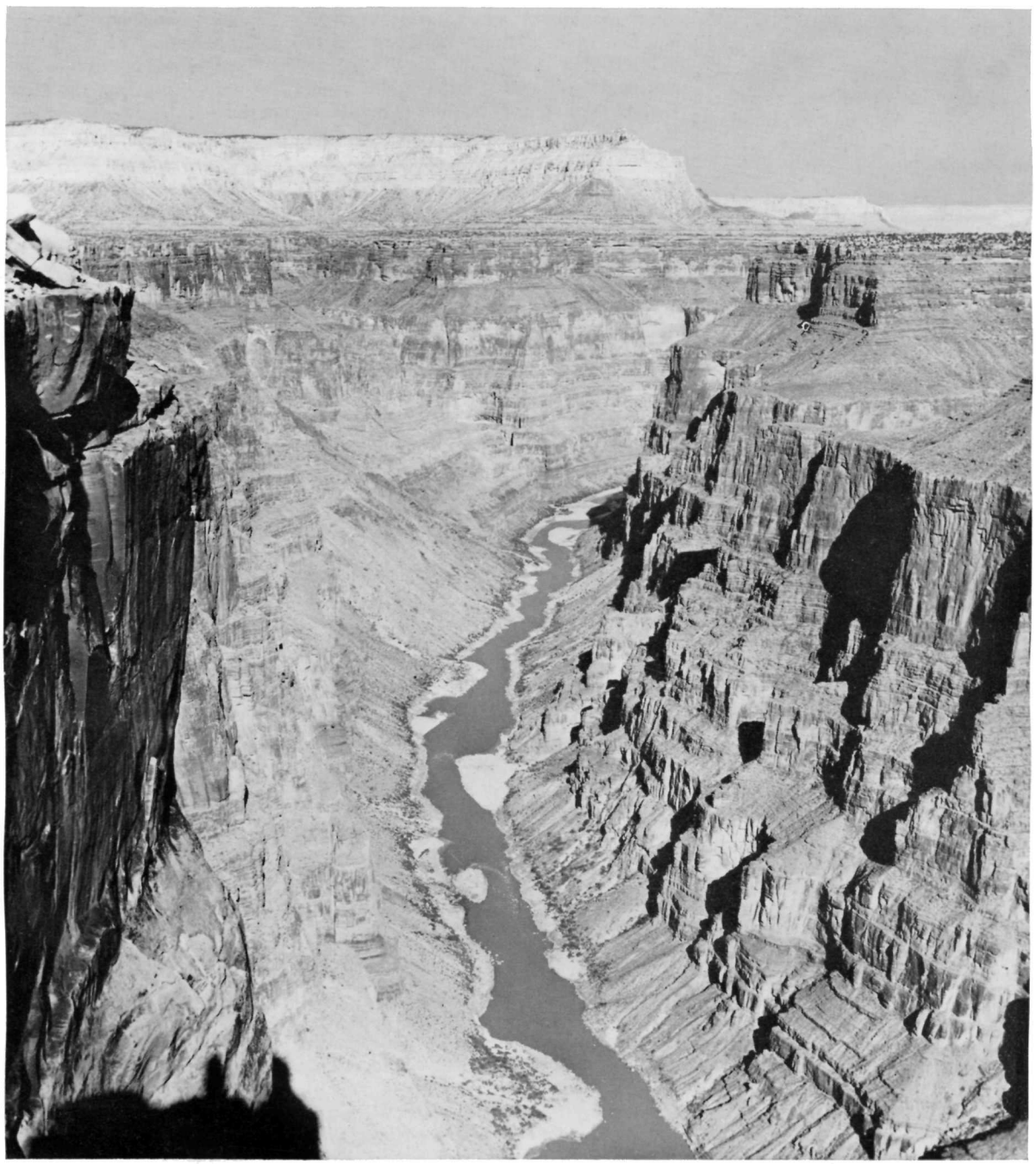
NATIONAL PARKS *Magazine*



Canyon of the Colorado River: view looking east
from Toroweap Point, Grand Canyon National Monument

May 1964

The Editorial Page

Unpalatable Food for Thought

A SERIES OF BIOLOGICAL DISASTERS IN THE lower reaches of the Mississippi River Basin has brought the nation into close touch with a question which, we think, will not wait much longer for an answer. The question is whether the country will continue indefinitely in its lavish use of pesticides whose long-term effects on the land and its plants and animals are largely unknown.

During the past several years the lower Mississippi River and adjacent waters of the Gulf of Mexico have experienced massive fish and other wildlife mortality during fall and winter months. The dieoffs apparently have been traced to the normal use of several chlorinated-hydrocarbon pesticides on agricultural lands of the lower Mississippi Basin States; possibly also on lands of the river's upper reaches. Endrin, aldrin, and dieldrin have been named specifically by the public Health Service with the possibility that other and as yet unidentified pesticides may be involved.

It appears that normal runoff of rainfall from croplands into the Mississippi has introduced sufficient amounts of pesticides to cause wholesale death to fish during times of year when the animals are living partly on body fat accumulated during spring and summer; it is known that the chlorinated hydrocarbons tend to become concentrated in the body fat of animals. Other animals, predatory on fish and constituting an adjacent link in the biologic chain of life, also have perished in large numbers.

The important point, of course, is that these wildlife disasters have stemmed, so far as can be ascertained, from the normal use of pesticides. Biologists and conservationists have been increasingly concerned over the possible long-range adverse effects of the present endless rain of pesticides on the land, and the late biologist Rachel Carson recently gave effective public voice to these concerns. The misgivings of these people obviously will not be lessened by knowledge that each fresh deluge of toxic chemicals is, by and large, probably administered according to directions on the package.

After publication of Miss Carson's *Silent Spring*, which raised, among other questions, that of the long-term effects of chemically-stable pesticides, the tendency on the part of pesticide manufacturers and promoters was to treat the point as scaremongering. It was asserted that we should adopt a wait-and-see attitude, because evidence for long-term environmental damage was not clear, or was non-existent. Failing this argument there was another defensive position to fall back on: that which posed the specter of mass starvation. The great productivity of the American farm was tied solidly to pesticide use, and it was found convenient to overlook the fact that the lush production which has produced ponderous agricultural surpluses has been due in substantial measure to hybridization and heavy application of chemical fertilizers. That a readjustment would take place in an agricultural economy which dispensed with pesticides is likely; its magnitude would, however, be far less than that indicated by the pesticide manufacturers and distributors.

As this is written the Agricultural Research Service of the Agriculture Department has just concluded public hearings in Washington on the question of whether present requirements for registration of endrin, aldrin and dieldrin under the Federal Insecticide, Fungicide and Rodenticide Act should be modified. The Service has not had time, of course, to draw any conclusions from the hearings; but that there has been no change in the attitude of the pesticide manufacturers is obvious. There is still no "good evidence" for environmental damage.

Interior Secretary Stewart L. Udall has recently emphasized, although not in connection with the Agriculture Department hearings, that there is a growing mass of evidence for widespread environmental contamination from normal use of pesticides. He has called for an end to the use of highly toxic chemicals the spread of which cannot be controlled. There is little doubt that the Secretary will have the support of all conservationists and myriad other Americans in this position. —*P.M.T.*

Tanganyika's Park Dilemma

IN THIS ISSUE OF THE MAGAZINE A noted English author and specialist in African wildlife and its problems takes readers on a trip through the Serengeti, one of the three presently-existing national parks in newly independent Tanganyika. The author talks of park management problems in one of the African sanctuaries which, many conservationists feel, eventually will constitute final shelters for the big-game mammals of that continent.

The people of Tanganyika, as those of other emerging nations in Africa, are hungry for the comforts and conveniences that come with national development; in respect to resource development, the Tanganyikan government is faced with a dilemma. Responsible persons in the government of that state are aware of the need for preservation of wildlife, in particular the larger forms which might in future attract tourist dollars to help finance internal development; on the other hand, there are widespread demands for a halt to spending on "wild animals" and more concentration on schools, hospitals and housing.

Conservation of natural resources is still an alien idea to most Africans. Few yet understand that the remnants of the once-great herds of big-game mammals are potential keys to economic growth, and many Africans resent the reservation of lands for national parks and wildlife sanctuaries.

During the past few years many individuals and organizations in Tanganyika and elsewhere have worked against time and tradition to foster a national pride in the nation's parks and their animals, and to some extent have met with success. Most Tanganyikans, however, still object to the setting aside of land and money for purposes they do not fully understand and will not support until they are convinced that national parks can contribute substantially to the economy through tourism. The latter will not develop until present and proposed Tanganyikan parks are equipped with certain minimum facilities.

Administrators of the Tanganyikan parks believe that an important first step is to convince Tanganyikans that national parks are not only desirable but absolutely necessary. As a second step they hope to enlist support of the more developed nations through encouragement of park visitation from overseas.

A third way in which maturer countries could be helpful lies in the setting of good examples of national park management for the young governments of Africa. —*P.M.T.*

Rachel Carson

NOT LONG AFTER THE FIRST EDITORIAL was written the press announced the death of biologist-author Rachel Carson, whose research into the obvious and subtle menaces of pesticides was so ably presented in her recent *Silent Spring*. Association members will feel, with the trustees and staff of the organization, that the world has lost in Miss Carson an able scientist and a courageous conservationist whose contribution to the welfare of the life community has been immeasurably great. —*P.M.T.*

NATIONAL PARKS *Magazine*

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Photograph courtesy Interior Department, Grand Canyon National Park: Steve Leding

Adjacent to Grand Canyon National Park on its western or downstream side is Grand Canyon National Monument, preserving nearly 200,000 additional acres of the Colorado River's vast work of erosion. In this preservation is found also a strange manifestation of past volcanic activity in the neighborhood of the canyon —the remains of lava flows which, traversing the plateau above, cascaded in fiery streams into the canyon to form lava-dams, since cut through by the river. The entire thirty-nine river miles of Grand Canyon National Monument would be inundated by the reservoir waters of proposed Bridge Canyon dam below the monument's downstream boundary; Grand Canyon Park also would be invaded.

The Association and the Magazine

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

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

Dues are $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. Dues in excess of $5 and contributions are deductible for Federal taxable income, and gifts and bequests are deductible for Federal gift and estate tax purposes. As an organization receiving such gifts, the Association is precluded by law and regulations from advocating or opposing legislation to any substantial extent; insofar as our authors may touch on legislation, they write as individuals.

Membership in the Association carries with it subscription to *National Parks Magazine*. School and library subscriptions are $4 a year; individual copies 50 cents. Letters and contributed manuscripts and photographs should be addressed to the Editor at Association headquarters. The Association is not responsible for loss or injury to manuscripts and photographs in transit. Return postage should accompany contributions. Title Registered U.S. Patent Office. Indexed in the *Reader's Guide to Periodical Literature*. Printed in the U.S.A. Second-class postage paid at Washington, D. C.

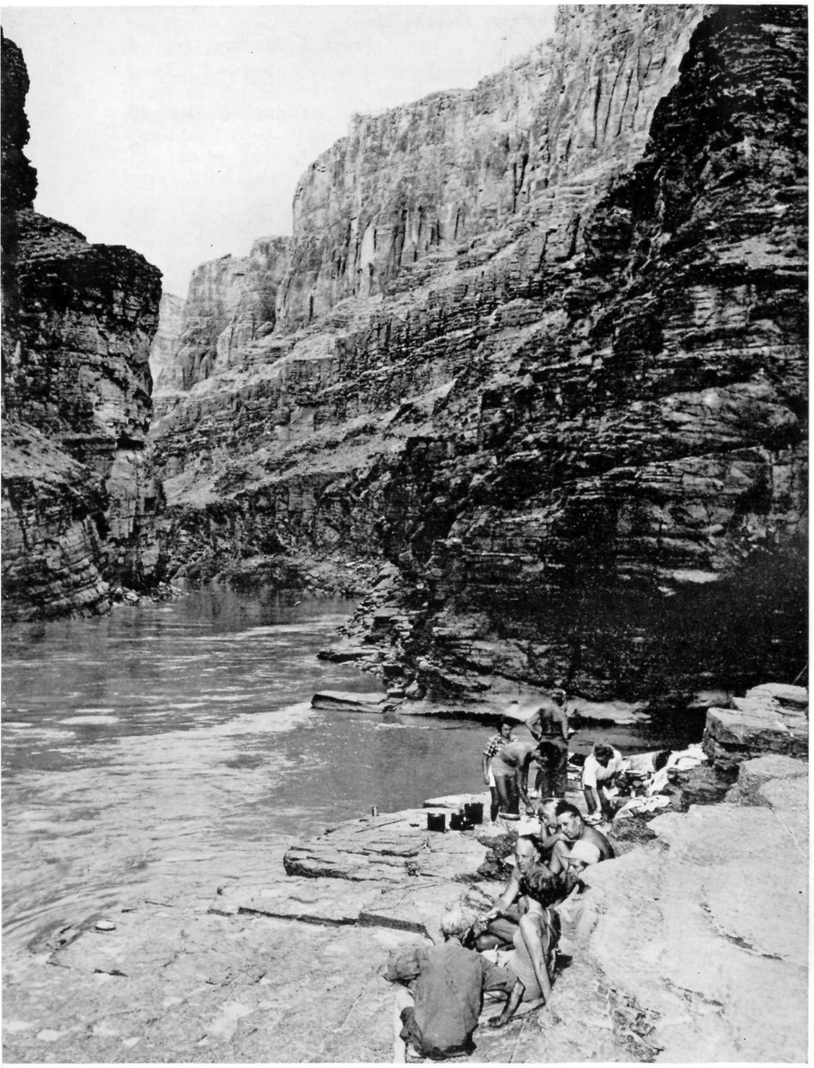
NATIONAL PARKS ASSOCIATION, 1300 NEW HAMPSHIRE AVENUE, N. W., WASHINGTON, D. C. 20036

A river-runner tells of adventure and mystery in

Exploring the Colorado: Lee's Ferry to Lake Mead

By Frank E. Masland, Jr.

Photograph by courtesy Otis Marston



A river-running party prepares to make camp on the Colorado "on the stones that baked all night," in the words of the photographer who took the picture at the left. The view looks upstream; Havasu Creek, in the southwestern extremity of Grand Canyon National Park, is seen entering the Colorado from the right.

THE COLORADO IS BORN HIGH UP in the Uinta and Wasatch Mountains, of the wedding of many springs. When it flows by Phantom Ranch at the mouth of Bright Angel Canyon, in Grand Canyon National Park, it has traveled half its course of 2000 miles and accomplished half of its ordained task. For the Colorado has been busily engaged for several million years in carrying on its share of the universal task of all great rivers: laying plane the mountains and depositing them, grain by grain, into the sea.

Man is now just as busily engaged in disrupting nature's program. Dams built in months instead of millenniums are moving nature's repository from the sea to inland lakes. What the ultimate result will be only nature knows, but a geologist of world renown and a specialist in the canyon country has pointed out that in nature there is a reaction for every action, and that the accumulated weight of great deposits in one area can, as at the delta of the Mississippi, cause both a depression and a corresponding rise elsewhere. Southern California is largely composed of the topsoil from Wyoming, Utah, Arizona, and Nevada. Now the product of continuing erosion will accumulate inland behind a series of dams. But our concern at the moment is with that which we will lose if dams are built downstream from Phantom, and so we leave unpleasant geologic potentials to the future.

Colorado River runners usually rest for two or three days at Phantom Ranch in Grand Canyon Park. Phantom is eighty-seven miles from Lee's Ferry, just below the Utah-Arizona border, where most traverses have their beginning. By then one is in a condition to appreciate soft beds and cold baths. Some unknown river-runner once remarked: "It's all downhill from here to Mead." It is, precipitously, thrillingly, wondrously so. There are many rapids, sheer red-walled cliffs, and dark and threatening granite gorges. But, above all, the river-runner's little boat will carry him through the pages of the history of the ages from the Archeozoic to the Cenozoic—from the vastly ancient to the "recent" on the heroic scale of geologic time.

More Dams Proposed

With the building of dams on the upper Colorado, this stretch from Phantom to Mead is of special interest to those concerned with the preservation of wilderness. It lies within the Grand Canyon National Park and the Grand Canyon National Monument. But it also possesses many features, often startlingly beautiful, and not to be found elsewhere. Conservationists should gird their loins, for the great river that created this beauty, this moderator of earth-forces for three hundred thousand square miles of the West, faces the threat of additional dams that would destroy the integrity of canyon, monument and park.

Those who have been privileged to travel the trail of the river from Phantom down to Mead are acutely aware of the treasures that the backwater of dams will bury forever. The world is concerned because of the flooding of Abu Sembil by the rising Nile. Should we not be equally concerned with the preservation of the masterpieces of the Great Architect in America?

Like Death Valley and other river basins, historic or prehistoric, that have been subject to the erosive action of the elements, much of the beauty of the Colorado is to be found in the side-canyon tributaries. In many there are streams that, deep in the labyrinthine head of the canyon, burst in full flow from a hole in the wall. In others are hidden lovely little pools that give life to moss and fern and columbine.

Shinumo Creek is one of these. A half-mile from the river there is a pool large enough for a cool swim. At the far side the water cascades over a twenty-foot rock. Under the falls and in back of the rock is a tunnel that leads to the valley above: a wide, verdant, watered valley, lush with grass and cottonwoods, where feral burros roam undisturbed. Alien footsteps send them scurrying, foals straining to match their mothers' strides. In the distance a buck and two does gaze curiously, to join the burro stampede as it passes by.

Specter Chasm is a very narrow and very shallow gorge that lies buried deep in the heart of the earth's first ages. Black and red schist walls are so close that heat radiates from them in visible waves. Not more than a hundred feet wide at the entrance, it quickly narrows to half that width. Visible from the entrance is a high, dry waterfall that blocks the gorge from side to side and stops all access to the canyon depths. The chasm is well named, for the dry falls is the black canvas upon which the flash floods of a million years, using travertine as their pigment, have painted a ghostly white shroud.

There is no limit to the tools that Nature has put to use along this river trail. Ice and rain to carve with, sand to scour and polish, and a limitless range of colors, from the white of travertine through all the reds of the soft shales to grey and black water-stain and "desert varnish"; all are here.

Those who gave names to the canyons' treasures were inspired. No other name could suit Elves' Chasm quite as well. It is hidden from the eyes of the river. A short walk and a bit of a scramble over house-sized boulders is rewarded by one of the loveliest sights

Most of the many falls which cascade into the side-canyons of the Colorado are waterfalls; below is a "frozen" falls of travertine, built by the evaporation of carbonate-laden waters.

Photograph by the Author

in the course of the whole two hundred fifty miles. There is something ethereal and elf-like about its beauty. In a land where much is brutal, where weight and power are primeval forces and where colors run the gamut of reds and browns and blacks, Elves' is a light and stirring contrast. Dainty, necklace-like strings of diamonds fall, gem by gem, from the smooth edge of a sky-blue cup, pausing now and then on their way to give light and life to fern and moss-blanketed grottos, finally adding their sparkle to the depths of a turquoise pool that nestles in the heart of a columbine bouquet.

Meeting of Waters

Tapeats Creek is quite a different memory. The stream comes charging into the river with such force that its clear blue waters remain intact until, well out from shore, they are drowned in the muddy torrent of the Colorado. Tapeats, born in Thunder River, deep back in the canyon recesses, possesses a unique distinction. It is the only stream from Phantom to Mead in which trout are present. And they are present in numbers, eager for any bait that is offered. The beach is long, level, sandy, perfect for a fish fry, and a comfortable bed for tired but contented bodies. The setting sun glows brilliantly on the far red wall; the tinkling music of the creek is like a flute occasionally breaking through the roll of the river's drums. Sleep comes easily and quickly.

Deer Creek Falls is the gateway to Enchanted Valley. It is a gateway hidden by a stream that plunges a hundred feet from the Tapeats shale to a pool worn in the solid rock. Between pool and river lies a fine white sandy beach. Camps are pitched nearby the Falls, and the hardy can wade through the pool and under the Falls, standing close against the rock while a hundred-foot shower beats on head and shoulders.

It is warm in the Canyon of the Colorado in summer, often a hundred degrees and more. Shade is eagerly sought. It was a hunt for shade that led to the discovery of Enchanted Valley. Some years ago, several river-runners entered a narrow cleft. They followed the side of the Falls to the rim above.

Each stream born back in the hidden depths of this wind-and-water-worn world cuts its own private gorge from the secret place of its origin to its rendezvous with The River. Six hundred feet above the white dots that marked their boats drawn up beside the river the river-runners rested awhile, then entered the gorge the stream had cut. Teetering along a narrow ledge, they could hear the stream far below, whistling somewhere in the dark. There was no trail—just a ledge, at times not more than twelve inches wide. In places the wall leaned out over the ledge. Quite suddenly, a half mile later, the canyon doors opened. There lay the loveliest of valleys, perhaps three miles long by a third as wide. This was Enchanted Valley.

On all sides of the Valley red walls tower a thousand feet or more. Far off to the northeast, the stream bursts from a hole in the cliff and flows through the valley in a series of sparkling falls and pools. Here, high above the barren river, all is lush and green. There are many cottonwood trees, cat's-claw, mesquite and willows. Heavy grass grows near the stream, and watercress in the pools. Each falls is festooned with mosses that glisten green, red, and blue through the swift, translucent water.

The desert wren's long-drawn plaintive song, originating nowhere, fills the sky with music. Cliff swallows and fly-catchers dart busily about while water ouzels dip in and out of the stream, fluttering from pool to pool and occasionally saluting with one of the sweetest songs in the bird kingdom. Deer are in the vale and signs of wild burro are frequent.

A pair of prairie falcons at home on an impregnable ledge screams its annoyance, while black shadows of wheeling ravens glide along the smooth red cliffs.

Fox and cat tracks follow the stream and now and then a squirrel, curious and unafraid, chatters from a nearby tree. Here in this limitless desert, in these endless miles of wornout earth, is life, an inner sanctum, six hundred feet above the river, two thousand feet below the world above.

Stevens Aisle, Conquistadores Aisle and the Middle Granite Gorge follow one after the other. The limestone aisles are lovely. There are three granite gorges—Upper, Middle, and Lower—and all are bleak, black, narrow, and unscalable. In places the sun seldom reaches the river, and the water, as though resenting these passages of eternal gloom, flows swiftly, savagely, sullenly. But this course in the history of the ages would be incomplete without its granite pages. It is in them that the voyager drifts through the beginning of time.

Journey Through History

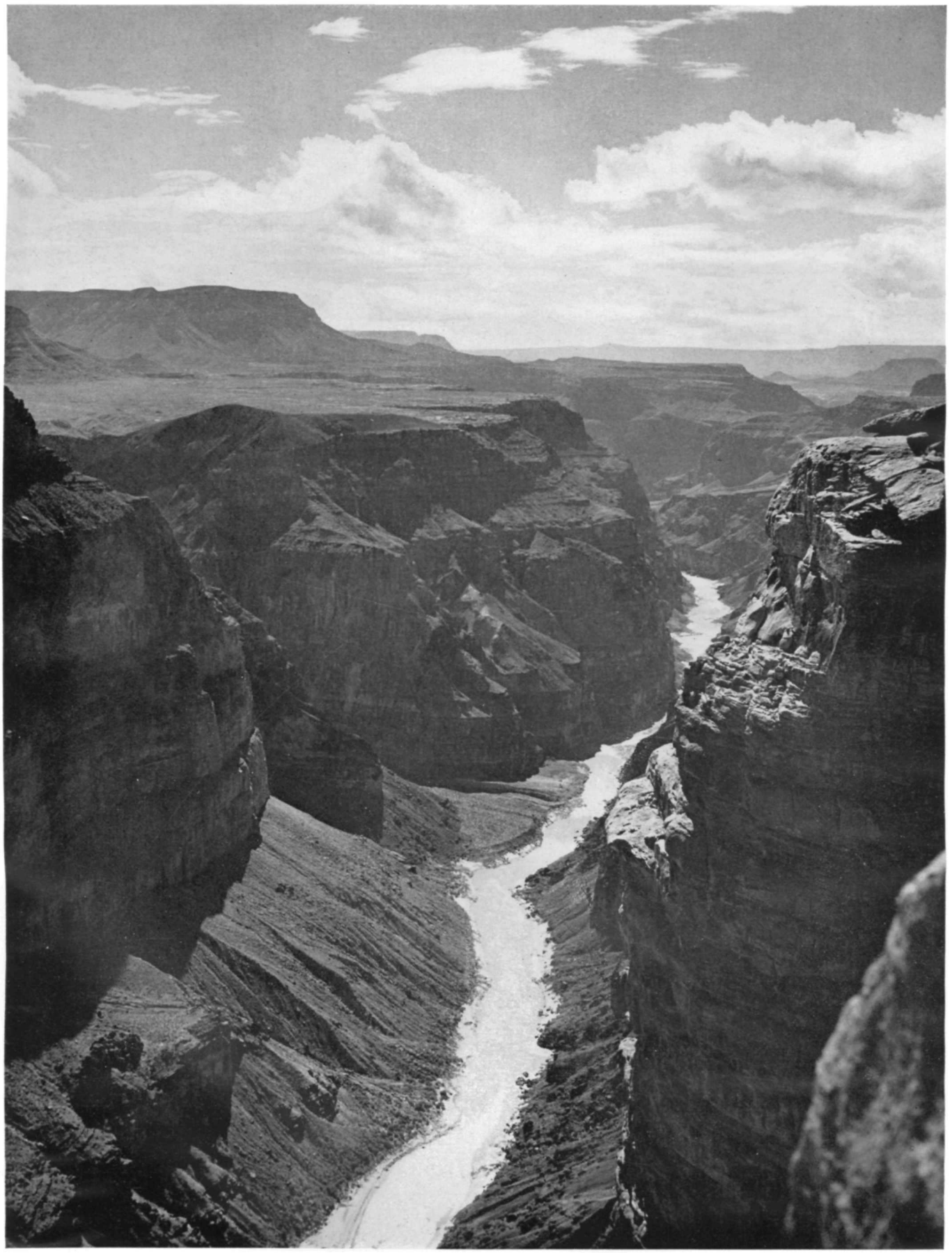
The story of the earth's formation and the gamut of life from algae to man is inscribed on the canyon walls of the Colorado and the rocks that emerge from its waters. It is written in the bleak, forbidding, densely crystalline four-billion-year-old Archean schists that once were mountains of Alpine height; but the tsory now can be found only where the ceaseless searchings of the river have uncovered them for man to see—in the red shale and purple granite of the Algonkian Era, in the great Redwall of the Paleozoic, and the white-capped rim of the Mesozoic. And finally, in the distance against the horizon, man appears on the sky-flung hills of the Cenozoic Age.

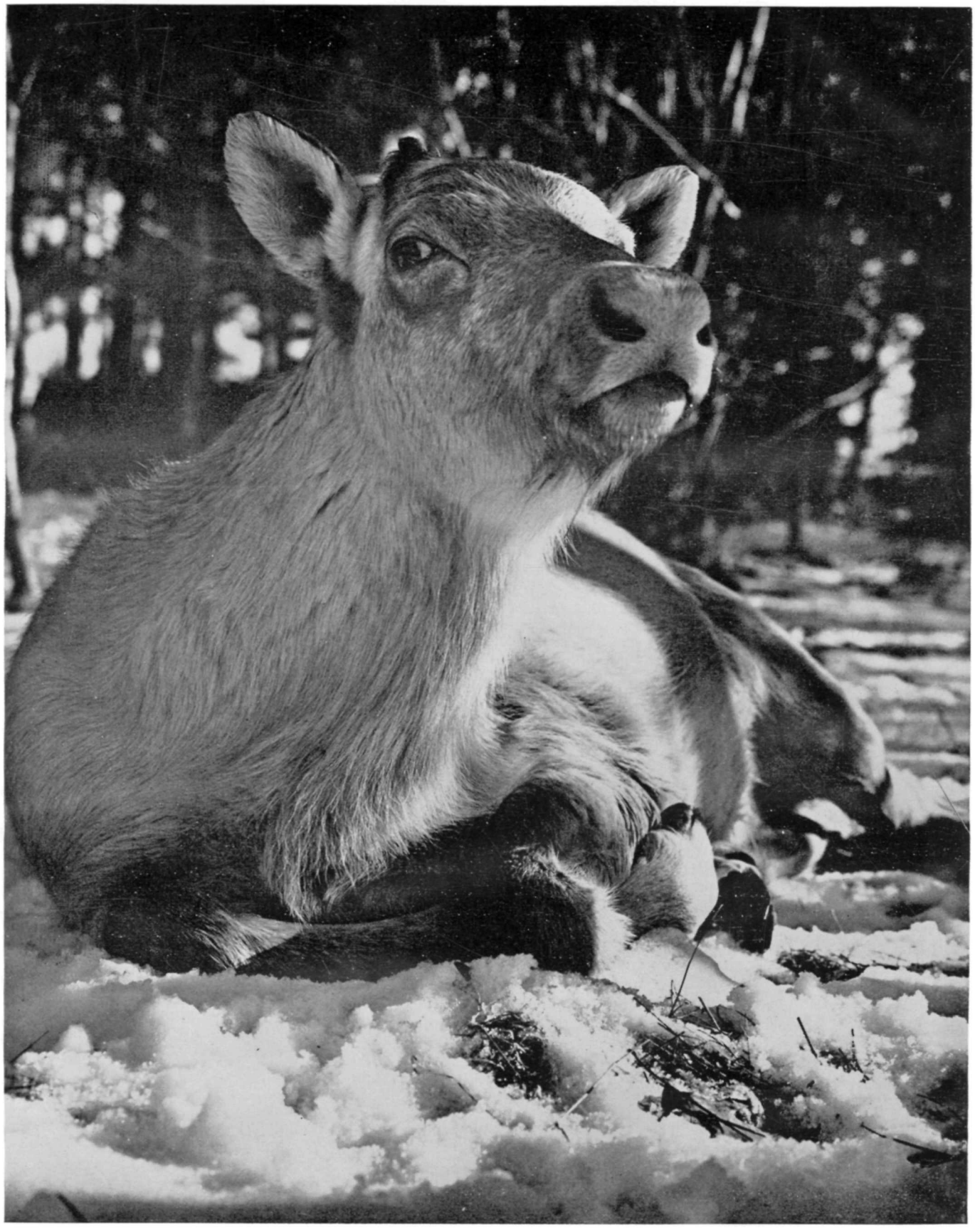
During much of the passage through the Granite Gorges, the river is so narrow that the dark, smooth, towering walls seem but an arm's-length away. The sense of isolation, never entirely absent, becomes a burdening realization. All consciousness of any other world is lost. There is nothing but the water, the ancient rocks that close in on both sides, and a patch of blue above—that and nothing more.

(continued on page 15)

J. M. Eden, courtesy Grand Canyon Natural History Association »

Leaving Grand Canyon National Park the Colorado river-runner enters another great scenic and scientific preserve—Grand Canyon National Monument, the entire river-reach of which would be inundated by the reservoir of the proposed Bridge Canyon dam. The view in the photograph looks west (downriver) from Tuweap Point in the western part of the monument; Lava Rapids is at the mouth of the canyon entering the Colorado from left in the middle foreground.





Woodland Caribou Comes Home to Maine

By Bill Geagan

Photograph by Bill Cross

A FRAGMENT OF ORIGINAL AMERICA has been reborn in the spruce and hardwood forests that clothe the rough terrain of Maine's 200,000-acre Baxter State Park in the Mount Katahdin wilderness.

This is a project to restore to a long-favored habitat the lordly woodland caribou which, because of earlier excessive shooting, has been extinct in Maine for many years. (The last living specimen was seen in the vicinity of Mount Katahdin about 1908).

Several years ago Maine's Department of Inland Fisheries and Game had made arrangements with Canada's Newfoundland to exchange ruffed grouse for young caribou. The Department had been urged to make the swap by a group of Maine conservationists led by State Senator Ida M. Harrington, a Penobscot County grandmother.

Six birds were exchanged for each mammal. Although considerable difficulty was experienced in live-trapping the wild and wary grouse, enough birds were finally taken to bring four caribou to the State Game Farm in the town of Gray, not many miles from Portland.

Through the efforts of Senator Harrington during the 101st session of the Maine Legislature, Governor John H. Reed signed a bill appropriating $8,000 for the purchase of twenty more caribou, and the unsatisfactory grouse-caribou exchange project came to an end. Late in the fall of 1962, twenty-four caribou were transported from Gray by Navy helicopter and released on Mount Katahdin. These caribou provided the "seed stock" for what is hoped will one day become a large and stable herd.

Release of the Mammals

The husky animals had been trucked into Maine from Newfoundland and quartered at the Game Farm, where they seemed in excellent health and very much at home. They were carefully studied, watched, and tested for disease. When conditions were favorable they were released in the rugged wilderness of Baxter Park to forage for themselves, as their ancestors did many years ago.

Authorities on caribou food and habits from the Fish and Game Departments of both Maine and Newfoundland have found the ecology of Baxter Park still suited to the species. They believe the experiment will prove successful, and that the growing herd will not only help round out the ecological picture in the park but also provide an additional point of interest for Baxter visitors.

Some authorities, including veteran woodsmen, believe that it was a rapidly-increasing deer herd, with its competition for the natural food supply, that drove the caribou survivors of the shooting slaughter to scatter through New Brunswick and other parts of Canada. Chief Henry Red Eagle, of Greenville, Maine—who had been an actor on location with the old Biograph Motion Picture Company in the wilderness of New Brunswick around the turn of the century—tells of hearing a thunderous approach, followed by the sight of a huge herd of caribou swarming in from the nearby Maine boundary.

The moose and black bear populations in the Katahdin region probably are as large as they were in 1900, but whitetail deer are now more numerous than ever before. Whether the whitetails will have any effect on the Baxter Park caribou experiment remains for the future to answer. ■

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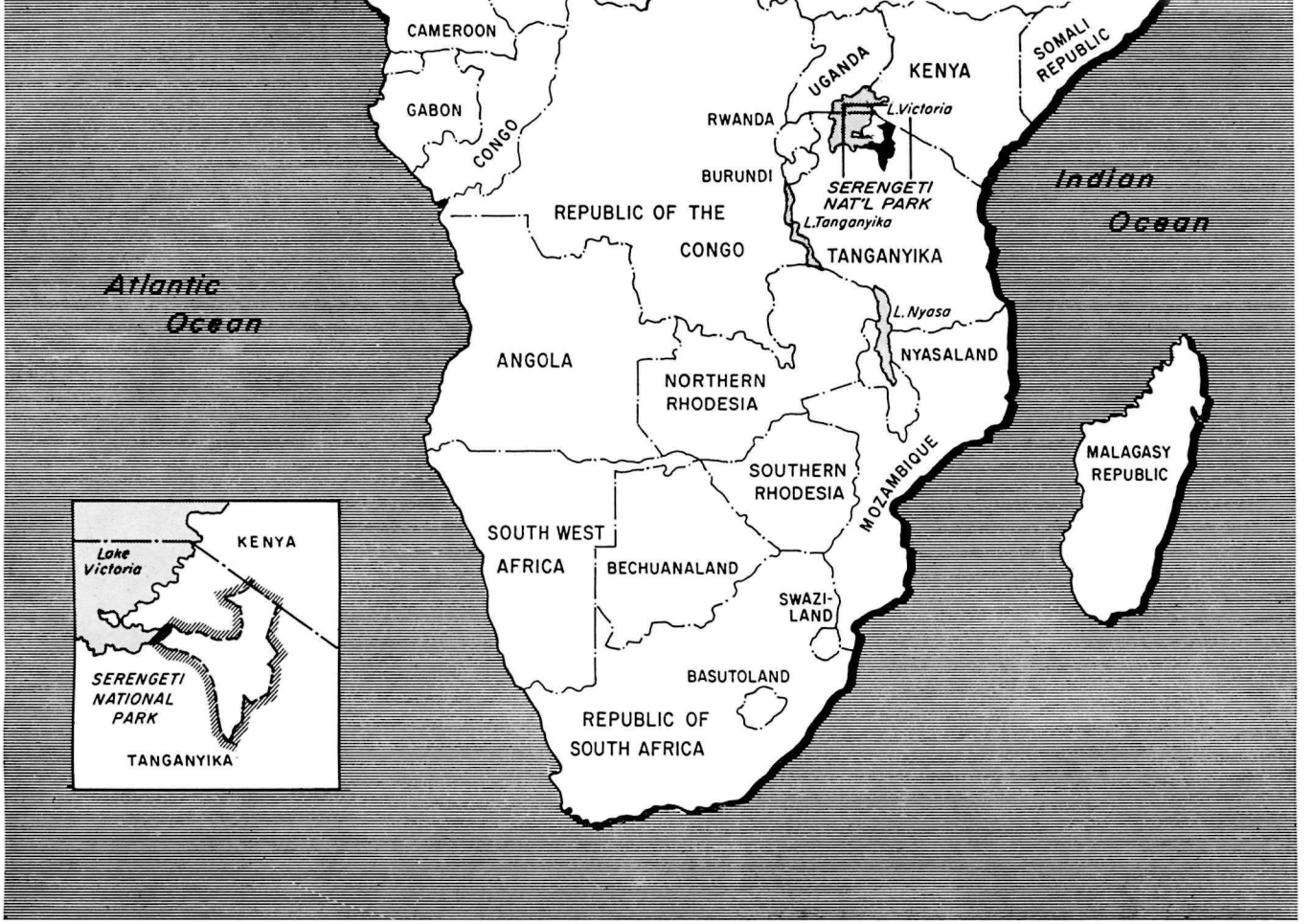
Pampered by game authorities and lauded by Maine officials, a young woodland caribou peers suspiciously about his temporary home at the Maine Game Farm. This specimen has become part of the first caribou herd to exist in Maine for nearly sixty years.



Mammal migration poses problems in Tanganyika's

Serengeti National Park

By Elspeth Huxley

We drove in Land-rovers south from Seronera, the safari lodge in the eastern sector of Tanganyika's Serengeti National Park, on a fine morning and across a great treeless plain, open as the sea: a kind of land ocean, colored the tawny buff of ripening wheat and stirred by a wind creating rippling waves among the panicles of red oat grass. Here horizons have the simplicity of the primeval, and above them hang great billowing cumulus clouds that cast dark stains over sunlit grass in ever-changing patterns. These great clouds, fluffy as whipped cream, move imperceptibly across the blue, and yet mysteriously seem never to obscure the sun.

We saw few beasts at first, but many birds: a big tawny eagle, the handsome grey-and-white Montagu's harrier, the black-shouldered kite, and abundant rollers, most brilliant of birds—jewels shining in the greeny-yellow grass. Both species are common; the lilac-breasted and the even more brilliant European roller, with his dazzling azure breast. Many plovers wheeled and called; a black-shouldered heron brooded majestically; mottled sand-grouse squatted until almost run over. There were no hills, but sudden piles of rocks erupted as if tossed there by some giant at play. We saw a few jackals, the silver-backed and the larger Asian variety; a bristled wart-hog with his coarse tusks and look of mock-ferocity; and small bands of Thomson's and Roberts' gazelle playing last-man-over-the-track with sudden spurts of flat-out speed.

Soon after we left the track, to head across open plains for Lake Lagarja on the park's southeastern extremity, we came to the first signs of the great annual wildebeest migration: not the mammals themselves but camp-followers, scroungers, and subtlers. These

were the hyenas. They stood or sat about in small groups, with long necks sprouting from the grass like sea-serpents surmounted by cats' heads. Try as one may to be fair to hyenas —they do a useful, needed job, just as dustmen do, or undertakers; why should we despise or shun them?— try as one may, one cannot like hyenas. They are ugly, mangy-looking, cringing. A copulating couple scarcely glanced up as we jolted by.

These creatures wait on the migration's fringes to feast on wildebeest calves and on the old and sick that fall out of the march. The calves must struggle to their feet and trot after their mothers before they are dry. If they get left behind they are doomed. No wonder the hyenas look fat—and jackals too, scavengers just as much as the hyenas, but so much more attractive. Clusters of heavy, bald-headed vultures squatted on the ground like ill-natured old men.

We soon came to the first of the wildebeest, a few outliers; then to the start of the herds which spread out into long, close-packed lines of these ungainly mammals that look like bison. Their coats are silvery-grey and shaggy over the shoulders; they have sloping quarters and long, melancholy, clownish faces fringed by yellowish-grey beards. As they move they make queer, abrupt, grunting noises to which the closest parallel is the croak of a bullfrog.

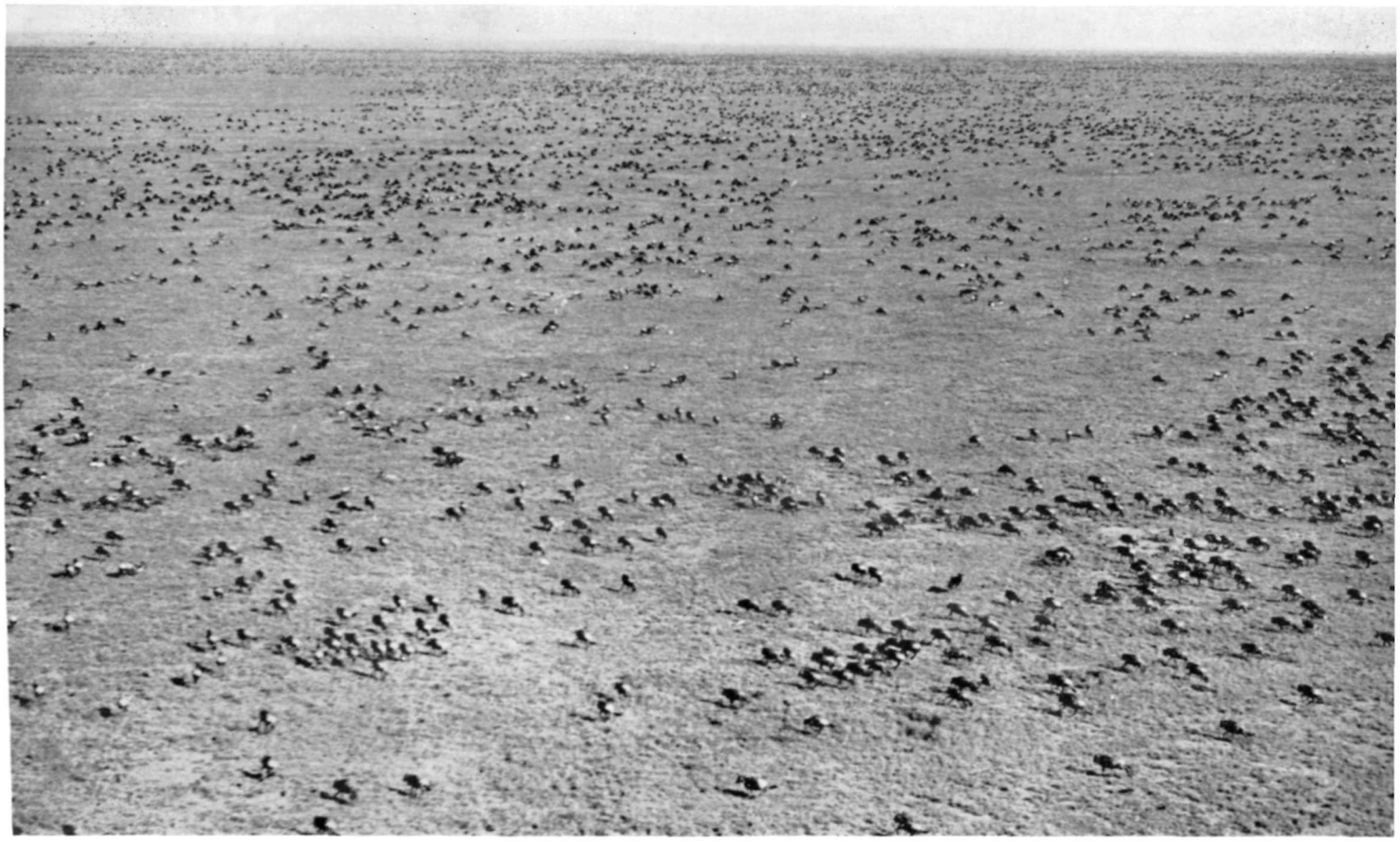
The country became more rolling, and from a distance the slopes looked thickly strewn with slow-moving, black boulders. Bullfrog-grunting filled the air. One stream we passed through, a file stretching far out of sight, was estimated by the Tanganyika Parks' director, John Owen, to contain perhaps 30,000 to 40,000 animals. But it was anyone's guess, and hard to say where one file ended and the next began.

The wildebeest kept up an even pace, pausing now and then to crop grass, not pressing or hurrying. In October and November, when the eastern movement starts towards fresh grass brought on by rain, they gallop on as if pursued by furies. At this time of year, in April, they proceeded at a much more sedate pace.

The Serengeti Park has an awkward shape with a long, narrowing wedge thrust westward towards Lake Victoria. The boundary runs to within one and a half miles of the lake, but does not touch it. This is where rainfall is highest and where the wildebeest and zebra spend the dry season, not in big herds, but dispersed in small groups. Some stay within the park, but a great

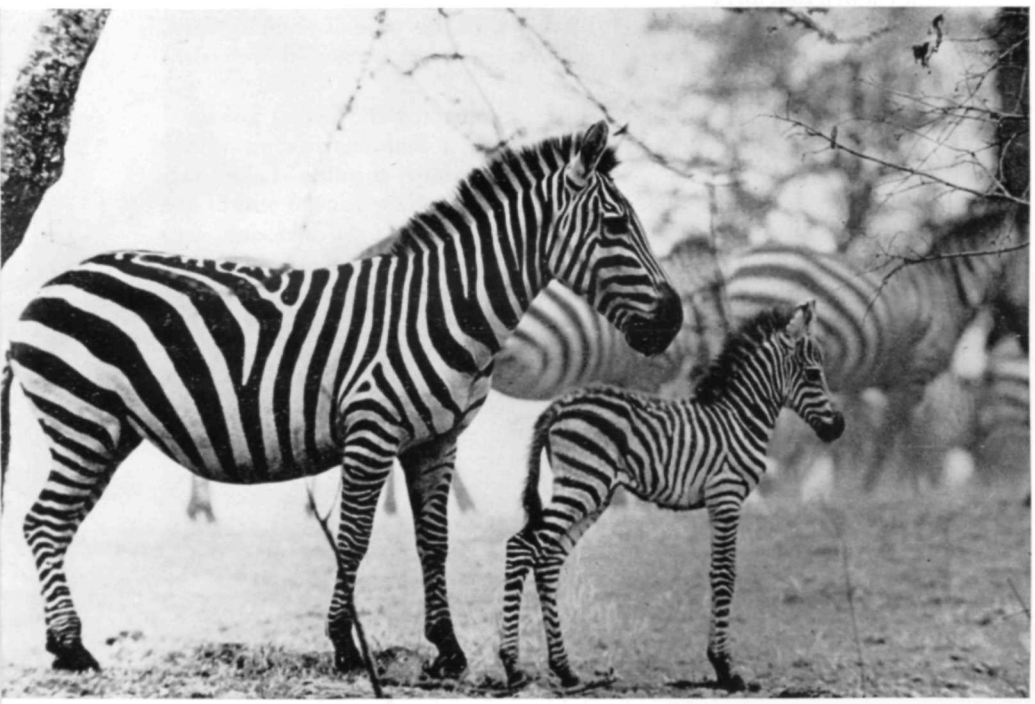
Migrating wildebeest cover the vast prairie lands of Tanganyika's Serengeti National Park in their unending search for better forage and drinking water. Over 250,000 of the ponderous beasts join in the massive march, which takes them out of the park to be harassed by poachers and resentful farmers.

Photograph by Myles Turner



many disperse outside it and are then at the mercy of poachers, hunters, and the cultivators who ring the boundaries with their plots of mealies, beans, and cotton. As the human population grows, the cultivators press in on an area whose dedication to wildlife preservation many of them resent.

During October, if all is normal, rain falls in the dry eastern regions of the park. Hundreds of miles to the west, moved by some mechanism no one understands, the zebra and wildebeest start to gather in their long files to gallop eastwards, often led by two or three zebras. (It is the zebras who take the initiative; a long file of wildebeest will sometimes wait patiently near a water-hole until a few zebras have finished their drink).



Photograph by E. Harvey

A mother zebra and her long-legged youngster stop for a rest before continuing on the long migratory journey. Zebras are the first to start the migration; their movement is a signal to the wildebeest, who follow the zebra on their thousand-mile trip.

The files converge into "armies" of tens of thousands. Total numbers fluctuate; at the moment they are probably in the region of 350,000 to 400,000 wildebeest and zebra. This migration is a year-long phenomenon divided into four phases: the wet-season concentration and calving from December to May; the westward movement to the dry-season dispersal areas taking place in May and June, popularly termed the migration; a slow dispersal over the western dry-season area between June and October; and then an eastward movement to the short-grass areas replenished by rain occurring between October and December. The whole cycle may cover up to a thousand miles.

Next morning we flew over the migrations. The park has three light aircraft, and several of the wardens, including the park's director, have learned to fly in order to quarter more effectively their five thousand square miles of uninhabited plain and bush—uninhabited, that is, officially, but often encroached upon by poachers. During my short visit, news was coming in by radio link of game-pits and trenches dug by poachers in the north, near the Kenya border, and the trapping in them of several buffalo.

No Sign of Humans

Flying east, soon after sunrise, every tree beneath us stood out like a peg casting a sharp pencil of shadow over tawny grass which was lightly streaked by little tracings made by the animals' feet. A herd of buffalo, fat as black pigs, clustered by a seasonal stream marked by a fold in the ground and a line of flat-topped thorn trees. Everything was peaceful, gentle, serene and smiling—no sign of man, the destroyer. "Here the world is young and fragile," reads a message on a signboard at Seronera airstrip, where most visitors nowadays enter the park. The word "fragile" arrests you. Does it apply to a slice of raw Africa? In the sweetness of this golden early light, you see that it does.

We came to the wildebeest armies just after we had flown over a long, straight furrow marking the Serengeti's eastern boundary. The migrations had crossed this boundary and were outside their sanctuary and in the Ngorongoro Conservation Area. In 1959, more than 3,000 square miles were excised from the park to fulfill promises made to the Masai people, who claimed this area as part of traditional grazing grounds.

Human Interests Prevail

This excision was made in accordance with the principle that when the interests of men and those of wildlife conflict, those of men should prevail. But no one inquired too closely into *which* human interests were to have precedence: those of a small number of nomadic herdsmen—and less than one hundred Masai were thought to live permanently in the disputed area—or those of the very much larger number of visitors who come, and will come in ever-growing numbers, to the Serengeti.

By excising this area, which includes the spectacular Ngorongoro Crater and its highlands, one of Africa's foremost tourist attractions, the Serengeti ceased to be an ecological unit, and the migrations no longer take place within its borders. In fact, the animals now spend about six months of the year outside the park. They are safe enough, as a rule, within the three thousand square miles of the Ngorongoro Conservation Area, where hunting is forbidden, but elsewhere Tanganyika's citizens have the right to hunt, and do so: there are, for instance, believed to be at least 200,000 old-fashioned muskets in African possession. If each musket accounts, at a very conservative estimate, for five animals a year, some measure

of the slaughter can be estimated—at least a million head; and that is quite apart from the heavy toll taken by long snare-lines at water holes, by pits and trenches, and by arrows tipped with poison made by boiling down leaves and bark of the acocanthera tree.

That morning we flew over two wildebeest and zebra armies with perhaps 30,000 to 40,000 animals in each, seething below us like streams of ants, their coats and beards silvery-grey in the sunshine. They were on the so-called short-grass area, a region of very low rainfall, where the climax of the vegetation is a herbage incapable of growing more than three or four inches high. These plains animals love it; but only after rain does it offer them sustenance. When it is severely grazed a low, bushy shrub called *Indogofra baseflora*, with a pretty little reddish flower, covers much of the steppe. There are practically no trees.

The migrating animals spend April and most of May outside the park, partly in these short-grass areas, and towards the end of May join up and trek west again. They re-enter the park and head for the narrow corridor pointing towards Lake Victoria, where they disperse and spill once more across the park boundaries into "controlled areas" to the north and south. Here hunting is theoretically controlled by license, but staff is lacking, public opinion antagonistic, and poaching rife.

Public Support Is Needed

It is here that "cropping" the animals to an agreed scientific plan might be tried as a way of satisfying the needs of the cultivators for meat and profit. If the animals could be used, and be seen to be used, to satisfy a human appetite, public opinion might veer away from poaching and enlist on the side of control, and a planned, humane culling of the great herds might result. But there are difficulties.

"Cropping is not an ecological necessity," one of the biologists who is studying it told me, "but may be a way to buy a right of passage for the wildebeest through the controlled areas. And it could at the same time become a source of protein for the local people."

The park authorities, under Tanganyika's Ministry of Lands, Forests, and Wildlife, are conducting a vigorous and, on the whole, successful campaign to sell Tanganyika's assets to the Tanganyikans, and in particular their wildlife and the beauties and amenities of their parks. These, the wardens stress, are not there just for overseas visitors, but also for the enjoyment of the citizens. They are tackling the young especially, and have built hostels to which students and school children come in parties for a charge of one shilling a day apiece. All this is popular and effective, but it takes time—a lot of time—to leaven the mass; and also money, of which there is never enough.

Money is needed also for research. So little is known about the habits, behavior and life histories of the animals, and so much remains to be discovered. This is not only a matter of pushing the frontiers of knowledge a little farther; it is a matter of ascertaining facts on which to base policies. When three thousand square miles were lopped off the Serengeti Park, experts believed that the wildebeest migrations would still be contained within the boundaries. They were wrong, and the concept of the park as an ecological unit was ruined. No one wants to see a repetition of this blunder.

What are the biological reasons for these great seasonal movements of plains animals? What routes are followed and why? Does each beast follow the same route? Do some never migrate at all? What is the herd structure; does it vary from year to year, or from day to day? What are the population dynamics of wildebeest and zebra? Such questions are legion. Answers so far are few.

Biologists Probe Problems

In 1959 the brilliant young biologist Michael Grzimek, son of the director of the Frankfurt Zoo, was killed in a flying accident while counting animals on the Serengeti. Money subscribed to a memorial fund was spent on a small research laboratory at Banagi, near the Seronera lodge. Now the United Nations Special Fund, acting through its food and agriculture organization, has made a generous grant, and six biologists are at work there under the direction of a distinguished Belgian biologist, Dr. Jacques Verschuren, until recently chief biologist to the Parc National Albert in the Congo. His first task is to assess the carrying capacity of the park in relation to the animal population, and to answer the question of whether or not the park is overstocked. This involves a close aerial count, which is proceeding. While it is too early to give a final answer, preliminary work suggests that at present overstocking is not a serious problem; but it could become so, if present tendencies develop.

How can it be dealt with? Cropping is perhaps one way. Another is to make fuller use of the grazing within the park. Parts of it, at present, are neglected by the animals for reasons which are also not yet fully understood. These plains animals have strong food preferences: some grasses they like, others they fall back on when pressed. Their preferences may even vary according to the season. Could this be connected with the mineral content of the grasses? If so, what minerals do they seek—and might it be possible to supply these in other forms, so as to spread the use of pasturage and so increase the park's carrying capacity?

This is one example of the kind of problem game biologists are looking into, and of how their answers might become a basis for a new science of range management as applied to wild animals. Again, take the question of the short-grass areas so much favored by the plains species. Could any of the areas with longer herbage, which tend to be under-grazed, be converted to short-grass pastures, possibly by the use of fire? If this should prove feasible, more wildebeest and zebra might be kept for longer periods within the park instead of seeking their favored pasturage outside its boundaries.

It is only in the last five years that a close study of the habits, life-histories, and population dynamics of animals in the wild state has become possible through the development of the technique of "darting." This consists of anesthetising the animal by firing into it a dart, or plastic syringe, loaded with some drug such as succinyl

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One of the best-known writers in England on African problems, Mrs. Huxley has been observing and writing about Africa's wildlife for the past twenty-five years. Her work includes many books on East and West Africa, and novels as well as numerous articles for periodicals.

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choline, which temporarily paralyzes the neuro-muscular system. The biologist can then brand or otherwise mark the inert animal, or fasten a collar around its neck, and subsequently pick it out with binoculars and map its movements.

The darting technique is now well developed; scientists know the right dose, which may vary with age for most species, from rhinos to small animals. Every year more and more beasts are being marked in this way and gradually a picture is forming of their movements and behavior. A German scientist working at Banagi, Dr. Klingel, has carried things a stage farther by discovering that just as no two human finger-prints are identical, so are no two zebras alike in their markings. Now he has worked out a technique by which an individual zebra can be identified by its stripes on the photographs, one taken from each side.

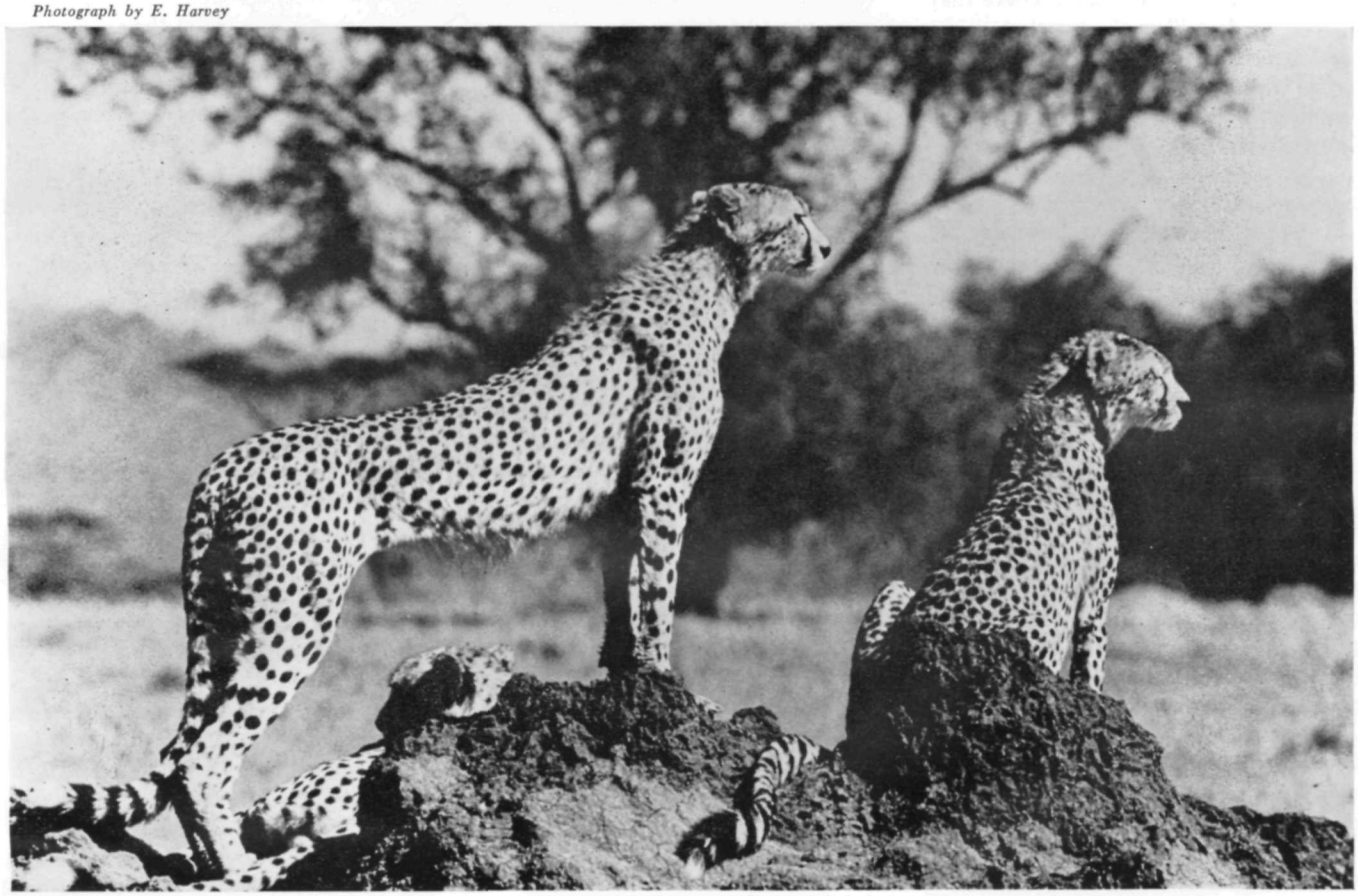
A British member of the team, Murray Watson, at work on wildebeest migrations, is following up a clue provided by an analysis of the river water on the Serengeti. The fluorine content is exceptionally high: fifteen parts per million as against a normal content of two parts. Too much fluorine can damage the teeth and even rot the bones. Wildebeest, it seems, prefer rainwater rather than that of the river, when they can get it. This suggests the possibility that a root cause of the migrations may be not only a search for short grass, but for sweet water.

A whole new world of fascinating wildlife behavior is opening up as this research, still in its earliest stages, proceeds. Much remains to be done. It is only in the last year or so that a botanical survey of the Serengeti has been completed by Dr. P. J. Greenway, the foremost taxonomic botanist in East Africa, who has identified over two thousand species. Now the birds are under scrutiny. This part of Africa is fantastically rich in bird life. More than 1,600 species have been recorded, as against about 700 for the whole of the United States. Nowadays the Serengeti birds attract as much, or even more, attention from overseas visitors as the animals. The skins of over 350 species have been collected and prepared for a museum to be built, if money can be found, at Seronera.

That is the crying need—money. Tanganyika is a poor, sprawling country with undeveloped natural resources and all to do at once for its backward population—schools, hospitals, clinics, roads, housing, projects of every kind —all awaiting capital. It cannot also preserve and develop its parks without help from other countries, whose citizens come in increasing numbers to enjoy them. The independent African Government, since it took office some two years ago, has shown itself keenly alive to the needs and potentialities of wildlife, and proud of its parks. It has, in fact, scheduled no less than three new parks, two of them very large. Its leadership is energetic and forward-looking. But it cannot weave cloth from cobwebs, nor make a silver dollar from a nickel piece. ■

Alert to any possible source of food, three hungry cheetas survey the prairie on their morning hunt. Sick wildebeest which drop out of the migratory march often fall prey to cheetas and other predators.

Photograph by E. Harvey



Exploring

(continued from page 6)

Marble Canyon, the Kaibab Rim, Coconino sandstone, the deep purple shales and the towering limestone Redwall, provide a beauty that fills the voyager's soul to bursting. Limestone, sandstone, and shale are the materials from which the Great Architect carved the temples and the buttes, the plateaus and the mesas, the amphitheatres and the alcoves.

Havasu is the land of the "blue green" water, for that is the meaning of the name in the language of the Havasupai Indians who live nine miles back from the Colorado in a hidden tropical paradise, where fruits and vegetables grow in excess of their needs. The entrance to Havasu Creek is high, rugged, dark, and narrow—just barely wide enough for boats to edge through with oars inboard. Shortly it widens, and there the boats float, quietly, safely, hidden from the sound and sight of the turbulent river. Fifty feet away on either side the walls rise from the water's edge to the blue sky. White at their bases where lime has painted them, they gradually deepen to salmon pink and finally, high above, to brilliant red. The stream is full of boulders, and there are many flashing falls and cool, pellucid pools.

Diamond is different; for the river-runner's experiences are now behind him. They are memories, fresh and overflowing, of moonlight and firelight, sunsets and storms, a thousand waterfalls and one forever frozen, of great blue herons and tiny canyon wrens, sidewinders and bighorn sheep, of caves at water-level and arches against the sky.

Camping on the River

His thoughts are of those never-to-be-forgotten nights by the side of the river—of the fire burning dimly, embers sputtering and fading. From around it, shadowy figures rise and sleepily stumble, each to its chosen bedsite; some high in a cliff, others deep in a side canyon, some curling in body-sized holes among the boulders, others seeking the coolness of damp sand by the river's edge. All that marks the camp is a tiny spark of fire a mile beneath the earth. The mightiest of rivers roars past at its side. Cliffs thousands of feet high, black, unscalable, rise on either side. Four small boats are drawn up upon the shore. Silent, tiny forms lie scattered within that vastness, sand for a bed, arms for a pillow.

Nowhere is the river's magic more apparent than in the fury of its storms, storms that are born and die in the canyon. There is no warning of their approach. There is no gradual stepping-up of the thunder's beat. One moment the pitiless sun shines brilliantly on walls that are dry and blistering in the heat. Then the sky is suddenly blotted out, lightning flashes, thunder hammers on the canyon walls and great drops of rain, cold as glacial ice, pour down as though the skies had turned on end. The storm is quickly exhausted by its very fury. The sun shines as brilliantly as ever, but not on blistering canyon walls. It beams upon a thousand wildly dancing waterfalls—the children of the storm—splashing their way to oblivion.

It is the magic of a dead world come to life, for in the canyon clear water is life. Without it, all is dead. Where springs gush from holes or caverns in the limestone, there magic is wrought; for though but a few feet beyond the spring's reach the soil is brown and barren, whatever it touches is green with life. Vasey's Paradise, Deer Creek Falls, Elves' Chasm, the Havasu and Thunder River—magic names of magic streams and waterfalls whose beauty carries with it the gift of life.

I lay awake long that last night at Diamond. I was back on the river with that small band of adventuresome spirits drifting and singing their way through the core of the earth.

And now, as I lie on my down-soft bed at home and my thoughts turn to my river days, I have heard that my bed of sand by the rapids-head may be no more; that it, together with the caves and alcoves, springs and pools, gaily-colored sculpturing, all the artistry that nature has produced in seven million years, may be buried forever, never to be seen by my children's eyes. Even the voice of the rapid that has roared unceasingly through all the empires that the world has ever known will vanish, even as those empires have vanished.

Is there a thought here that we should heed? ■

News and Commentary

Virgin Islands Problems

Not long ago NPA received a complaint from a Virgin Islands National Park visitor concerning spearfishing and removal of coral formations in park waters; both these activities are of course prohibited. The letter also suggested that more attention could be paid by park rangers and naturalists to conservation matters in their contacts with the public; that there appeared to be a serious lack of park and conservation educational work at Virgin Islands Park.

The Association brought the matter to the attention of Park Service Director George B. Hartzog, Jr., who in response indicated that an improvement in the general conservation education work in this park through public contact and by printed material and self-guiding interpretive devices is under discussion at regional and park levels. Director Hartzog observed that the protection problem is not unique to Virgin Islands; that the educational approach is the answer to most protection problems; but that in the small percentage of instances where educational work is not effective the Service must use more direct methods.

Registry For Natural History Landmarks

Since 1960 the National Park Service has lent Federal recognition and encouragement, through its National Registry of Historic Landmarks, to States, public agencies and private individuals in preserving nationally significant historic buildings and sites. Through the registry the Service issues certificates for the sites and arranges for periodic inspection and consultation with owners; registry is based on recommendation by the Advisory Board on National Parks, Historic Sites, Buildings and Monuments.

Now the Service has initiated a program for registry of selected natural history landmarks presently under ownership of State or local agencies, conservation groups, science foundations or private individuals. Commenting on the new Registry, Interior Secretary Udall says that it will offer important natural areas—impossible for the Government to acquire and administer—a degree of status otherwise not possible. Federal involvement in natural history areas will be similar to that in historic sites.

Seven natural history landmarks have been chosen already on recommendation of the Advisory Board, and more are under study. The landmarks are chosen under the criteria of: natural quality and character; degree of dissimilarity to other sites; importance to education and science; reasonable invulnerability to deterioration and destruction; practical size; availability and accessibility; and sympathetic and responsible ownership.

The initial seven sites are: Bergen Swamp, some miles west of Rochester, New York, an outstanding glacial relic; Corkscrew Swamp Sanctuary, southwest of Fort Myers, Florida, a virgin stand of cypress; Elder Creek, near Branscomb, California, a superb stand of Douglas fir and Coast redwood; Fontenelle Forest, near Omaha, Nebraska, a virgin mixed hardwood forest; Mianus River Gorge, Westchester County, New York, an ancient hemlock forest with great diversity of northeastern flora and fauna; Rancho La Brea-Hancock Park, Los Angeles, world-renowned locality for natural tar-pits and associated Pleistocene fossils; and the Wissahickon Valley, Philadelphia, a remarkable natural area within the limits of a great urban area.

A Kennedy Memorial Fund

One of our esteemed members, Clara J. Hall of California, wrote to us recently suggesting that we establish a fund for contributions to buy land for a national park to be named for the late President Kennedy; she enclosed a contribution of $100 as a starter.

We expressed our appreciataion and our sympathy for the idea, but pointed out that land acquisition costs for parks are enormous and are usually met by governmental appropriations. Citizens can best help by contributing to educational institutions like NPA for presentation of park proposals to an informed public.

Miss Hall was generous enough to leave her contribution with us for that purpose; we said we would suggest through the Magazine that others might do likewise, and announce that such gifts would be devoted to the general purposes of NPA, but with special thought to education or shoreline preservation; the late President sponsored the original proposal for Cape Cod National Seashore. All such contributions will be gratefully accepted.

In Appreciation

The Association is most grateful to the personnel of the Libraries of Columbia University in New York City; to the Tramp and Trail Club of New York City; and to individual friends of late NPA member Miss Helen E. Crofoot who, at the time of her death in late 1963, was assistant head of the general cataloging section of the Libraries.

Knowing of Miss Crofoot's deep interest in the Association's work in parks and conservation, many of her friends on the staff of the Libraries, in the Tramp and Trail Club and elsewhere have made generous contributions to the Association for the furtherance of its conservation work. The Association also has been informed by the Libraries that, beginning with the volume for 1963, it and the volumes for succeeding years will carry memorial bookplates in Miss Crofoot's honor. The Libraries have subscribed to *National Parks Magazine* for many years.

Miss Helen E. Crofoot was a native of Connecticut and a graduate of Connecticut College for Women. She held a degree in library science from Columbia, and during the thirty-six years of her professional life had occupied progressively more responsible positions in the cataloging division of the Libraries there. She was a member of the American Library Association, the New York Library Club and the New York Technical Services Librarians, as well as the National Parks Association and the Tramp and Trail Club of New York City.

The Glowing Future

You, too, can be a part of the burgeoning space-age, even if in a passive or perhaps even reluctant way. More specifically, you are about to become a statistic in a study that will be undertaken for NASA's Manned Spacecraft Center to find out what your chances are of being hit by earthward-bound space-garbage resulting from "Gemini" and "Apollo" tests to be held in the fairly near future. These tests will leave many "objects" in space, some of which are to be fabricated from metals whose melting and boiling points are above temperatures generated by reentry into earth's atmosphere—titanium, for example. (Titanium is one of the elements of the carbon-silicon group of Dmitri Mendeleev's periodic table, and was named for the *sons of the earth* of Greek mythology; it seems likely in future to be descending from the heavens to plague modern sons and daughters of the earth.)

In order to find out your chance of being hit, NASA has asked bidders to make trajectory calculations, thermodynamic, structural and dispersion analyses, and impact and kill probabilities for each Gemini and Apollo mission based on the population density of the total impact

area. We are indeed sorry that we cannot volunteer to assist in the analysis, but the mathematics involved are quite likely far beyond the capabilities of the Association's immediate working staff. We might suggest, however, that results of the study could be reduced to a single symbol of probability which could be stamped on a metal tag and worn by the population around the neck in the fashion of the familiar Army "dog-tag." The advantages of such a device are obvious. For example, a NPA member, meeting another member, could immediately judge the latter's potential life span, which would depend in part on the section of the country he came from. Knowing this, the first member could then decide whether it would be most profitable to merely say "hello" or engage in future correspondence on park problems. We think this idea has possibilities.

Damage to Park Units Slight

A check with National Park Service headquarters not long before presstime reveals that the only damage sustained by Alaskan units of the park system in the recent major earthquake, so far as known presently, was the loss of a small boat dock at Glacier Bay Monument. The Service had not, however, received any reports from the Alaskan Peninsula at the time of this writing. Katmai Monument is located at the head of the peninsula.

Latin American Park Committee Is Organized

Dr. Maria Buchinger, executive secretary of the Latin American Committee on National Parks, visited Association headquarters in April to discuss with NPA's staff the progress and problems of park and conservation work in the Central and South American nations.

The Latin American Committee on National Parks, an affiliate of the International Union for the Conservation of Nature, was informally shaped by Latin American delegates to the First World Conference on National Parks—held in Seattle in 1962—as a result of a Conference recommendation. It was formally established during March, 1964, in accordance with a resolution of the 8th General Assembly of the IUCN in Nairobi during 1963, and after a March meeting of founding members in Guayaquil, Ecuador, where by-laws were drafted and objectives established.

Major goals of the LACNP are: encouragement of Latin American governments and official organizations concerned with conservation matters in maintenance and management of national parks and equivalent reserves, and establishment of new parks and preserves; encouragement of interested individuals and nongovernmental groups in forming associations for protection of nature in Latin American nations; preparation and distribution of scientific and interpretive publications on Latin American parks and preserves; promotion of scientific, administrative and educational visits to Latin American parks and reserves by representatives of member and other nations; provision of information to member governments concerning training courses for national park specialists; distribution of information concerning national parks to educational institutions and news media; and rendering of data and information on status of Latin American parks and reserves to the IUCN.

At a recent meeting Dr. Buchinger was appointed executive secretary of the LACNP; Dr. Harold J. Coolidge of the National Academy of Sciences was elected honorary president in token of his twenty-odd years of work in promoting a Latin American conservation movement; and the names of Dr. F. Carlos Lehman, of Colombia, Italo N. Costantino, of Argentina, and José Orta of Venezuela were presented to the IUCN as prospective presidential and vice-presidential candidates.

Secretary of the Interior Stewart L. Udall has indicated that the National Park Service will cooperate in development of a training program for international conservation leaders, and that plans for interchange of professional park personnel between this and other nations, with special attention to Latin America, will be studied and prepared.

Florida Turnpike a Sanctuary

For the mutual benefit of drivers and wildlife, Florida State Turnpike authorities, with the cooperation of the Florida Audubon Society, have designated the Turnpike as a wildlife sanctuary where interested drivers can observe native birds and mammals in their natural habitat.

The Turnpike—also known as Sunshine Parkway—winds through some of Florida's more remote areas, where bald eagles, horned owls, wild turkeys, herons, egrets, ibises, and wood storks are to be seen along with many other interesting birds of the State. Authorities plan to erect notices at various turnpike entrances to inform travelers of the sanctuary, and to keep them alert for signs of the birds.

"In building super highways to promote Florida progress we often pay little or no attention to either the rights of wildlife or to the value and pleasures it brings," said John R. Phillips, Chairman of the State Turnpike Authority. "I hope our action will help preserve Florida wildlife and that our example will be followed wherever limited access highways are constructed."

Summit To Be Park

NPA has been informed that the State of New Hampshire has undertaken to purchase most of that portion of the sum-

(*Continued on following page*)

mit of Mount Washington, in the White Mountains, which has been the property of Dartmouth College—a roughly circular tract surrounded by lands of the White Mountain National Forest. Not included in the purchase will be a parcel of land on which there are several structures including the Mount Washington Observatory and an Air Force climatic laboratory. The area will be incorporated into the State park system, and it has been indicated that considerable study will be necessary to formulate plans for public recreational use while at the same time maintaining integrity of the scientific and educational wealth of the arctic summit.

The upper third of Mount Washington is essentially Labradorean in climate, flora and fauna, the barren summit being underlain by permafrost. Upper parts support some 63 species of alpine and arctic plants, several of which are unique, and a fauna limited by rigorous conditions to a few small mammals, some birds, and an assortment of lesser life including butterflies, moths and spiders.

Historically, Mount Washington's summit was the locale for the world's first long-range weather forecasting attempt when it was occupied by a party under leadership of geologist J. H. Huntington during the winter of 1870-71. This so-called "Hitchcock Expedition" was backed by several scientists and the Army Signal Corps, ancestor of the modern U. S. Weather Bureau.

Interpretive Center Dedicated

Two years ago the National Park Service acquired the campus and buildings of Storer College, adjacent to Harpers Ferry National Historical Park at the Confluence of the Potomac and Shenandoah Rivers on the Maryland-West Virginia State line northwest of Washington, D.C. (This area, so rich in memories and relics of Civil War and pre-Civil War history, was redesignated from status of national monument in May, 1963).

The land and buildings of the college were acquired to provide uniformed park personnel with a school for training in the art and techniques of park interpretation. It was formally dedicated April 17 as the Stephen T. Mather Interpretive Training and Research Center, although sessions have been in progress for several months; a class of 29 naturalists, historians and archeologists from parks all over the nation is currently taking the comprehensive nine-week course which will enable members to bring park visitors a better understanding of their park system through personal services, publications, museum exhibits and audio-visual devices.

The center's administration building has been designated Conrad L. Wirth Hall, in honor of recently retired Park Service Director "Connie" Wirth. The entire facility was named in honor of first director Stephen T. Mather, who served from 1917 to 1929.

V. Van Straelen

The Association has learned with the deepest regret of the recent death of V. Van Straelen, president of the Institute of National Parks of the Congo and Rwanda since the formation of that organization in 1934 and a member of the Commission on National Parks of the International Union for the Conservation of Nature. Mr. Van Straelen devoted many years of his life to the welfare of the national park system of the Congo and Rwanda, and was intimately familiar with its problems both as a conservationist and a scientist. A noted Belgian parks man has assessed the loss of Mr. Van Straelen in these words: "The cause of conservation has lost a devoted advocate and the scientific world has lost a man of exceptional skill."

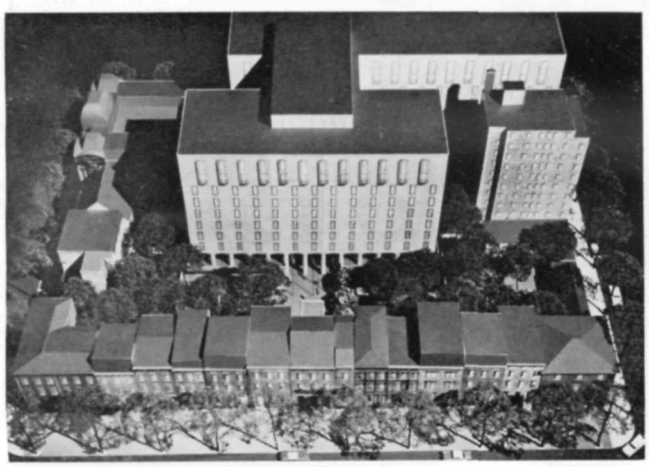
Three to Assist NPS

Three prominent scientist-conservationists have recently been appointed by Interior Secretary Udall to assist the National Park Service in formulating and evaluating its natural history study programs. They are: Dr. A. Starker Leopold of the University of California, Dr. Stanley A. Cain of the University of Michigan, and Sigurd F. Olson, of Ely, Minnesota. Drs. Leopold and Cain are both members of the Secretary's Advisory Board on Wildlife Management, and Mr. Olson is currently serving as a consultant to the Secretary and to Park Service Director George B. Hartzog, Jr., in wilderness conservation matters.

Wildlife Refuge Additions

Recently announced additions to units of the national wildlife refuge system are 1161 acres to the Agassiz Refuge in Minnesota; .65 acre to the Martin Refuge in Maryland; 327 acres to the Iroquois Refuge in New York; and 12 acres to the Wapanocca Refuge in Arkansas. The Interior Department has also announced the signing of an order which reserves 1311 acres of public land in Lincoln County, Nevada, for completion of the Pahranagat Refuge, established in 1963 on 3892 acres. The reserved land will bring the refuge to its total planned size of 5203 acres.

The Migratory Bird Conservation Commission, which authorized the additions, is composed of the Secretaries of Interior, Agriculture and Commerce, Senators Hruska and Metcalf, and Representatives Karsten and Goodling.



A Tranquil Memorial

The architect's drawing reproduced at the left shows the square in the city of Washington west of Jackson Place (foreground) as it will appear after reconstruction which is beginning this spring. The White House is diagonally opposite the lower left corner. A motley assembly of small office buildings will be torn down along the Place; historic houses will be saved, and likenesses built on cleared frontage. Behind them, inside the block, will be a new courthouse and other public buildings, surrounded by a park. The late President Kennedy ordered this approach instead of a monolithic government office building. With due obeisance to Cape Kennedy, we think the square should be named Kennedy Square, as a more tranquil and fitting memorial to the political engineer of the test ban treaty, who was also deeply concerned with the protection of the life-environment.

THE CONSERVATION DOCKET

Most legislation with which conservationists are concerned is referred to the House and Senate Committees on Interior and Insular Affairs. Bills appropriating money are referred to the respective committees on appropriations. The best manual on information for keeping in touch with Congressmen and various committee members is the Congressional Directory which is presently available at the Government Printing Office, Box 1533, Washington, D.C. 20402 for $3.00. (Checks or money orders should be drawn in favor of Superintendent of Documents.) The Directory not only tells you who your senators and representatives are, but lists membership of the various Congressional committees and subcommittees, and gives full information on the personnel of the various executive bureaus of the government.

A resurgence of public interest in the pesticide problem because of the recent Mississippi River Basin disasters makes it timely to review the status of pending legislation on pesticide use and control. Several bills were introduced into the first session of the 88th Congress to accomplish various purposes, as: Federal-State consultation before initiation of Federal programs using pesticides; prevention of injury to fish and wildlife from pesticide use; setting of standards of nonpersistence of synthetic pesticide chemicals; protection of public health by preventing registration and sale of certain pesticides. Most of these bills had committee hearings in 1963, but have advanced no farther. Exceptions are the twin bills S. 1605 (Jordan) and H.R. 9739 (Rosenthal) to amend the Federal Insecticide, Fungicide and Rodenticide Act, as amended, to provide for labeling of economic poisons with registration numbers and to eliminate registration under protest. (Registration under protest allows marketing of a pesticide without full approval of the Agriculture Department.) S. 1605 was passed by the Senate in late 1963; its companion bill had, at this writing (mid-April) been reported out of House committee.

No legislation has been introduced up to this time to activate either the Park Service's original Allagash National Recreation Area or the Bureau of Outdoor Recreation's later and more modest proposal for an Allagash National Riverway in northern Maine. It is not considered likely that either proposal will receive Congressional attention until a decision is reached for or against the Passamaquoddy Tidal Power Project on the lower Saint John River; in this regard, there have been differences between the U. S. and New Brunswick over power distribution aspects of the Project.

Several bills in House and Senate looking toward new national parks or monuments are to date unscheduled for public hearings. Among these are: Prairie Park in Kansas (S. 986 and H.R. 4424); Sawtooth Wilderness Park in Idaho (S. 2188, H.R. 8659 and H. R. 8660); Valle Grande Park in New Mexico (S. 47 and S. 1870, H.R. 1941; and Agate Fossil Beds Monument in Nebraska (S. 1481 and H.R. 6149). The last named proposal is a relatively new one, and is in the Public Lands Subcommittee, Senate, and National Parks Subcommittee, House. The proposed monument would preserve several of the world-famous fossil quarries in the vicinity of the Niobrara River in western Nebraska, along with a stretch of the river itself, in an area of 3150 acres. It would provide a center for paleontological research and for public display and interpretation of scientific specimens.

Book Reviews

ILLUSTRATED GUIDE TO YOSEMITE AND MOUNTAIN PHOTOGRAPHY. By Virginia and Ansel Adams, The Sierra Club, Mills Tower, San Francisco, California, 1963. 192 pages. Paperbound, $2.95; clothbound, $4.75.

Conservationist, writer, musician, teacher, and master photographer, Ansel Adams has conducted an intimate, lifelong friendship with Yosemite Park. He and his wife know the secret joys of the true Yosemite. This is the Yosemite that hurried tourists rarely see: the Yosemite of shadowed coniferous forests, of black bears and mountain lions, of thundering waterfalls and quiet valley streams.

For the serious and sensitive student of nature who wants to know Yosemite as the Adamses know it, the *Illustrated Guide* is a treasure to be read and enjoyed, then tucked into a knapsack for immediate reference on every phase of a Yosemite trip. The *Guide* will tell you what to do if you are lost, hurt, frightened, bitten, hungry, or just want to know where and how to get good photographs of the beauties of Yosemite National Park.

In a special section called "On Mountain Photography," Mr. Adams discusses esthetic and technical questions about mountain and outdoor photography, and answers them with clarity and detail. At the beginning of the section he explains his philosophy: "Every photograph is a crystallization of experience—of real value to the maker and of potential value to the spectator. While tyros rush in where artists fear to tread, it is wrong to assume that only advanced photographers should essay the problems of Yosemite. . . ."

There are 45 pages of photographs in the book, each of which provides a visual experience of its own. Combine the pictures with the maps, diagrams, technical information and educated advice, then add detailed information on the services, facilities, trails, roads, and features of Yosemite, and you have the *Illustrated Guide.* —*M.A.R.*

WILD CATS. By C. B. Colby. Duell, Sloan, and Pearce, New York, 1964. 120 pages. $3.95.

The word *cat* conjures up multiple images: kittens chasing leaves, a purring mass of fur on your lap; sharp-clawed beast prowling through darkened jungles. But, says Mr. Colby, all cats "are basically the same under their wildly assorted skin colorings . . . for they all had a common ancestor back before history began."

Before history began, man was probably afflicted with curiosity about wild cats, and cats since have generally been afflicted with man. Mr. Colby gives good if unimaginative descriptions of wild cats, but his writing betrays an assumption that shooting cats is as much fun as observing them. This attitude casts a pall of insensitivity around his informative, well-illustrated book. —*M.A.R.*

LOOKING TO THE FUTURE

THREE YEARS AFTER PASSAGE of the National Parks Act in 1916 this Association commenced to function as an organization devoted to protection and enlargement of a relatively young park system. It early came to realize, too, that concern for parks also implied need for a broad and scientific interest in general conservation matters. Thus, for nearly a half-century the Association has cooperated with the Park Service—now and again as a friendly critic—in park educational work and on park problems; it has for years also studied and published on other facets of conservation.

THE ASSOCIATION always has depended largely on membership dues, contributions and bequests to sustain its park and other conservation education work. It hopes that those of its members who are in a position to do so will, in planning for the future, provide for bequests to the Association. Bequests are deductible for Federal estate tax purposes.

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

Running the Yampa River in Dinosaur National Monument: Round Top Mountain in distant background. H. C. Bradley photograph.