed to rid the lawn of such despised vegetation have become almost a status symbol. These weed-killing chemicals are sold under brand names that never suggest their identity or nature. To learn that they contain chlordane or dieldrin one must read exceedingly fine print placed on the least conspicuous part of the sack. The descriptive literature that may be picked up in any hardware- or garden-supply store seldom if ever reveals the true hazard involved in handling or applying the material. Instead, the typical illustration portrays a happy family scene, father and son smilingly preparing to apply the chemical to the lawn, small children tumbling over the grass with a dog.

THE QUESTION OF chemical residues on the food we eat is a hotly debated issue. The existence of such residues is either played down by the industry as unimportant or is flatly denied. Simultaneously, there is a strong tendency to brand as fanatics or cultists all who are so perverse as to demand that their food be free of insect poisons. In all this cloud of controversy, what are the actual facts?

It has been medically established that, as common sense would tell us, persons who lived and died before the dawn of the DDT era (about 1942), contained no trace of DDT or any similar material in their tissues. Samples of body fat collected from the general population between 1954 and 1956 averaged from 5.3 to 7.4 parts per million of DDT. There is some evidence that the average level has risen since then to a consistently higher figure, and individuals with occupational or other special exposures to insecticides of course store even more.

An All-Pervading Chemical

Among the general population with no known gross exposures to insecticides it may be assumed that much of the DDT stored in fat deposits has entered the body in food. To test this assumption, a scientific team from the United States Public Health Service sampled restaurant and institutional meals. *Every meal sampled contained DDT.* From this the investigators concluded, reasonably enough, that "few if any foods can be relied upon to be entirely free of DDT."

The quantities in such meals may be enormous. In a separate Public Health Service study, analysis of prison meals disclosed such items as stewed dried fruit containing 69.6 parts per million and bread containing 100.9 parts per million of DDT!

In the diet of the average home, meats and any products derived from

animal fats contain the heaviest residues of chlorinated hydrocarbons. This is because these chemicals are soluble in fat. Residues on fruits and vegetables tend to be somewhat less. These are little affected by washing—the only remedy is to remove and discard all outside leaves of such vegetables as lettuce or cabbage, to peel fruit and to use no skins or outer covering whatever. Cooking does not destroy residues.

Milk is one of the few foods in which no pesticide residues are permitted by Food and Drug Administration regulations. In actual fact, however, residues turn up whenever a check is made. They are heaviest in butter and other manufactured dairy products. A check of 461 samples of such products in 1960 showed that a third contained residues, a situation which the Food and Drug Administration characterized as "far from encouraging."

The Last Frontier

To find a diet free from DDT and related chemicals, it seems one must go to a remote and primitive land, still lacking the amenities of civilization. Such a land appears to exist, at least marginally, on the far Arctic shores of Alaska—although even there one may see the approaching shadow. When scientists investigated the native diet of the Eskimos in this region it was found to be free from insecticides. The fresh and dried fish; the fat, oil, or meat from beaver, beluga, caribou, moose, oogruk, polar bear, and walrus; cranberries, salmonberries and wild rhubarb all had so far escaped contamination. There was only one exception—two white owls from Point Hope carried small amounts of DDT, perhaps acquired in the course of some migratory journey.

When some of the Eskimos themselves were checked by analysis of fat samples, small residues of DDT were found (0 to 1.9 parts per million). The reason for this was clear. The fat samples were taken from people who had left their native villages to enter the United States Public Health Service Hospital in Anchorage for surgery. There the ways of civilization prevailed, and the meals in this hospital were found to contain as much DDT as those in the most populous city. For their brief stay in civilization the Eskimos were rewarded with a taint of poison.

The fact that every meal we eat carries its load of chlorinated hydrocarbons is the inevitable consequence of the almost universal spraying or dusting of agricultural crops with these poisons. If the farmer scrupulously follows the instructions on the labels, his use of agricultural chemicals will produce no residues larger than are permitted by the Food and Drug Administration. Leaving aside for the moment the question whether these legal residues are as "safe" as they are represented to be, there remains the well-known fact that farmers very frequently exceed the prescribed dosages, use the chemical too close to the time of harvest, use several insecticides where one would do, and in other ways display the common human failure to read the fine print.

The supermarket insecticide display is homey and cheerful, and glass jars of chemicals are within easy reach of a child's exploring hand.

Even the chemical industry recognizes the frequent misuse of insecticides and the need for education of farmers. One of its leading trade journals recently declared that "many users do not seem to understand that they may exceed insecticide tolerances if they use higher dosages than recommended. And haphazard use of insecticides on many crops may be based on farmers' whims."

The files of the Food and Drug Administration contain records of a disturbing number of such violations. A few examples will serve to illustrate the disregard of direction: a lettuce farmer who applied not one but eight different insecticides to his crop within a short time of harvest, a shipper who had used the deadly parathion on celery in an amount five times the recommended maximum, growers using endrin—most toxic of all the chlorinated hydrocarbons—on lettuce although no residue was allowable, spinach sprayed with DDT a week before harvest.

There are also cases of chance or accidental contamination. Large lots of green coffee in burlap bags have become contaminated while being transported by vessels also carrying a cargo of insecticides. Packaged foods in warehouses are subjected to repeated aerosol treatments with DDT, lindane, and other insecticides, which may penetrate the packaging materials and occur in measurable quantities on the contained foods. The longer the food remains in storage, the greater the danger of contamination.

To the question "But doesn't the government protect us from such things?" the answer is, "Only to a limited extent." The activities of the Food and Drug Administration in the field of consumer protection against pesticides are severely limited by two facts. The first is that it has jurisdiction only over foods shipped in interstate commerce; foods grown and marketed within a State are entirely outside its sphere of authority, no matter what the violation. The second and critically limiting fact is the small number of inspectors on its staff—fewer than 600 men for all its varied work. According to a Food and Drug official, only an infinitesimal part of the crop products moving in interstate commerce—far less than 1 per cent—can be checked with existing facilities, and this is not enough to have statistical significance. As for food produced and sold within a State, the situation is even worse, for most States have woefully inadequate laws in this field.

How Much Is Too Much?

The system by which the Food and Drug Administration establishes maximum permissible limits of contamination, called "tolerances," has obvious defects. Under the conditions prevailing it provides mere paper security and promotes a completely unjustified impression that safe limits have been established and are being adhered to. As to the safety of allowing a sprinkling of poisons on our food—a little on this, a little on that—many people contend, with highly persuasive reasons, that no poison is safe or desirable on food. In setting a tolerance level the Food and Drug Administration reviews tests of the poison on laboratory animals and then establishes a maximum level of contamination that is much less than required to produce symptoms in the test animal. This system, which is supposed to ensure safety, ignores a number of important facts. A laboratory animal, living under controlled and highly artificial conditions, consuming a given amount of a specific chemical, is very different from a human being whose exposures to pesticides are not only multiple but for the most part unknown, unmeasurable, and uncontrollable. Even if 7 parts per million of DDT on the lettuce in his luncheon salad were "safe," the meal includes other foods, each with allowable residues, and the pesticides on his food are, as we have seen, only a part, and possibly a small part, of his total exposure. This piling up of chemicals from many different sources creates a total exposure that cannot be measured. It is meaningless, therefore, to talk about the "safety" of any specific amount of residue.

The Need For Information

And there are other defects. Tolerances have sometimes been established against the better judgment of Food and Drug Administration scientists, or they have been established on the basis of inadequate knowledge of the chemical concerned. Better information has led to later reduction or withdrawal of the tolerance, but only after the public has been exposed to admittedly dangerous levels of the chemical for months or years. This happened when heptachlor was given a tolerance that later had to be revoked. For some chemicals no practical field method of analysis exists before a chemical is registered for use. Inspectors are therefore frustrated in their search for residues. This difficulty greatly hampered the work on the "cranberry chemical," aminotriazole. Analytical methods are lacking, too, for certain fungicides in common use for the treatment of seeds—seeds which, if unused at the end of the planting season, may very well find their way into human food.

In effect, then, to establish tolerances is to authorize contamination of public food supplies with poisonous chemicals in order that the farmer and the processor may enjoy the benefit of cheaper production—then to penalize the consumer by taxing him to maintain a policing agency to make certain that he shall not get a lethal dose. But to do the policing job properly would cost money beyond any legislator's courage to appropriate, given the present volume and toxicity of agricultural chemicals. So in the end the luckless consumer pays his taxes but gets his poisons regardless.

Strict Controls Needed

What is the solution? The first necessity is the elimination of tolerances on the chlorinated hydrocarbons, the organic phosphorus group, and other highly toxic chemicals. It will immediately be objected that this will place an intolerable burden on the farmer. But if, as is now the presumable goal, it is possible to use chemicals in such a way that they leave a residue of only 7 parts per million (the tolerance for DDT), or of 1 part per million (the tolerance for parathion), or even of only 0.1 part per million as is required for dieldrin on a great variety of fruits and vegetables, then why is it not possible, with only a little more care, to prevent the occurrence of any residues at all? This, in fact, is what is required for some chemicals such as heptachlor, endrin, and dieldrin on certain crops. If it is considered practical in these instances, why not for all?

Prospective status symbol of suburbia is the colorful sack of chemical designed to rid the lawn of such degrading plants as crabgrass.

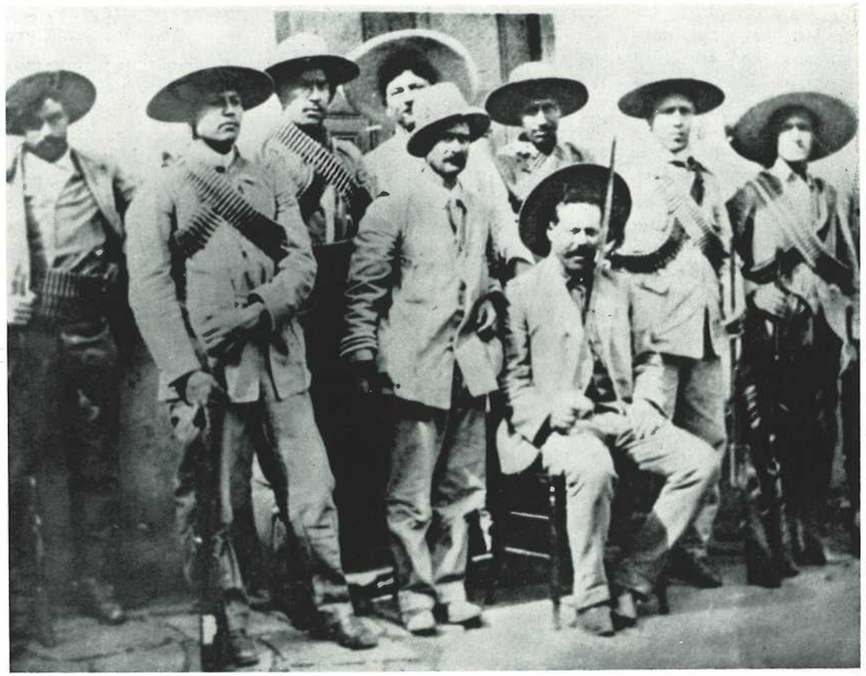
But this is not a complete or final solution, for a zero tolerance on paper is of little value. At present, as we have seen, more than 99 percent of the interstate food shipments slip by without inspection. A vigilant and aggressive Food and Drug Administration, with a greatly increased force of inspectors, is another urgent need.

This system, however—deliberately poisoning our food, then policing the result—is too reminiscent of Lewis Carroll's White Knight who thought of "a plan to dye one's whiskers green, and always use so large a fan that they could not be seen." The ultimate answer is to use less toxic chemicals so that the public hazard from their misuse is greatly reduced. Such chemicals already exist: the pyrethrins, rotenone, ryania, and others derived from plant substances. Synthetic substitutes for the pyrethrins have recently been developed so that an otherwise critical shortage can be averted. Public education as to the nature of the chemicals offered for sale is sadly needed. The average purchaser is completely bewildered by the array of available insecticides, fungicides, and weed killers, and has no way of knowing which are the deadly ones, which reasonably safe.

Biological Control Possibilities

In addition to making this change to less dangerous agricultural pesticides, we should diligently explore the possibilities of non-chemical methods. Agricultural use of insect diseases, caused by a bacterium highly specific for certain types of insects, is already being tried in California, and more extended tests of this method are under way. A great many other possibilities exist for effective insect control by methods that will leave no residues on foods.

Until a large-scale conversion to these methods has been made, we shall have little relief from a situation that, by any common-sense standards, is intolerable. As matters stand now, we are in little better position than the guests of the Borgias. ■



Wide *sombreros* and well-filled *bandoleras*, or cartridge belts, were trademarks of Mexican revolutionary general Pancho Villa (seated) and his staff, pictured in the photograph above.

Memorial to a border incident is

Pancho Villa State Park

By Jess Cox

When Governor Edwin L. Mechem of New Mexico and Governor Teofilo Borunda of Chihuahua, Mexico, met in Columbus, New Mexico, November 18, 1961, it was as friendly neighbors. The occasion was the dedication of Pancho Villa State Park, on the actual site of the attack on Columbus by rebel Villistas on March 9, 1916—the first land invasion ever suffered by the United States within its borders.

More than forty-five years have passed since the bloody surprise attack by the 600 bandits on the sleeping village. The loss of life to attackers and defenders mounted to more than two hundred. Columbus itself was almost destroyed, and has only in recent years shaken free of the tragedy and started a new life. Now interested tourists in increasing numbers are taking State Highway 11 south from Deming to view the battleground and new park, to visit the Pancho Villa Museum and talk to the citizens still living who recall the terrifying events of the raid.

Among the three thousand or more people roaming the sandy streets of Columbus on the sunny Saturday of the dedication ceremonies was Jack Breen, retired Immigration Service official. As a young man, Mr. Breen was present in Columbus at the time of the raid and has a vivid recollection of the occasion. He originated the idea of the State park and worked on the project for a number of years.

The park itself is beautifully landscaped with cactuses and other plants native to the Southwest. It is built around the knoll on which Pancho Villa is said to have sat his horse and directed the attack on the town.

However, there are many people who strongly assert that Pancho Villa was not a participant in the actual raid. They contend that he was miles from Columbus that night. It is conceded by them that Villa may have planned the raid, because of his anger at President Wilson and the United States for allowing troops of the Carranza army to pass through the United States on their way to attack the Villa forces, while Villa was not even allowed to buy much-needed ammunition and guns from this country, as he had done earlier in the history of the Revolution.

Whether Villa was actually present during the Columbus Raid is a question that grows more confused with the years, with witnesses and arguments on both sides. In fact, anything dealing with the life and history of Pancho Villa immediately touches off controversy.

Governor Mechem paid tribute to our neighbors to the south as he said: "We are here to dedicate this park to our neighbors, and to all the people of the two nations." Governor Borunda, in his speech, paid tribute to New Mexico officials who named the park, and said they had bettered the memory of a violent and bloody phase of the past.

It was State Senator Ike Smally, of Deming, who introduced the bill in the 1959 New Mexico Legislature that was responsible for construction of the park. He was also instrumental in the naming of the park.

Merle Tucker, director of the Department of Development of New Mexico, has stated that there is only one other park similar to the Columbus park—one near Bellingham, Washington, on the Canadian border. This latter park has served to further friendly relations between Canada and the United States.

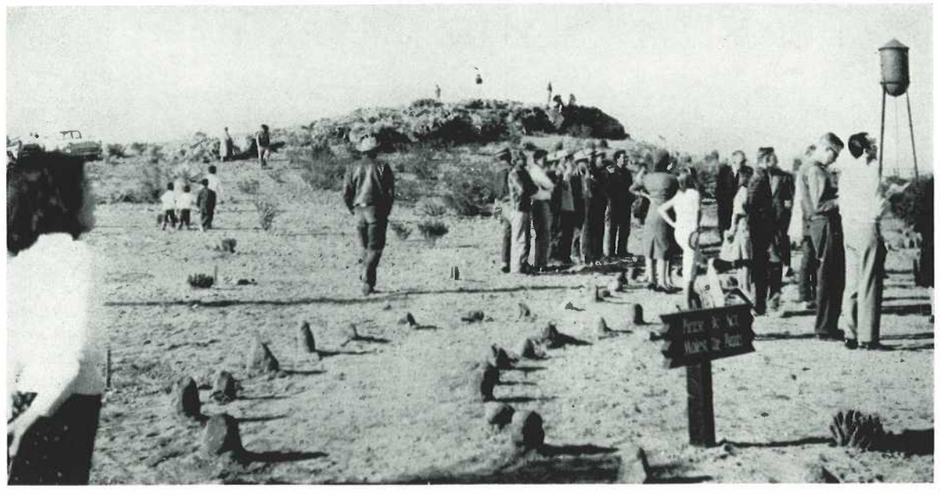
A Colorful Leader

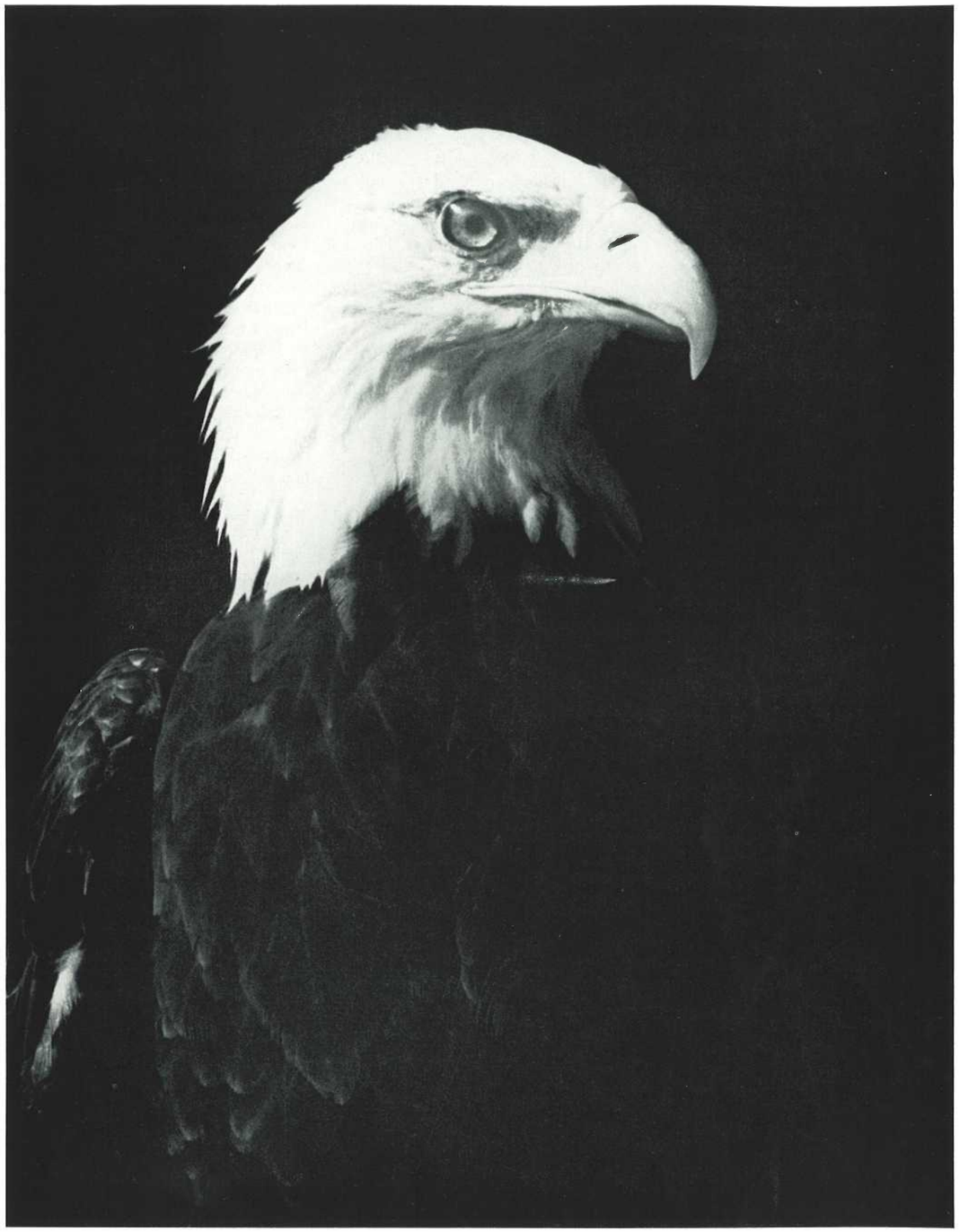
General Francisco Villa, bandit and Revolutionary leader, peons' hero, stands out today as one of the most colorful figures in Mexico's colorful history; yet there are many who have questioned the naming of the State park "Pancho Villa." After all, it has been pointed out, this man *did* invade the United States—or at least ordered the invasion—and was responsible for the wanton killing of seventeen of the citizens of Columbus. The promoters of the park and its name declared that the park in no way honors Villa, but does designate an important historical event.

The celebration, in any case, was a huge success. Colorful Mexican dancers in beautiful costumes performed native dances. Music was furnished by a United States Army band from Ft. Bliss, Texas. A barbecue dinner was enjoyed at Palomas, the Mexican counterpart of Columbus. Games, laughter and dancing made it a fiesta long to be remembered by all who attended. It was a far cry from that dark early morning in 1916 when a ragged, hungry horde of guerillas crept quietly up a deep ditch and into the very heart of Columbus, to begin the assault on the peacefully sleeping town with savage yells and "Viva Villas!"

The Tres Hermanas (Three Sisters) Mountains still look calmly down on Columbus, just as they did on that early morning when the streets were piled with wounded and dead, when the main business establishments and homes lay in smoldering embers. Today all is quiet in Columbus. There is no bitterness on either side of the border, even though that long ago day is still remembered. ■

Within Pancho Villa State Park at Columbus, New Mexico, just north of the international boundary line, is the knoll from which General Villa is said to have directed an attack on that town. The Columbus Raid took place March 9, 1916.





John H. Gerard, from National Audubon Society

"The bald eagle," says conservationist-author John J. Stophlet, "is in serious trouble today."

The Bald Eagle:

A Fight for Survival

By John J. Stophlet

HIGH IN A GREAT OAK, A WHITE head with big yellow bill and flashing eyes appeared above the rim of the huge nest. The eagle raised itself, ruffled its plumage, and looked about. Presently another eagle sailed in and landed on the nest. The mate left the eyrie on broad wings and rose into the clear blue sky above the Ohio woods, its white head and tail shining in the sunlight.

Many times have I seen this stirring sight, never ceasing to marvel and wonder at the power and grandeur of the bald eagle in the air.

Will we always have this brilliant star in our galaxy of wildlife? Much depends on what we do now, because the bald eagle is in serious trouble today. There has been a disturbing decrease in its numbers during the past twenty or twenty-five years.

The bald eagle is primarily an American bird, confined wholly to North America except for a strip of terrain along the northeastern coast of Siberia and adjacent islands. As every American knows, the bald eagle is the national bird of our country, having been thus adopted by our forefathers on June 20, 1782. Its likeness appears on the Great Seal of the United States, on American coins, on buttons of military uniforms, and standards. Have we always protected this symbol of freedom as we should?

Little seems to be known of the former abundance of the bald eagle, but even Audubon had noted a decrease in his day when he wrote: "Before steam navigation on our Western rivers, these Eagles were extremely abundant there, particularly in the lower parts of the Ohio, Mississippi, and adjacent streams. I have seen hundreds going down from the mouth of the Ohio to New Orleans. Now, however, their numbers are considerably diminished, the game on which they were in the habit of feeding having been forced to seek refuge deeper in the wilderness from the persecution of man."

In Alaska in fairly recent years there have been some truly fantastic concentrations of bald eagles. In 1923 one observer counted forty birds in a single tree and seven hundred along three miles of shoreline by an inlet where herring were spawning. In southern Alaska in 1927, Alfred M. Bailey "saw a flock containing at least three hundred March 10, at Klamack, where herring were schooling. Twenty-one birds were counted in one tree." Alaska had a dollar bounty on bald eagles from 1917 to 1945, and during that period 150,000 were slaughtered. Others were killed for "sport."

The Role of Scapegoat

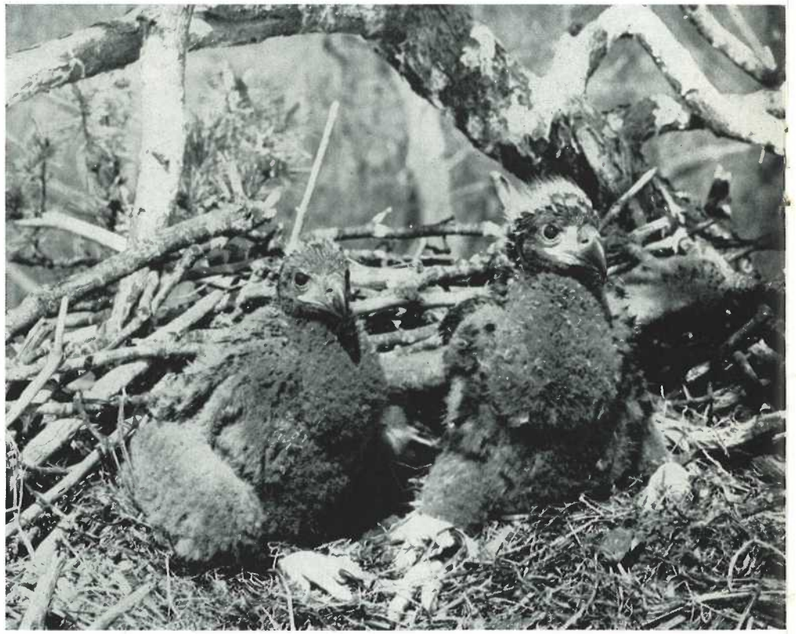
The eagle was the scapegoat for the decreasing salmon runs and the excuse for the bounty was that eagles were ruining the fishing industry. Actually, eagles for the most part eat the salmon after they have spawned and are dying or are already dead. It is another case of man blaming another animal for a natural resource decrease which he himself has caused through sheer greed and stupidity. Congress passed the Bald Eagle Act in 1940, completely protecting the bird in the United States; and in 1959 Alaska came under that law. It is good news to report that eagles are still thriving in Alaska, especially in the southeastern region, on the south side of the Alaskan Peninsula, and in the Aleutian Islands.

Bald eagles commonly build their nests in trees, and usually lay two—rarely three—eggs in their huge stick domiciles; but occasionally eagles nest on the ground or on cliffs. Some years ago, in Northern Michigan, a nest was found on the ground, and two nests were discovered in the same situation on islands in Neuces Bay, Texas. On the California coast and in the Aleutian Islands, eyries were placed on cliffs and one has been found in a giant cactus on Santa Margarita Island, in Lower California. In Washington State, a nest was located between 160-180 feet up in a fir tree, and a huge eyrie at St. Petersburg, Florida, measured ten feet across and was twenty feet from top to bottom.

Perhaps the most famous and historic eyrie in all America was the "great nest" at Vermilion, Ohio, which stood a mile from Lake Erie. In 1922 the nest measured twelve feet high, was eight and a half feet across its top, and was eighty-one feet up in the dead top of a shellbark hickory. It had an area of nearly fifty square feet. The tree crashed during a storm on March 10, 1925. The weight of the

John J. Stophlet

A bald eagle nest tree, presently not in use, in Magee Marsh Wildlife Area of Lucas and Ottawa Counties, Ohio. Active nest nearby.



W. Bryant Tyrrell, from National Audubon Society

At four weeks, young bald eagles are covered with dark gray down, with the tips of feathers protruding from steel-blue sheaths in the down.

nest after falling was estimated at nearly two tons, and its core consisted of brown, loamlike material containing numerous bones of fish, mammals and birds from the countless meals of generations of eagles.

The history of the Vermilion eagles goes back some eighty years to the time when six nests were occupied in the area. The "great nest" was the fourth of these, and was begun not later than 1890. This eyrie was occupied by the same pair of eagles or their successors for thirty-five years, and constituted a unique record in the annals of natural history. The biographer of Audubon, the late Francis H. Herrick, made the Vermilion eagles and their great eyrie famous through his writings and superb photography. He erected eighty- and ninety-foot steel towers at two of the nests in which to carry out his studies of eagles. Sadly enough, eagles no longer nest in the Vermilion area, the last nesting having occurred there in 1932.

Menu of the Bald Eagle

The bald eagle has been blamed many times for the killing of game birds and mammals, and with some reason; but the great bulk of its food is fish—much of it dead fish—and carrion. Of eighty stomachs examined, nine contained mammals; twelve, poultry or game; thirty-five, other vertebrates; fifteen, miscellaneous food; while eleven were empty. Food of southern eagles at times consists of ducks, grebes and coots, and larger birds like little blue herons, snowy egrets, terns, and killdeers. Mammals include foxes, rabbits, opossums, raccoons, tree and ground squirrels, and rats and mice. Turtles also are sometimes eaten. Along the coast of British Columbia and Alaska, where countless thousands of sea birds nest on the island cliffs, eagles have a well-stocked larder in the form of auklets, puffins, gulls and cormorants. Audubon wrote of an interesting way in which eagles were observed to catch fish: "Now and then he takes fish himself in the shallows of small creeks. I saw this occur in the Perkiomen Creek near my Pennsylvania plantation 'Mill Grove,' where the eagles were catching red-fins by wading briskly through the water, and striking the fishes with their bills."

Eagles still nest—although in greatly reduced numbers—in the Great Lakes area, Chesapeake Bay, and in tidewater sections of the Middle and South Atlantic States, as well as along the Mississippi River. But it is in Florida where one finds the answers to what is happening to the bald eagle, and the reasons for its decline; for in that State there are more breeding eagles than anywhere outside Alaska. In Florida the eagle has been studied in-

John J. Stophlet

A young bald eagle nearly ready to fly at West Sister Island in western Lake Erie. (Bird was removed from its nest for photo and banding).

tensively for many years; and there, too, there has been a great reduction in its numbers—from an estimated five hundred nests in 1940 to two hundred and three nests in 1961.

"Eagle man," the late Charles L. Broley—a retired Canadian banker—has probably done more for the bald eagle than anyone in the United States; for Broley, in his banding activities and writings, focused attention on the plight of the bird in Florida. This in turn sparked a nation-wide survey and the bald eagle project of the powerful National Audubon Society.

Broley investigated some eagle nests and, up to 1958, had banded 1240 immature birds. Through banding, he proved that young Florida eagles, after leaving their nests, migrate north even as far as Canada to spend the summer months. His banding activities started in the early 1940's, and by 1946 he was banding 150 young eagles a season.

He concentrated his work on the West Coast of Florida, where he found 125 active nests each year between Tampa and Fort Myers. By 1947 he noted that the production of young had started to fall off, and that forty-one percent of his eagles had failed to produce young. By 1950 this figure had climbed to 78 percent, and during that year he banded only twenty-four young birds. In 1952, eleven nests produced fifteen young, eggs in twelve nests failed to hatch, and forty-six other pairs of eagles did not even nest.

By 1957, nesting failure was 86 percent; in that year he found forty-three nests with adults, but only seven nests held young birds. In 1958 he banded only one young, saw few adults, and at only ten of the nests did he see old birds. Something was radically wrong. Broley theorized that 80 percent of the Florida eagles had been sterilized by eating fish containing DDT residue. Fish in Tampa Bay have been examined, and have been found to contain a large residue of DDT. Insecticides have demonstrably produced reproductive failure in quail, wild turkey, and woodcock, and could conceivably affect eagles in the same way; but the latter has been neither proved nor disproved. The United States Fish and Wildlife Service plans to test this theory soon on Alaskan eagles in a region that has never been saturated with insecticides. Broley concluded: "Our American bald eagle—national emblem of this country—is a very sick bird."

Some Nesting Statistics

A report on Florida eagles in 1961 revealed that, of 196 nests, breeding results were known in 138, or 70 percent. Seventy-five of these 138 nests were successful in producing young, and nesting success was 52.9 percent.

But nesting failure is not confined to Florida. In New Jersey, where there were seven active nests in 1961, only one produced a single young. Forty-four nests in Michigan fledged only twenty-three young. At the National Audubon Society's sanctuary on Mt. Johnson Island, in the Susquehanna River, Pennsylvania, no young eagles were raised from 1947 to 1958. No figures are available since then; but it would appear that bald eagle nesting failure seems generally widespread.

The iron heel of "progress" is grinding out the habitat of eagles as well as other forms of wildlife both in Florida and other parts of the country. Dr. Richard L. Cunningham, who has studied eagles in Florida, said: "Of twenty formerly active nests in the Bradenton area, none are now in use and here is why: ten nest trees were cut down; the land was cleared around seven nest trees and the nests were abandoned; one nest was abandoned because a drive-in theater was built too close; one nest was abandoned because spray planes flew too low over the nest; and the final nest was abandoned because homes were built too

close by." This tells us, chapter and verse, why eagles are disappearing in Florida and elsewhere. Lumbering, drainage of interior and coastal marshes, filling of estuarine waters, spraying—all of these spell trouble for the bald eagle.

Mr. John S. Gottschalk of the United States Fish and Wildlife Service stated the problem of the bald eagle succinctly when he said: "Instead of the Four Horsemen of the Apocalypse of old we have the modern Four Horsemen of Destruction: The plane, spreading deadly pesticides; pollution, poisoning our waters; the bulldozer, leveling our woods and fields; the dredge, digging into wildlife habitat shore areas."

The one great eagle refuge of the eastern United States is the magnificent wilderness of saw-grass and cypress called Everglades National Park. Here, in the remote lakes where bull 'gators still bellow, where shadowy panthers still stalk the flat woods, and where egrets and ibis whiten the mangroves like snow, "old baldy" still finds a home. This is, in fact, one of the few remaining areas in eastern North America where numbers of eaglets are fledged each year.

In July, 1960, there were in the park forty-one eagle's nests in good repair; but after Hurricane Donna roared through in September of that year there were only five nests left intact. In early January, 1961, several new nests were found containing young, and new nests were built near twenty-six of thirty-six former sites. The total production of young in 1961 was only slightly below the results for 1960. This shows that eagles will re-nest even after a catastrophe has destroyed their eyries.

What can be done to save the bald eagle? There is no ready answer, but it will require the efforts of everyone with the slightest interest in wildlife to keep the bald eagle a living part of the American scene. Anyone having information on eagle nests and numbers of birds should send it to the National Audubon Society in New York City, which has launched a Continental Bald Eagle Project under the direction of Alexander Sprunt, IV.

The Ohio Eagle Colony

In my home State of Ohio we are fortunate in having a few eagles nesting along Lake Erie, with only ten active nests counted during the past year. How can eagles manage to nest in one of the most industrialized States in the Union? The answer lies in the fringe of marshland along the lake and the group of islands near its western end, which give the bald eagle the abundant food and isolation it requires for survival. But here too, the eagle is losing and decreasing.

This is an instance of the dilemma that many of our wildlife species face today as they are driven from their habitats by the impact of rapidly increasing human population. There is a simple truth which has been told many times, but which needs constant retelling—that any widespread species, to survive, must be protected in many places while it is still common. It should never be permitted to become confined to a few localities. That is what has happened to the prairie chicken, the whooping crane, the California condor, the Everglades kite, the grizzly bear and the wolf, to mention but a few species. All of these are now close to the shadows.

There should be more publicity in all media for the eagle, as this is essential to public awareness of the bird's plight. The drain by shooting continues; and eagle-killers should be awarded full penalties of law. There is no excuse for killing bald eagles in the country today.

I recall a time, many years ago, when I stood in a Lake Erie marsh and watched two eagles flying high above me. The birds moved toward each other, their great wings almost touching, their talons extending outward. So they maneuvered for some time in their "sky dance." It was a stirring and moving sight, and one which should be experienced by future generations. It *can* be, too, if we will work hard to save this inspiring symbol of American freedom. ■

PRELUDE AT DUSK

Mountains seclude themselves at dusk:
A coverlet of charcoal hue
Enfolds them till the tallest oak
Is huddled close in gown of blue.

Shadows snore in rustling leaves,
In cadences the night-wind weaves.

—Jean Rasey

Your National Parks Association at Work

Arizona Issued License For Marble Canyon Dam

Readers of *National Parks Magazine* will recall an article in the April, 1962, issue titled "Campaign for the Grand Canyon," in which it was pointed out that even then there was a hearing in progress in Washington to determine whether the State of Arizona or the city of Los Angeles should be issued a Federal Power Commission license for certain further power and irrigation development of the Colorado River. Some of the proposed development, it will be remembered, would pose grave threats to the integrity of Grand Canyon Park and Monument.

The application of Arizona was for a license to construct a dam in Marble Canyon, about twelve and a half miles upstream from the northeastern edge of Grand Canyon Park. That of Los Angeles contemplated a dam at Marble Canyon and the diversion of some ninety-two percent of the Colorado's water, by way of a forty-two-mile tunnel, to a power plant and reservoir at Kanab Creek. In connection with this latter project there would have been access roads, construction facilities, and possibly an adit for ventilation and rock removal within Grand Canyon Park itself.

It was pointed out that the Marble Canyon Dam contemplated by Arizona would not, in itself, do great harm to the Grand Canyon; but that the Los Angeles scheme would seriously violate established national policy for the parks.

It was further noted that the National Parks Association had intervened in the Marble Canyon case in order to present the views of both the National Park Service and park defenders in general; that through subpoena of the Association, Director Conrad L. Wirth of the Park Service was able to testify to the damage which would be wrought in the park by the proposed Los Angeles diversion.

On September 10, 1962, Mr. Edward B. Marsh, Presiding Examiner for the Federal Power Commission, ordered that a license for construction of the Marble Canyon Dam be issued to the Arizona Power Authority. It should be noted that the Hearing Examiner's order is subject to review by the Commission on appeal.

Conservationists will properly feel that the order for issuance of a license to Arizona represents an initial success in the campaign for Grand Canyon Park protection. They will probably not, however, allow the decision to cause relaxation of interest in the issue. In an editorial appearing in the January, 1962, issue of this magazine, NPA Executive Secretary Anthony Wayne Smith warned that "this battle may be just the beginning of a long, long war."

NPA Secretary Presents Paper on Parks Hunting

On many occasions in the past several years this Magazine has detailed the Association's position in regard to wildlife management in the national parks and monuments, and the closely related issue of public hunting in the parks. The Association has felt essentially that the personnel of the National Park Service is quite capable of dealing with such mammalian overpopulation problems as may arise in a few of the parks and monuments from time to time without outside assistance, and it has indicated its unyielding opposition to suggestions and pressures looking toward the opening of the parks and monuments to public hunting in the name of "game control."

Certain few State Fish and Game Commissioners have in the recent past been active in pushing for public hunting in the parks; indeed, in 1961, the International Association of Game, Fish and Conservation Commissioners stated that it would oppose establishment of any future national parks without provision for public hunting.

Published in the September, 1962, issue of the Magazine was a letter from Executive Secretary Anthony Wayne Smith of the National Parks Association to the International Association of Game, Fish and Conservation Commissioners on the occasion of its 60th annual convention at Jackson Hole, Wyoming, during mid-September. This letter outlined the National Parks Association's position toward hunting in the parks and requested that the Association be permitted to present its views at the convention.

As a result of the request, Secretary Smith was able to lay the views of the Association before the Commissioners in a paper presented at the Jackson Hole convention, on September 13th.

As a general theme, Secretary Smith stressed in his paper the urgent need for close cooperation between the various segments of the conservation movement, telling the Commissioners that in his opinion "one of the worst things that could happen to the conservation movement at this moment would be a serious conflict over wildlife management in the national parks . . ." He cited a number of conservation efforts which might rather be occupying the attention of American conservationists—problems like the ill-advised drainage of wetlands or destructive mining and timber harvest practices.

In his remarks before the Commissioners, Secretary Smith emphasized the fact that there is ample room in the nation for both a system of public hunting on private and certain Federal lands, and a system of parks and monuments in which public hunting is excluded. For a century the management of wildlife in the parks has been carried on in a manner involving minimum disturbance to wildlife, he told the Commissioners, and it does not seem unreasonable to urge that this policy be continued. The Executive Secretary stated that the National Parks Association intends to defend this position vigorously, and added that "we do not expect to be without allies in doing so." He disavowed any suggestion that the Association had begun a campaign against public hunting outside the parks.

Mr. Smith told the Commissioners that in the Association's opinion the National Park Service is committed to the necessary control of ungulate populations by park personnel to the extent necessary for protection of habitat, and that he believed most conservationists supported the Service's policy.

The Land Conservation Fund

During August, the House Committee on Interior and Insular Affairs held hearings in regard to H. R. 11172, a bill to establish a national land conservation fund to acquire new recreational areas and inholdings in present national parks and national forests. The fund would be financed by a system of park user fees, a boat tax, and motorboat fuel tax refund proceeds.

In response to an invitation to submit recommendations concerning the bill, Paul M. Tilden, NPA's assistant to the executive secretary, told the committee that in his opinion the bill appeared to be a logical step against present park overcrowding, and that the fund-raising provisions seemed to be fair ones.

The bill has been criticized for failure to provide State grants for recreational land purchases; but in this regard Mr. Tilden said he felt that "at the present time one of the problems of paramount importance . . . in respect to the national parks and national forests is the elimination of the privately owned lands, vast in sum total, which lie within the boundaries of these areas. . . ." This task, with the rounding out of the Federal system of parks by new lands, would require a large part, if not all, of the funds that could be raised under the provisions of the bill, Mr. Tilden stated.

News Notes from the Conservation World

President Issues Proclamation Enlarging Natural Bridges N. M.

A recent proclamation of President Kennedy has added considerable land to Natural Bridges National Monument—in San Juan County, Utah, some sixty miles northeast of Rainbow Bridge National Monument—and has excluded from the monument approximately 320 acres of land no longer judged of archeological or administrative value. Added were 5236 acres near the present boundaries which contain cliff-type prehistoric Indian ruins and suitable space for construction of a visitor center, administrative offices, employee residences, utility and maintenance facilities, and a new entrance road.

The addition to Natural Bridges provided in Presidential Proclamation 3486, signed during August, more than doubles the size of the monument, as it formerly contained approximately 2650 acres.

A Welcome Step Toward Protection for Bald Eagle

According to a recent news release from the Florida Audubon Society, whose headquarters are at Maitland, Florida, more than a half-million acres of ranch lands in the Kissimmee Prairie region of the south-central part of the State have been established as a bald eagle sanctuary. (See article on the bald eagle and the need for its complete protection, this issue).

Fifty-four landholders, who control practically contiguous acreage extending from near the town of Kissimmee to the northwestern shore of Lake Okeechobee, have entered into an agreement with the Florida Audubon Society to maintain their properties in such a manner that bald eagles can be protected and safeguarded in the area, it is stated.

The formation of the Kissimmee Cooperative Bald Eagle Sanctuary is the work of the chairman of the Florida Audubon Society's Bald Eagle Committee, George Heinzman of Winter Haven. His wife, Dorotha, serves the committee as vice-chairman and is particularly involved in the educational phases of the project.

Mr. Heinzman became interested in the serious plight of the bald eagle four years ago, according to the Society's announcement, and spent much time studying and photographing eagles at their nests. He has had several articles on the bird published in national magazines.

A comprehensive view of the present status of eagles in Florida has been obtained through the help of many cooperators who have reported on the location and success of nests in that State.

Soil Conservation Group Elects New President

The new president of the Soil Conservation Society of America, national conservation organization with headquarters in Des Moines, Iowa, will be Dr. George M. Browning of Ames, Iowa, it has been learned. Dr. Browning will succeed Mr. Roy M. Hockensmith of Washington, D.C., and will take office on January 1, 1963.

Dr. Browning is associate director of the Iowa Agricultural Experiment Station at Iowa State University, in Ames, and is widely recognized for his research work in soil erosion and its control; he is author of many papers on soil structure, tillage, and soil and water loss measurements.

As president of the Society, Dr. Browning will work with the leaders of 110 local chapters of more than 10,000 total membership in the 50 States and in foreign countries.

A Tribute to DeVoto

President Robert C. Sykes of the Montana Wildlife Federation has announced that his organization and the Idaho Wildlife Federation has cosponsored a memorial cedar grove honoring the late Bernard DeVoto, conservationist and historian of the West. The grove is located on the Lochsa River in the Clearwater National Forest of northern Idaho, about 40 miles southwest of Missoula, Montana. Within the grove a bronze plaque commemorating DeVoto's many contributions to the cause of conservation has been placed on a large boulder; dedication of the grove was carried out September 9, 1962.

Three New Units For Wildlife Refuge System

Three additions to the nation's system of wildlife refuges, as well as a number of enlargements in already existing units, have been authorized by the Migratory Bird Commission in recent weeks. The Commission is composed of the Secretaries of Interior, Agriculture and Commerce, two Senators, and two Representatives.

Authorized for establishment have been the Primehook National Wildlife Refuge of 11,233 acres in Sussex County, Delaware; the Toppenish Refuge in the Yakima River Watershed near Toppenish, Washington State, of 12,379 acres; and the Lake Nettie Refuge of 2890 acres in McLean County, North Dakota.

Scheduled for enlargement are the Brigantine National Wildlife Refuge in New Jersey, where an additional 7603 acres have been authorized; and the MacKay Island Refuge in North Carolina and Virginia where purchase of an additional 841 acres was approved.

Association Cites Work of Park, Forestry Men

At the recent national convention of the National Campers and Hikers Association, held at Indian Falls Lake near Batavia, New York, a number of awards were made to individuals whose cooperation with the public in outdoor activities was adjudged by the Association to be outstanding. Several of the recipients were State park officials in various parts of the nation. Thus Warren C. Foss, ranger foreman at Mt. Madonna State Park, in California, was awarded a bronze plaque for outstanding efforts to accommodate the public and for his interest in establishing many miles of hiking trails in the park.

State park and forestry personnel receiving citations for outstanding work, as judged by the Association, were: William Price, chief naturalist of the Ohio Division of Parks; Thomas W. Haigh, chief of New Jersey State Forests; and Lewis Van Der Mark, superintendent of the Robert H. Treman State Park in New York.

Legislators Ask Immediate Pt. Reyes Land Funds

Senator Clair Engle and Congressman Clem Miller, both of California and both of whom were instrumental in securing the newly authorized Point Reyes National Seashore in Marin County, California, have recently requested President Kennedy to ask Congress for a $5 million special appropriation with which the National Park Service may commence immediate acquisition of land in areas of the future Seashore still threatened by subdividers and land speculators. (In this respect, the situation at Point Reyes is similar to that at Cape Cod immediately after authorization of the Cape Cod Seashore last year.—*Editor*).

"We consider it very important that a substantial portion of the land acquisition funds authorized by the bill be appropriated this session," the legislators jointly stated. "If this is not done, an adequate land acquisition program could not get underway until the fall of 1963."

In commenting on the letter, Senator Engle noted that, while eventual establishment of the Seashore became a certainty on its recent approval by the House of Representatives, "the Point Reyes subdividers still have not called off their bulldozers."

Ancient Mesa Verde Folk Showed Engineering Skills

During a recent survey for a proposed campground on Navajo Hill in Mesa Verde National Park, Colorado, park archeologists have discovered extensive ditches and channels of a prehistoric system for catching and collecting water used for domestic purposes by the agricultural Indians who inhabited the mesa and surrounding regions for more than 1300 years, the National Park Service has announced.

The discovery indicates that the Indian inhabitants of Mesa Verde had a thorough knowledge of useful terrain and practical hydrology, it was indicated.

Dr. John M. Corbett, the Park Service's chief archeologist, has stated that "it is evident that considerable communal effort had gone into the construction of these works—also the need for water was great enough to utilize every possible resource to catch and collect water."

"We discovered on the southern slope of Navajo Hill five major ditches, covering an area of over 2400 feet long and about 300 feet wide, converging in a large collecting basin," Dr. Corbett said. "As a result of this extensive network, rain falling anywhere in the area would automatically be drawn off and follow the ditches into one of these basins."

LATE NEWS ITEM!

Shortly before presstime, the House of Representatives passed, with amendments, *S. 4*, Senator Yarborough's bill to create a Padre Island National Seashore. The vote was 256 to 87. The Yarborough bill had previously been passed by the Senate during the earlier part of the 87th Congress' second session —in April, 1962.

One of the amendments to the bill as passed by the House calls for a total Padre Island Seashore length of about 80 miles. *S. 4*, as passed by the Senate, set the length at 88 miles. However, two Padre Island bills in the House (*H. R. 5013* and *H. R. 5049*) would have limited the length to 65 miles. Thus the 80 miles of the authorized Seashore represent a compromise between Senate and House bills.

Authorized for land acquisition was $5 millions, $1 million more than the Senate bill authorized before amendment.

State Park Visitation Hits Another New High

With 1961 attendance figures now at hand, Secretary of the Interior Stewart L. Udall has revealed that outdoor recreation and camping at State-owned and operated parks and recreation areas has hit another new high figure.

Based on a report prepared by the National Park Service at the request of the National Conference on State Parks, more than 273 millions of visits, including 21 millions of overnight stays, were recorded at 2792 State parks and related areas covering nearly 5.8 millions of acres. The attendance gain over the 1960 figure stands at 5.6 percent.

Included in the survey are water recreation areas of the Department of the Interior's Bureau of Reclamation and the Army Corps of Engineers which are administered by States. Secretary Udall has noted that future statistics on State park and recreation area visitation will be published by the newly established Bureau of Outdoor Recreation rather than by the National Park Service.

New National Forest Scenic Area Established

During June, Secretary of Agriculture Orville L. Freeman announced the establishment of the Forest Service's 26th National Forest Scenic Area. Under the special management accorded such areas, recreation and scenery are considered the prime resources, and are given first priority over other uses such as grazing and timber harvest.

The new special management lands will be known as the Hells Canyon-Seven Devils Scenic Area, of some 127,000 acres of the Nez Perce, Wallowa-Whitman, and Payette National Forests in Idaho and Oregon. Present plans call for 53 camp and picnic grounds, some of which will be available only by foot or horse trails. The heart of the Seven Devils Range will be managed for back-country recreation, according to the Agriculture Department, but about 200 miles of road will be needed to make parts of the area accessible for general public recreation.

Editorials (*Continued from page 2*)

unspoiled shoreline.

Although within thirty-five miles of the close-packed millions of San Francisco and its sprawling satellite cities, the scenic and historic Point Reyes Peninsula has been, up to the past few years, largely by-passed by the developers. It has indeed been—as some have called it for both geographical and geological reasons—an "island in time."

But more recently—and even while the Congress considered preservation for the Peninsula—the stakes of the subdividers have been sprouting about the perimeters of the Peninsula's flowered meadows, and the grunting of the bulldozers has been echoing from the pleasant pine and manzanita groves of the uplands.

Twice within the past two years have preservation-worthy segments of unspoiled shore been secured for public use at a late moment—first at Cape Cod in Massachusetts, now at Point Reyes in California. We feel that the many who have been so persistently concerned with eventual success at Point Reyes—from layman to Congressman—deserve the congratulations and commendations of all Americans.

—*P.M.T.*

WHOSE WOODS THESE ARE: THE STORY OF THE NATIONAL FORESTS. By Michael Frome. Doubleday & Company, Inc., Garden City, New York. 1962. 360 pages 6 x 9, with bibliography and index. Illustrated in color and black and white. $5.95.

In his capacity as editor of this magazine, the reviewer often receives letters concerning experiences and conditions in the White Mountains National Park, the Yosemite National Forest, and myriad other mythical national reservations: this, despite the several excellent books that have appeared in recent years dealing with the purposes and meanings of both the national park and national forest systems. Thus, Michael Frome's *Whose Woods These Are* is the second major popular work on the national forests to appear recently, following Arthur Carhart's *The National Forests* (Alfred A. Knopf, Inc.) by a little less than four years.

These two books are both from the typewriters of able writers; they both tell the story of the national forest system lucidly and entertainingly—what the national forests are, how they came to be, what goes on within them. Perhaps Frome's work will have a larger appeal to the audience of this particular magazine; the author does not walk quite as directly toward the basic objective of the book, but wanders rather more through the many pleasant open spaces in his forests, with many an anecdote and bit of nature lore discovered along the way.

—P.M.T.

DICTIONARY OF GEOLOGICAL TERMS. Prepared under the direction of the American Geological Institute. Doubleday & Company, Inc., Garden City, New York. Dolphin Reference Books Edition. 1962. 548 pages, in paper cover. $1.95.

As one of the last branches of science to succumb to the march of specialization, geology has more than made up for lost time during the past decade or so, spawning during that time a marvelous array of specialized words and phrases. Seventy-five hundred of the most important and frequently used of these are to be found in this handy reference work, which is an abridged and revised edition of the American Geological Institute's *Glossary of Geology and Related Sciences*, of 1960.

THE OLYMPIC SEASHORE. By Ruth Kirk. The Olympic Natural History Association, 600 Park Avenue, Port Angeles, Washington. 1962. vii + 80 pages, 6½ × 9½; foreword by Sigurd F. Olson. Illustrated with maps, photographs and detailed drawings. $1.75.

To the list of natural history publications currently flowing from the museum and natural history associations connected with our park system, and from other sources, *The Olympic Seashore* is a competent and particularly handsome addition. Many of this magazine's readers need no introduction to the outdoor and natural history writings of Ruth Kirk, who leads us most engagingly into the animal life and the geology and history of a superbly beautiful Northwestern shoreline. The support accorded the author by photographers Gallison, Haugen, Bob and Ira Spring and husband Louie Kirk, as well as the handsome maps and drawings of Dee Molenaar, must be classed as outstanding.

GREAT SMOKY MOUNTAINS WILDFLOWERS. By Carlos C. Campbell, William F. Hutson, Hershal L. Mason, and Aaron J. Sharp. The University of Tennessee Press, Knoxville, Tennessee. 1962. 40 pages 5¼ × 8 + inside paper covers. Illustrated in full color. List price not stated.

Fifty-five representative flowering plants of Great Smoky Mountains National Park and immediate vicinity are illustrated in full color with brief commentary as to their general form and preferred localities. Both the photographs and their color reproduction must be classed as especially fine. A valuable guide for the Great Smokies park visitor who may not be botanically inclined, but who would like an introduction to the riches of this floral wonderland.

FLOWERS OF LASSEN. By Gladys L. Smith. The Loomis Museum Association, Lassen Volcanic National Park, Mineral, California, in cooperation with the National Park Service and the California Academy of Sciences. 1962. 52 pages 6 × 9 in paper cover. Illustrated in black and white and color. $1.00.

Gladys L. Smith, botanist on the staff of the Botany Department, California Academy of Sciences, has selected 135 flowering plants from the more than 700 plants listed for Lassen Park, treating them in some detail and giving park localities in which they are likely to be found. Arrangements of plants is by flower color, and each subject is illustrated either in black and white line drawing or in full-color halftone.

The text and interior color work is done by the offset method of printing, and the reviewer is tempted to say that the offset printing trade in general might well note the high standard of presswork maintained throughout this fine little volume.

AMPHIBIANS AND REPTILES OF LASSEN VOLCANIC NATIONAL PARK. By Robert Badaracco. The Loomis Museum Association, Lassen Volcanic National Park, Mineral, California. 1962. 60 pages 6 × 9¼ in paper cover. Illustrated in black and white with many drawings. Price not listed.

This volume might well serve as a companion to that reviewed directly above. Robert Badaracco, presently a park naturalist at Hawaii's Haleakala National Park, describes the amphibians and reptiles the visitor may encounter within Lassen Park, and in so doing manages to combine his facts and descriptions with some entertaining writing. Mr. Badaracco sends the book off in the right direction in his first chapter, where he shoots some of the silly notions still entertained by many in regard to his largely inoffensive subjects.

Letters to the Editor

The Changing Face of South Florida

A statement in *Science News Letter* for June 16, 1962, caught my eye and prompted me to write to you. In the article "Space Spending Pays Off," two sentences regarding development at Cocoa Beach, Florida, read: "Construction and building trades are doing a multi-million-dollar business on a narrow strip of land that five years ago was largely populated by sea gulls and pelicans. It is a booming resort area that attracts tourists from all over the world who come to sit on the beach and watch the spectacular missile launches."

This is fine for the construction and building trades and the tourist trade, but what has happened to the sea gulls and pelicans? Were they able to find other beaches that are not occupied by private homes or tourist developments?

What about the plans to erect test pads for million-pound thrust rocket engines near Everglades National Park? What effect will the terrific noise from such tests have on the wildlife of the park?

Natural disasters, such as hurricanes and the recent drought and fires in the Everglades, are causes for concern about the wildlife of the park. Man may be partly responsible for the drought and fires and the resulting destruction of natural vegetation and wildlife. Is it necessary to further burden the sensitive water birds and other animals with test sites and "developments"?

Two Audubon wardens were killed in the early 1900's protecting birds from plume hunters. Did they die in vain? Are the birds going to be forced from their homes by activities connected with outer space "achievements"? In the race for space and attempts to find life on other planets are we going to neglect life on earth?

ROBERT W. CARPENTER
Park Naturalist
Hot Springs National Park

● Many others both in and out of the conservation world, have voiced anxiety over the "developments" that are changing the character of South Florida and posing threats to Everglades National Park. To the tourist and missile problems mentioned by Park Naturalist Carpenter might be added a contemplated oil refinery on Biscayne Bay east of Homestead and Everglades Park, and some fifteen miles north of the John Pennekamp Coral Reef Preserve (formerly the Key Largo Coral Reef Preserve) with satellite heavy industries; and the current subdivision of the Everglades Park "hole in the doughnut," reported in this magazine for June, 1962.

The Everglades picture is further complicated by a disturbed fresh-water situation, brought on by South Florida's drainers and improvers of yesteryear and aggravated by modern development.

This magazine hopes to present its readers with one or more major articles on Everglades National Park and its current difficulties in the near future.

—Editor

Reader Is Disturbed By Glen Canyon Dam

As a recent subscriber to your interesting magazine I wish to commend you on the service you are rendering the United States in the struggle to preserve some of the few remaining places that people can go to recreate their frazzled nerves.

I am a fairly well-traveled oldish lady; as a little girl I was taken to Yellowstone Park when the old tally-ho method of transportation was in use. It took us a week to make the trip, and we saw the first car that was allowed in the park. I went back about ten years ago on a motor trip, and it was ghastly. The traffic was like that in a big city.

I have been to many of the other parks and monuments and found them all worthy of preservation. My present distress is over the Glen Canyon project. In 1949 my husband and I, together with a guide —who provided the rubber life raft and the provisions—took a float trip down the San Juan River from Hite, Utah, into the Colorado to Marble Canyon. We went through the Glen Canyon, and we walked up to the Rainbow Bridge. It was a long, arduous walk but well worth the trip. I do hope this fabulous work of nature can be protected from the depredations of man.

When I came back from that ten-day stay in Canyon Country I felt that I had taken a trip to a place as strange as the moon. And for my money I would much rather see these weird and wonderful places saved for posterity to marvel at than to think of them taking off to the moon. I never felt better in my life than I did after that trip, and I am sure that is more than the future moon traveller will be able to say.

MILDRED N. BEAUREGARD
Milledgeville, Georgia

Cats, Dogs, and Trail Mules

In July our family went camping in a State park not far from Washington, D.C. We had been there before so we know they do not allow cats and dogs in the camping area, and we left ours at an animal boarding place for the trip. While we were in the park two men would run motor scooters back and forth over the camp roads every day so that the place sounded like a motorcycle hill climbing event.

According to your article in the May *National Parks Magazine*, I thought that these tote-gotes were being used mostly in the West, but I guess they must be migrating east. I would like to suggest that if a choice has to be made they let the cats and dogs in and keep these contraptions out.

EDYTHE R. GREENE
Washington, D.C.

● While the examples of motor scooter annoyance and damage cited in Fred Eissler's *Here Come the Rough Riders* (*NPM* for May, 1962) were drawn from the Western States, use of the machines is by no means confined to the West. It is our impression that motor scooters, as used for back-country trail travel, first came into general use in the Western States; as the Colorado potato beetle spread eastward many years ago, so have the mechanized trail mules of today moved quickly toward the Atlantic.—*Editor*

Predators As Controllers of Wildlife Populations

In regard to the overpopulous elk in Grand Teton National Park, has there been any consideration of introducing former natural predators of the elk which have since been reduced or exterminated, such as the wolf and cougar? This would seem to me to be an excellent way to keep the elk in check as well as to serve in preserving our natural predators, fast being exterminated by encroaching civilization.

PAUL GENTEMAN
Chicago, Illinois

● Your Association feels that not enough attention has been paid to the restoration of predators as a wildlife population control means in the national parks and monuments. However, since most of the predators are no respecters of park boundaries, this approach has its limitations.—*Editor*

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VIRGINIA KIRKUS

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