

KATMAI—AMERICA'S LARGEST NATURE RESERVE

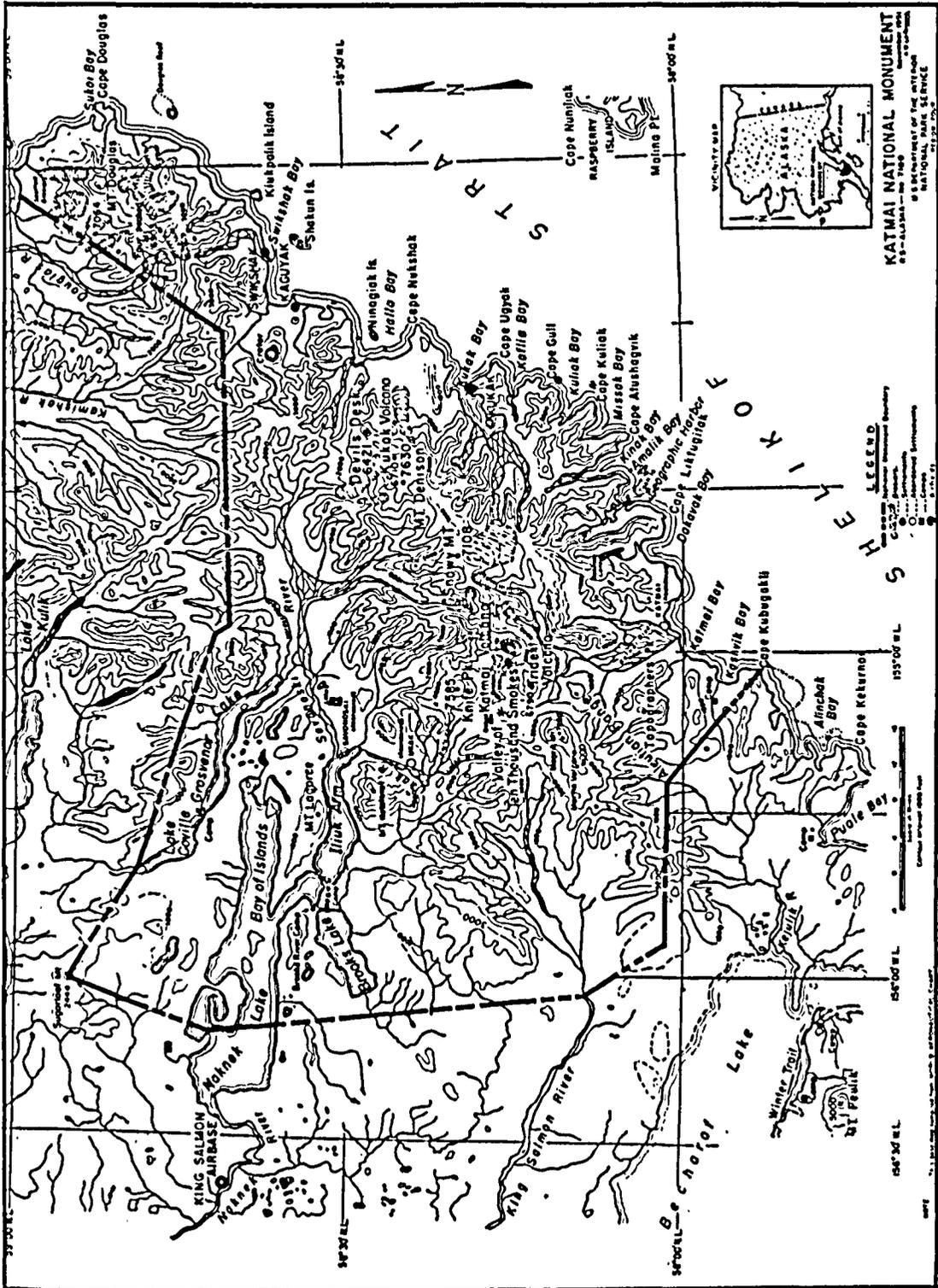
By VICTOR H. CAHALANE

At the base of the Alaska Peninsula, in south-western Alaska, is a remarkable nature sanctuary. It is by far the largest park in United States' territory and among the dozen largest in the world. It is the only completely roadless park in America. It is the site of one of history's mightiest volcanic eruptions. It has magnificent scenery—mountains, smoking volcanos, glaciers, picture-book lakes, a rugged marine coast with colourful fiords and, in a near-aboriginal fauna, the largest carnivore in the world. Many persons—even Americans—have never heard the name of this park: Katmai National Monument.

After Alaska's first big gold strike at Nome in 1899, Katmai's name appeared in American newspapers—but in small type. The old native trail across the Alaska Peninsula, from Shelikof Strait through Katmai Pass to Naknek, was a short-cut to Bering Sea. A two-or-three day pack trip followed by a fifty-mile voyage in a native boat, put the gold-seeker on the shore of Bristol Bay. Here he could arrange passage on a coastal vessel to Nome. The Katmai route saved him a thousand miles of stormy and dangerous sea-faring out to Unimak Pass through the Aleutian Islands.

On 6th June, 1912, an event occurred which was to put the name "Katmai" in newspaper headlines. On that day, Mount Katmai, a 7,500 foot mountain north-east of the pass, spewed out a mass of lava. For the next sixty hours the earth was racked and convulsed by mighty forces. Enormous amounts of ash and pumice were blown out of Novarupta, a relatively insignificant volcano about five miles south-west of Katmai. Ash fell over much of north-western North America, and the finer dust was carried by winds in the stratosphere entirely around the earth. So much material was ejected that a great cavity formed under Katmai and the upper third of the mountain collapsed. The resulting crater was at least three thousand five hundred feet deep and nearly three miles across.

While Novarupta was pouring forth ash, a series of glowing avalanches of sand mixed with super-hot gases burst out of numberless fissures in the head of the valley west of Katmai Pass. Rushing down with incredible speed, these avalanches buried the floor of the valley, three to six miles wide and fifteen miles long, to an average depth of a hundred feet. The mass of tuff



PART OF ALASKA.

consolidated, but it was perforated by countless fissures through which steam and hot gases escaped. These fumeroles later gave the area its name which became known throughout the world—the Valley of Ten Thousand Smokes. Actually, the fumeroles were numbered in millions.

The Katmai eruption was one of the greatest volcanic explosions in recorded history. In comparison, the eruption of Vesuvius which destroyed Pompeii in A.D. 79 was a puny thing though apparently no human life was lost in the Katmai pyrotechnics, which were mostly shrouded in dense black clouds. The few witnesses, the natives, fled in terror and settled beyond the limits of the ash-fall and possible new catastrophes.

At first there was even some doubt as to *which* mountain in the Aleutian Range had erupted, and for several years no one was certain. In 1916 and 1917 scientific investigators of the National Geographic Society under the leadership of Dr. Robert F. Griggs solved the mystery and, on 26th September, 1918, an area of 1,700 square miles was proclaimed the Katmai National Monument. Subsequently, as the scenic marvels and wildlife resources of the region became known, the area was enlarged to its present size of 4,375 square miles or about 2,697,600 acres. Katmai Monument thus exceeds Yellowstone National Park by nearly half a million acres.

The enthusiastic explorers had expected Katmai to rival Yellowstone as a tourist attraction, but their dreams were not fulfilled. The region was isolated and (until 1948) had no public accommodations. The trip to the Valley of Ten Thousand Smokes was costly in terms of both money and physical effort. As time passed, the spectacular display in the Valley declined until less than a hundred fumeroles remained. The public lost interest and assumed that little remained in the Monument to justify its continuance. New generations knew nothing of it.

A total of more than seven months of travel and scientific observation in Katmai Monument during 1940, 1953 and 1954 have given me some knowledge of this vast wild region, into which until recently few persons penetrated. Awesome storms whip the lakes and Shelikof Strait to froth, particularly in autumn. Then, up in the mountain passes, small boulders scurry across the slopes like blowing leaves and bits of pumice drive through the air like deadly hailstones.

Despite these sullen and occasionally tempestuous moods, Katmai can be as calm and brilliant as the loveliest tropical island. At least a few days in summer, and rarely weeks at a stretch, will be bright, sunny, warm and still. Then the tundra

is emerald green, sprinkled with flowers of all colours, the distant mountains and glaciers are clear as an etching and the air is vibrant with the songs of birds and the humming of insects.

The Monument is a rough parallelogram eighty miles east and west by fifty miles north and south, with a thirty-mile extension at the north-eastern corner. Running north-east—south-west, the Aleutian range divides the area into two unequal and dissimilar parts. On the east, the mountains drop steeply to the rugged fiords and bays on the coast of Shelikof Strait. West of the divide the range extends long spurs and outlying hills through an extensive lakes region to the rolling tundra near the western boundary of the Monument. Short streams, mostly small, rush down the eastern slope to the Pacific Ocean. Much longer rivers on the western side of the range drain through Naknek River to Bristol Bay, to join an arm of the Arctic Ocean.

The main mass of the Aleutian range, about ninety miles long as the eagle flies, sweeps in an unbroken chain the length of the Monument. While not outstanding in a Territory of mighty mountains, it is still beautiful and impressive. The highest elevation, Knife Peak, attains an altitude of 7,585 feet. It is a symmetrical cone, with glaciers in its volcanic summit, which stands majestically a little apart from its neighbours. Immediately adjacent is the jagged stub of Mount Katmai with its clear, deep-blue lake cupped in the 3-mile-wide crater. The rim is now only a mile high; before the eruption, Katmai rivaled Knife Peak in altitude.

Four other mountains in Katmai exceed seven thousand feet in height. All are volcanos which "smoke" intermittently, Mount Mageik almost continually. At least fifteen other mountains in the Monument are active or recently active volcanos. One of these, Mount Trident, burst into spectacular activity early in 1953 and puffed showers of ash over the region for months. A relatively puny fellow, Trident sent up a plume of steam 35,000 feet high which was easily visible for a hundred miles. The volcano spewed out a stream of lava one and one-half miles long and tossed rocks four inches in diameter for distances up to six miles.

An exhibit contrasting with the active Trident is an unnamed, long-dead volcano near Kaguyak. The eruption of this mountain occurred well before local history began, but perhaps as recently as a thousand years ago. The remaining stub is filled by a lake of clear blue water. Over this towers a jagged cliff—a gigantic splinter that survived the collapse of the mountain into its

hollow core. This volcanic relic is in a wild, trackless region and has been seen close-up by few persons, but it is a beautiful spectacle.

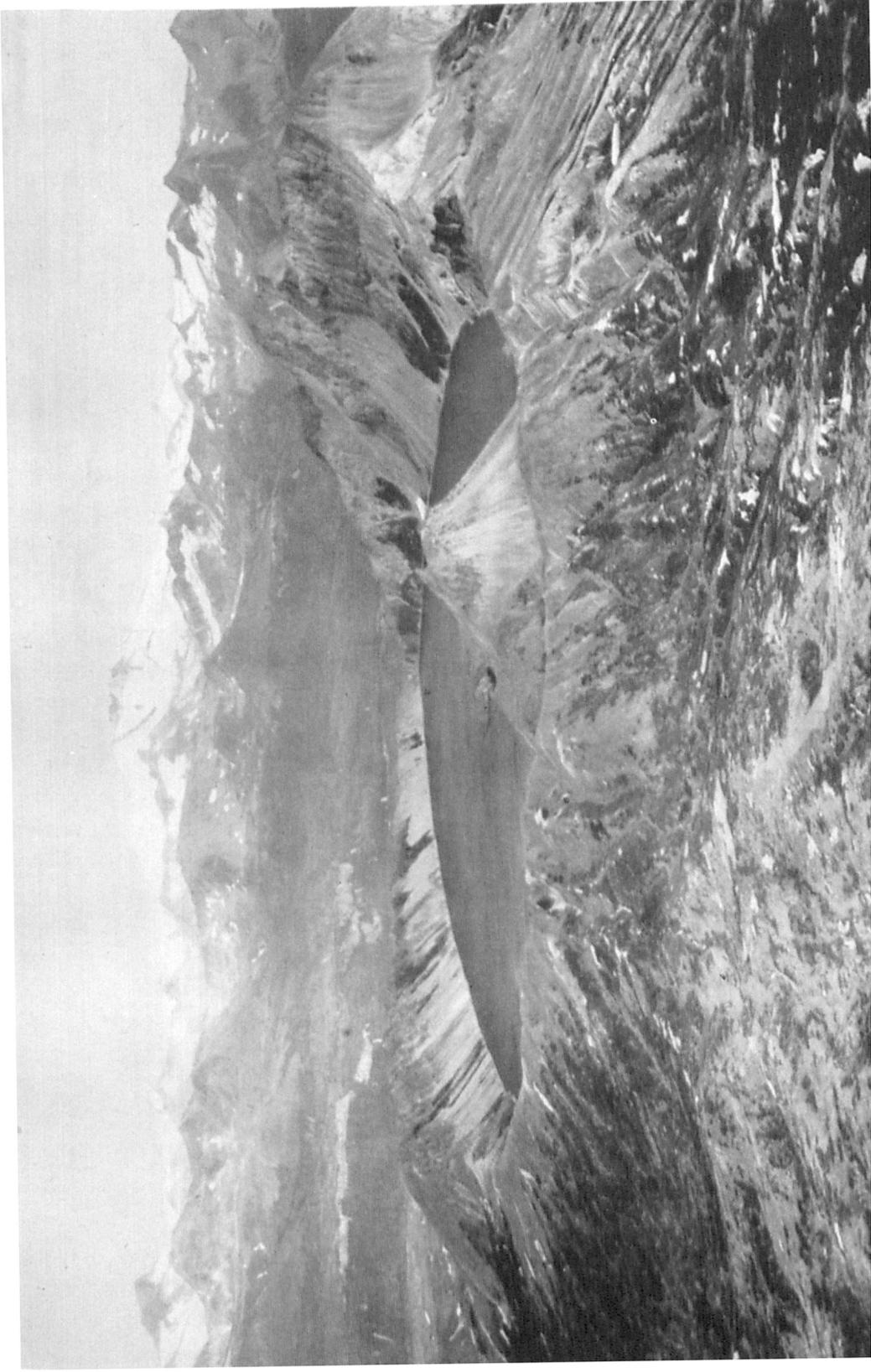
The scenery of the Monument is varied as well as spectacular. Except for a five-mile gap, the broad ridge of the Aleutian range is mantled with snow throughout the year. These snowfields feed many glaciers, some of which are three to four miles wide and ten or twelve miles long. One of these ice rivers is unique. It is on the *inner* wall of Katmai crater and of course has formed since the eruption. Thus it is the only glacier in the world whose age is known.

Several of the bays on Shelikof Strait are wide, shallow half-moons with sweeping curves of broad, sandy beaches. Contrasting with them are deep, narrow fiords which cut as much as ten miles back into the mountains. These rugged inlets, with their islands and sheer cliffs leaping from the water, excite wonder and admiration. Nowhere else is there such a spectacular contrast of deep blue water hemmed in by rugged cliffs and steep slopes on which great drifts of pale buffy pumice contrast with patches of dark green alders.

Across the range on the Arctic slope is an extensive country of mountains, lakes and tundra. The easterly two-thirds of this region is often considered the most beautiful section of the Monument. Deep, fiord-like lakes are hemmed in by massive or rugged mountains which rise as much as three thousand feet above the waters. With the exception of Iliuk Arm, which is yellowish gray with pumice from the Valley of Ten Thousand Smokes, these lakes are strikingly clear and blue.

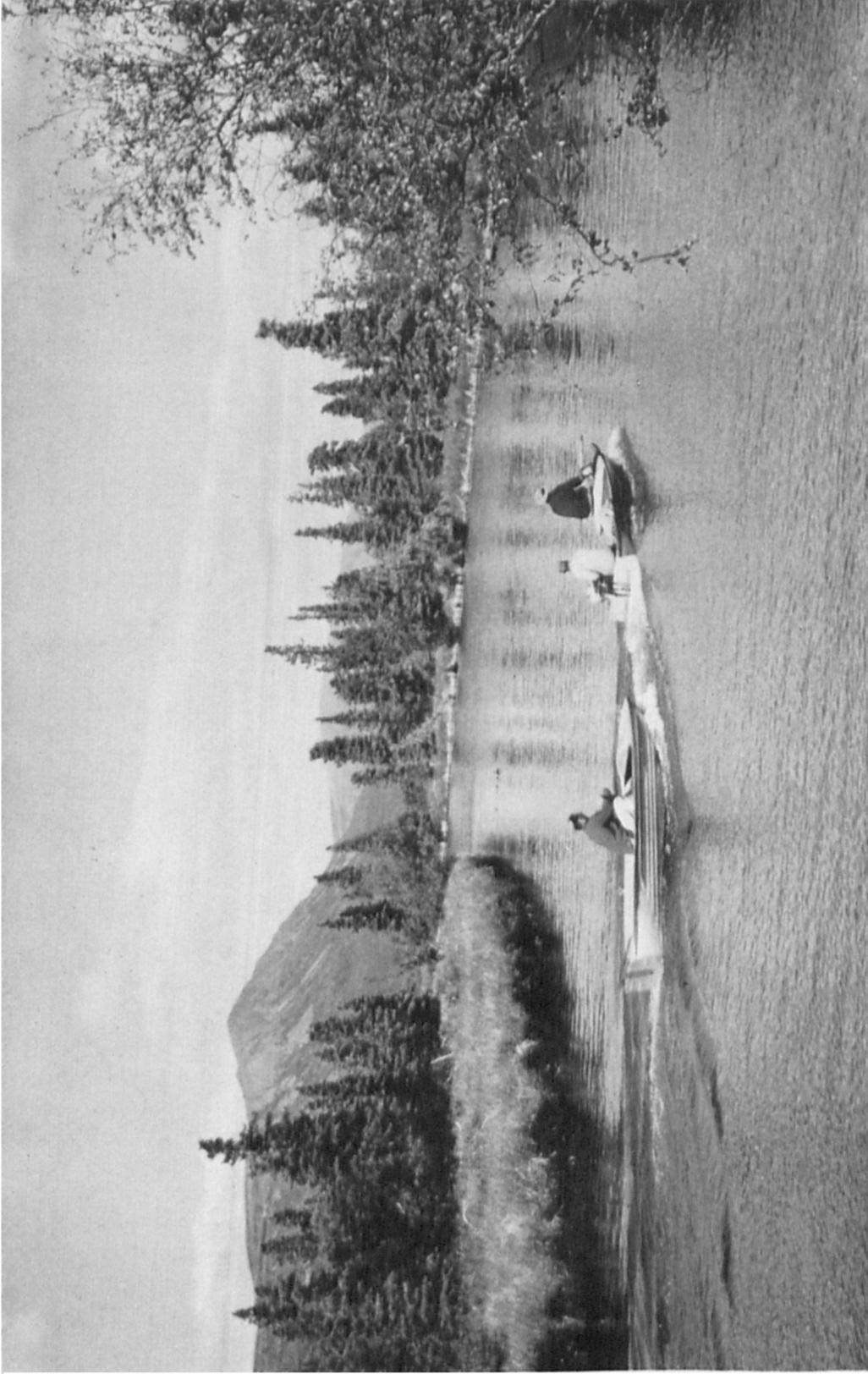
In summer sunshine, this region is indescribably green and lovely. As autumn approaches, the willows, dwarf birch and alders change to yellow, the fireweed and blueberry foliage becomes brilliant red and the balsam poplars are transformed into pure, shimmering gold. Only the forests of white spruce remain green-black in contrast.

Biologists divide the Katmai region into two life zones which merge gradually into each other. Most of the habitable area is termed the Hudsonian zone, the upper boundary of which is the two-thousand foot contour. Having deeper and richer soils and higher year-round temperatures than the alpine country, it is the home of most of the animal and plant species of the Monument. Here are extensive forests of white spruce, groves of balsam poplars, thickets of green alder and numerous kinds of willows, marshes filled with sedges and rushes, and open slopes which are covered with grasses, sedges and a great variety of other her-



[Photo: VHC, August, 1954

Unnamed volcanic crater north-west of Kaguyak, often called "Kaguyak Crater".



[Photo: VHC, July, 1953

Headwaters Creek, the principal feeder stream for Brooks Lake, at the western boundary of the Monument.

baceous plants. A total of 273 species of plants, from algae to composites, have been identified in the entire Monument.

Above the Hudsonian belt, and extending to the mountain-tops, is the Arctic zone. Large areas in this type along the main ridge of the Aleutian Range are occupied by snowfields and glaciers. Elsewhere, the Arctic zone is biologically "simple". The resident species are relatively few and are limited to those kinds that can withstand cold and strong winds. The plants are low-growing, with extensive root systems for anchorage and for collecting food in the shallow, coarse, sterile soil. Typical species are lichens, mosses, blue grasses, sedges, dwarf birch and willows, saxifrages, mountain avens and arctic wormwood. The most beautiful plant, undoubtedly, is Kamchatka rhododendron, whose deep pink or rose-coloured flowers decorate the tundra in late June and July.

About twenty-five mammal species inhabit the Monument. Beyond question, the dominant one is the peninsula brown bear. Weighing up to eighteen hundred pounds, this is the greatest of all the Alaska grizzlies and brown bears; it is the largest carnivore in the world. Katmai is the only sanctuary for this majestic animal and it may have a population of several hundred individuals. They live mostly in the Hudsonian zone but may wander above to feed on berries or ground squirrels. During July and August, the banks of rivers and creeks are trampled by the huge feet of bears that come to feed on the spawning salmon. No creature, not even man, argues the right-of-way with the Brownies. Sometimes an individual bear is truculent and highly dangerous, but as a rule they keep well out of man's way. The sight of several of these great bears fishing in the lower Savanoski River or against the beautiful backdrop of Brooks Falls, can never be forgotten.

Among the other mammals of the lower altitudes are the otter and beaver, which are fairly numerous in the rivers, streams and lakes; the red fox, which is abundant, and the grey wolf, which has declined in numbers during the past decade. The wolverine is seen rather frequently considering its usual elusiveness, and lynx have become almost common in recent years. The chatter of the red squirrel echoes through the spruce forest.

The great Alaska moose is numerous and is one of Katmai's animal spectacles. This great deer, as well as the brown bear, wolverine and wolf, may be found in the Arctic zone at times though the arctic ground squirrel and several mice are the only mammals which reside there permanently. Grant's caribou once

ranged over the tundra of this region, but no evidence of them remains except for deeply beaten trails. The herds were extirpated, probably before the Monument was extended westward in 1931.

One hundred and thirty species of birds have been identified in Katmai Monument from late June to mid-September. Eight more have been recorded outside but within twenty miles of the boundaries, and others (such as the snowy owl) unquestionably migrate here in winter or spring. Only a summary of the bird life can be given in this brief account. Most species are found in the Hudsonian zone. Ducks of many species are common both inland and along the coast, while whistling swans nest in the marshes. Loons, grebes, gulls and shorebirds such as sandpipers, oyster-catchers, turnstones and plovers are plentiful in the lakes region and the coastal bays. The marine environment also has murrelets, guillemots, auklets and puffins. The inland birds include birds of prey (hawks, owls, bald eagle), two grouse (spruce grouse and willow ptarmigan), woodpeckers, ravens and jays, thrushes, warblers and sparrows. On the mountains of the Arctic zone, the typical birds are American gyrfalcon, rock ptarmigan, northern raven, American pipit, grey-crowned rosy finch, Alaska longspur and snow bunting.

The headwaters of the Naknek River have long been noted as "nurseries" for the red salmon which spend most of their lives in Bristol Bay. Commercially and otherwise, this is an enormously valuable fishery. In order to study it, the Fish and Wildlife Service has been granted permission by the Park Service to maintain a laboratory and counting weir in the Monument at the head of Brooks River. When the masses of huge red fish are fighting their way to the spawning beds in July and August, they make one of the most fascinating and impressive scenes in Nature.

The beautiful silvery king salmon is numerous in the lakes off the mouths of rivers during the summer months. Unlike mature red salmon, which do not eat when in fresh water, king salmon are voracious feeders. The Katmai region is famous for its angling opportunities for this great game fish and also for steelhead or sea-run rainbow trout. The latter are abundant, brilliantly coloured and of huge size. Steelheads two feet in length are often taken in Brooks River and larger specimens have been caught at times. In order to preserve adequate numbers of these large trout, the Park Service enforces a very low creel limit. Other fish in this region are grayling, northern pike and whitefish.

The Katmai area should be kept inviolate. Furthermore, the present Monument boundaries should be extended northward to include the valley of McNeil River. This is a summer fishing area for large numbers of brown bears and is now open to hunting. Finally, a peculiarity of American law should be utilized to provide the greatest permanence and stability for the reserve. Since a National Monument can be brought into being by proclamation of the President, it can be greatly reduced or even wiped out by one signature. National Parks, however, are created by the majority consent of the five hundred and thirty-one members of the Federal Congress, and can be abolished only by the same procedure. There is every justification for safeguarding this magnificent scenic-biologic area in southwestern Alaska by establishing it as Katmai National Park.