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THE NATIONAL GEOGRAPHIC MAGAZINE

NEW HAMPSHIRE, THE GRANITE STATE

By GEORGE HIGGINS MOSES

United States Senator from New Hampshire

AUTHOR OF "GREECE AND MONTENEGRO," "GREECE OF TO-DAY," AND "THE WHIRLPOOL OF THE BALKANS," IN THE NATIONAL GEOGRAPHIC MAGAZINE

With Illustrations from Photographs by Clifton Adams, Staff Photographer

THE story is probably apocryphal. At any rate, I have not been able to run it down in the *Congressional Record*. But, as it goes, one of my predecessors was taunted one day in debate that he came from a little State. He retorted: "New Hampshire, I admit, is small, as it appears on the map; but if you could iron it out it would be bigger than Texas!"

And yet we have a thousand square miles of area more than Massachusetts, from which we were separated two hundred and fifty years ago. The new Royal Province of New Hampshire had then but four towns, which clung precariously to the seaboard; and, if the usual rule of computing population in proportion to qualified voters be observed, there were perhaps a thousand souls in the census.

In a quarter millennium we have now come to number about half a million people, and have spread from the coast to the lakes and beyond the mountains to the Canadian border.

The march has been toilsome. Subduing the forest was no easy task, and it is small wonder that so many of our acres, once cleared by the stern process of cutting and burning, have been permitted to resume their forest cover.

It is probable that Massachusetts was glad to be rid of us, back there two hundred and fifty years ago. We had not gotten on well with the royal governors who had lived in Boston. It was the first manifestation of a revolt against absentee landlordism, which New Hampshire has always more or less maintained.

When we were divorced from Massachusetts there arose, as often arises in such instances domestically, the question of the division of the property. "Our sovereign lord, the King, out of his princely grace," as the colonists themselves phrased it, had attended to this, and he fixed our boundary at a line running three miles north of the Merrimack River, thus accounting for the serpentine character of our southern frontier as well as for continuous heart-burnings ever since; for we have ever looked upon Lowell, Lawrence, and Haverhill as our lost ewe lambs—much, indeed, as the Montenegrins used to regard Spizza.

However, we should have thought ourselves lucky in that we escaped the more presumptuous claims set up in the name of the Worshipful John Endicott, Governor, who sent two surveyors to mark the extent of his jurisdiction, which he understood to extend to three miles beyond the headwaters of the Merrimack.

These worthies, one of whom, by the way, was John Sherman, ancestor of the statesman of that name, paused only when they had reached Lake Winnepesaukee, where they inscribed a bowlder with rude initials and the date, 1652, and returned home highly pleased with themselves, no

HERE THE STATE'S POLITICAL BATTLES HAVE BEEN FOUGHT FOR 100 YEARS

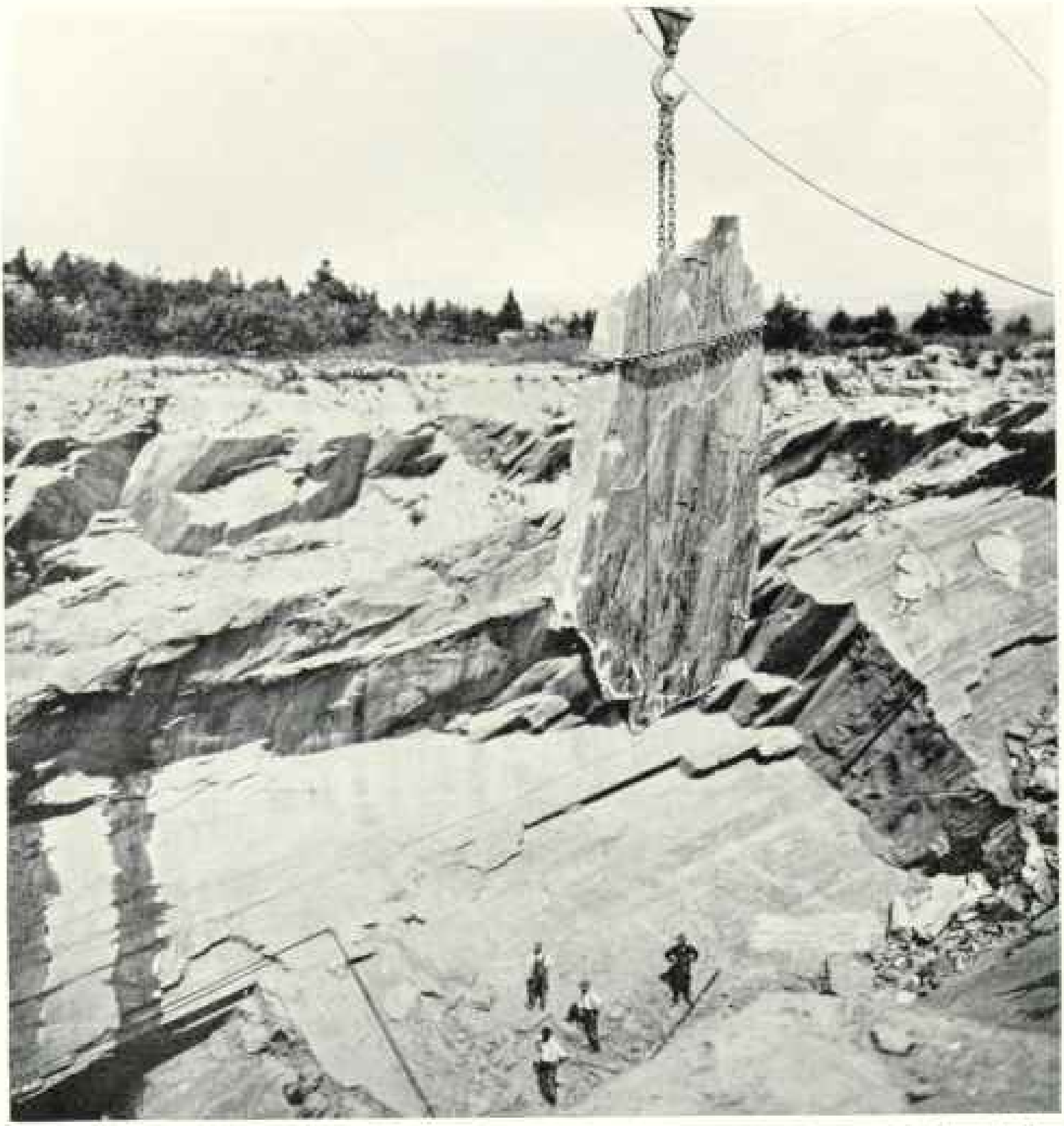
The dignified Statehouse at Concord is set in spacious grounds, which add much to the charm of the old city. In the foreground is a statue of President Franklin Pierce (see, also, illustration, page 276), and in the rear, one of Webster (see illustration, page 278). Concord is the scene of some of Winston Churchill's stories (see text, page 295).

doubt. This bowlder passed from sight and remembrance for more than two hundred years, when a period of extreme low water brought it to view. It was promptly taken possession of by the State, protected by a granite canopy, and now is hailed by tourists as another Plymouth Rock (see page 275).

The Merrimack, of course, does not have its origin where the Worshipful John sought to place it. The river is formed by the confluence of the Winnepesaukee and the Pemigewasset, which come together in the town where Daniel Webster—and I—were "raised." The streams meet at a point where used to stand a Congressman's stable, and an urchin of the town being asked by his teacher, "Where does the Merrimack rise?" promptly answered, "Back o' Warren Daniell's barn."

THE MERRIMACK IS UNMATCHED AS A SPINDLE-TURNER

Down in Maine they speak of "the lordly Kennebec," but the Merrimack stands unmatched. Its boast is that it turns more



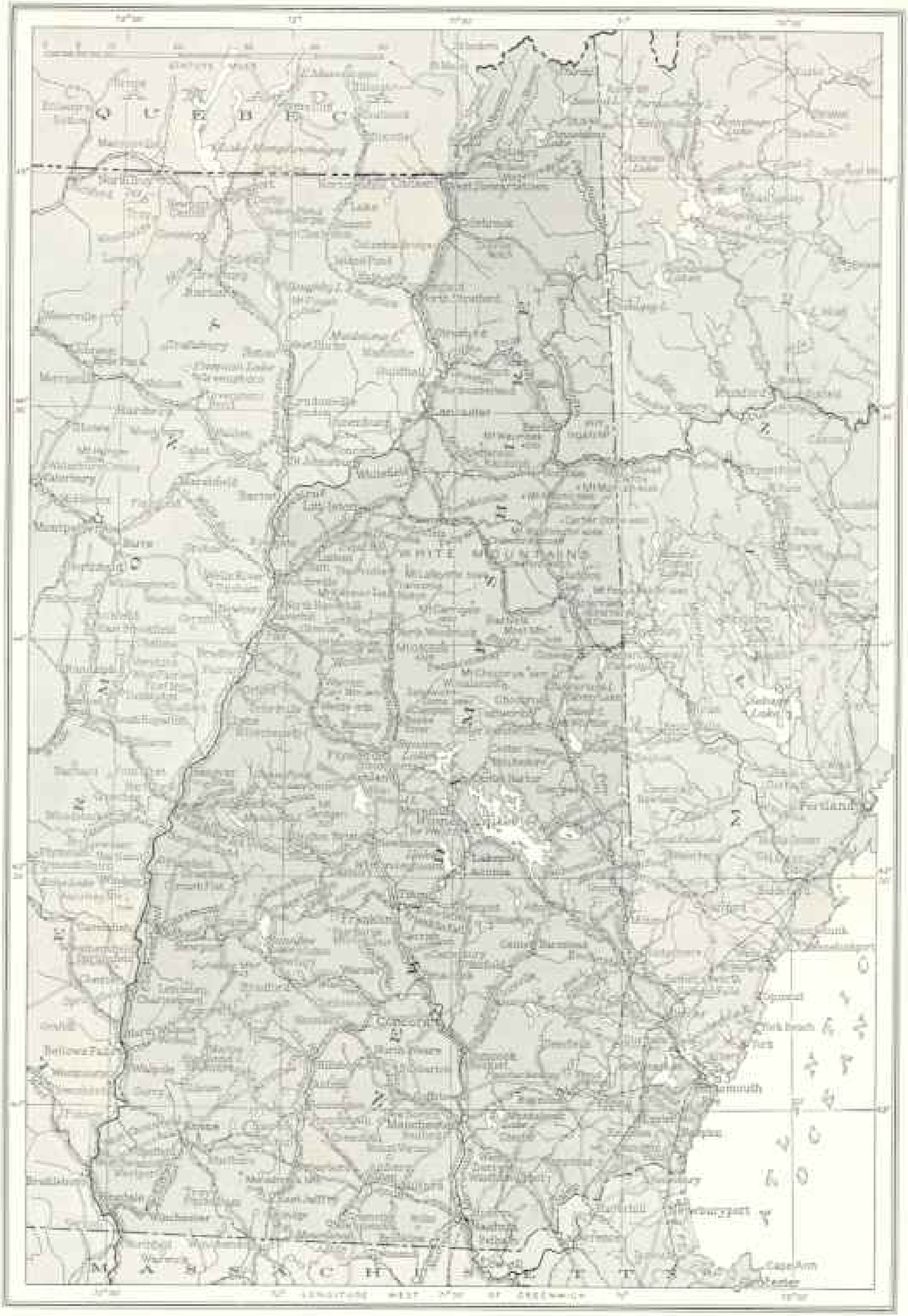
Photograph by Olson Studio

"NEW HAMPSHIRE HAS MINED MICA FOR MORE THAN A CENTURY

The manufacture of old-fashioned whetstones, grinding wheels, abrasives, sharpening stones, and kindred products has brought fame to the village of Pike. At present about half the product is exported, chiefly to Japan, Italy, England, and France. For 60 years New Hampshire was the country's largest producer of mica, until superseded by North Carolina (see, also, text, page 303).

spindles than any other stream in the world, for upon its banks stand the great industrial cities of Manchester, Nashua, Lowell, Lawrence, and Haverhill; and we have always looked with pride upon our centers of the textile world, from which New Hampshire's products have gone out all over the globe, almost as ubiquitously as those of the Standard Oil Company.

Time was when solid trains of cottons used to go from Manchester and Nashua north and west through Canada to the Pacific coast, and thence to the Orient, to clothe the "heathen Chinee." But changing styles, slackening immigration, rayon, and what not have played havoc with New England's textiles, while the Orient has learned to make its own shirtings and the South now not only grows, but weaves, its own cotton. The miles of mighty mills at Manchester still run, but not with their former volume.



Drawn by A. H. Bumstead

A MAP OF NEW HAMPSHIRE

The main motor highways of the State are shown by light parallel lines.

The Merrimack, however, like Old Man River, keeps rolling along; and so do the other streams which New Hampshire originates and which have so greatly enriched New England. The Kennebec alone, of all the great rivers of this section, escapes New Hampshire paternity. The Connecticut, the Androscoggin, the Saco—these, with the Merrimack, make the great quartet to which the four States of New Hampshire, Massachusetts, Vermont, and Connecticut owe so much.

Vermont may be a trifle unenthusiastic about this, because, when that State was set up, its boundary was fixed at the western bank of the Connecticut instead of in midstream, as is customary. For a time this arrangement was wholly satisfactory, because it meant that New Hampshire had to bear all the cost of the bridges; but with the development of the hydroelectric industry and the harnessing of the Connecticut to its demands came an interesting problem of the taxation of the gigantic works which were installed, and the two States are now in court for a delimitation of frontiers which will settle the question.

THE EPISODE OF THE INDIAN STREAM REPUBLIC

We of New Hampshire are resisting our neighbor as vigorously as she resisted us more than 150 years ago. That was one of the two singular and picturesque episodes of like nature which relieve the rather stern panorama of our history. The royal governors of New Hampshire had the urge to enlarge the borders of their phylacteries, and one of the two Wentworths who ruled us in days just prior to the Revolution issued township grants in profusion and on both sides of the Connecticut.

The story of the New Hampshire grants is an interesting one; but I am not now writing a history. Many a worthy figured in it, the redoubtable Ethan Allen the most conspicuous. With him was a leading member of the Dartmouth faculty, and among them they attempted to set up a new State. They succeeded; but when they sought to incorporate into it some fifty towns of New Hampshire, that was "too mutch"; there was Federal intervention, and both Vermont and New Hampshire withdrew within their present frontiers.

NATURE ETCHES A GIANT STONE FACE

This remarkable profile likeness to a human face projects from the ledges on the upper cliffs of Profile Mountain, in Franconia Notch. The height from chin to forehead is 40 feet. Known also as "The Old Man of the Mountain," this scenic feature is a State park.

The other episode to which I have referred was more romantic in its nature and far more serious in its implications. The treaty of peace between the Colonists and the mother country left much of the Canadian border in a state of delimitation. One such section was the line between the Province of Quebec and the States of Maine and New Hampshire.

Pourparlers produced no results, and more than once the territory was occupied by militia from the States or from the Dominion. It was a veritable No Man's Land, and as such became a city of refuge for those who fled the law. It used to be said that one of the leading citizens of the community arrived from Portsmouth, where residence had become uncomfortable, carefully packed in a hogshead.

NEW HAMPSHIRE BLOOD HAS ENRICHED MANY STATES

The sturdy pioneers who had originally peopled these lands decided to put an end to these conditions, and they set up the Indian Stream Republic, with a written constitution and all the elements of a government, including a judiciary, to enforce whose judgments a prison was provided, consisting of a huge iron kettle the designed purpose of which was the boiling of potash. This, turned upside down, afforded durance vile and doubtless was of much helpfulness in maintaining the tiny Republic's order, which is said to have been exemplary.

The Ashburton Treaty closed the incident and added laurels to Daniel Webster's brow; but he never lived down the resentment of the people of Maine, who thought that the line, as he agreed upon it, gave an advantage to New Hampshire, and in consequence Webster never found support in Maine for his presidential aspirations.

The Indian Stream Territory stands at the headwaters of the Connecticut, and about the three lakes in which the river takes its source are to be found some of the most rugged scenery, the most stately forests, and the best hunting and fishing in the entire East. From these headwaters to those of the Androscoggin is but a short day's tramp through the woods, and from there to the source of the Saco is but little distance, as the crow flies. And here, too, early romance not unmixed with tragedy finds its home.

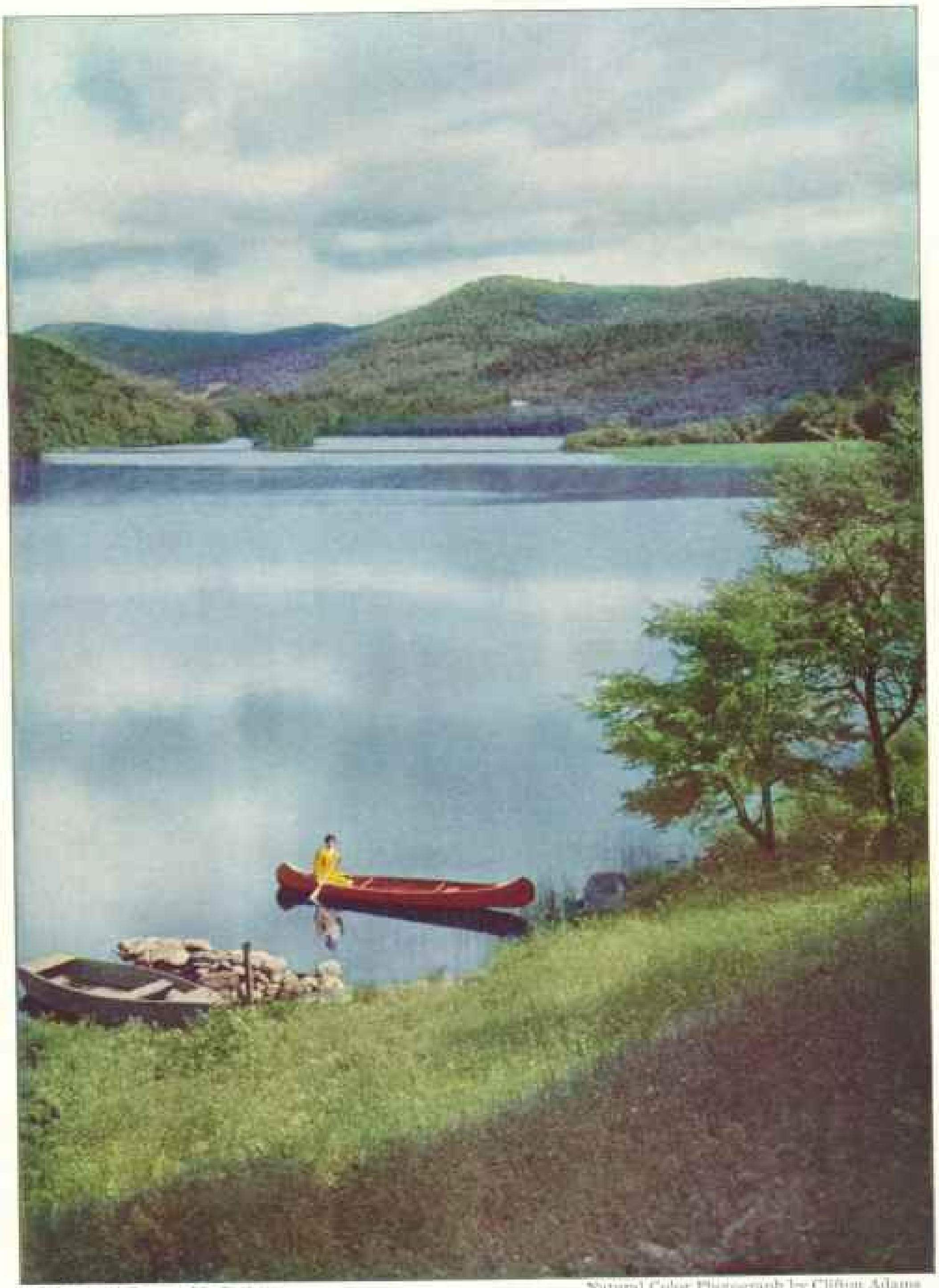
This quartet of rivers which New Hampshire gives to her neighbors, flowing south to their enrichment, has always seemed to me much like the Nile; and I have taken occasion more than once, when speaking to audiences in Massachusetts, to remind that Commonwealth of other and human streams which have flowed thither from New Hampshire and which have taken of the best of our blood and enterprise for the benefit of other communities.

Nor is it alone the Eastern and more near-at-hand States to which we have contributed. The Western Reserve, the Middle West, the Intermountain territory, and the Pacific coast have all levied tribute upon us. To their agricultural and industrial beginnings we have made constant contribution, and what we have done for their public life is fairly comparable with what Ireland is supposed to have done for the New York police force. From Michigan to Oregon a continuous chain of New Hampshire men may be named who have been Governors, Senators, Congressmen, and leaders in all of life's activities.

The opportunities at home have by no means been neglected, and if we have pioneered in other sections of the country we have not failed to be pioneers at home as well. We claim the first summer resort on the Western Hemisphere. At any rate, it was His Excellency Governor John Wentworth who set up his summer home at Kings Wood, on Lake Wentworth, adjacent to Winnepesaukee, and cut a road to it through the woods from Portsmouth, his capital, for the advantage of himself and his cronies, who made up the company at this the first of American watering places.

Kings Wood was a lordly establishment, by all accounts, and was said to have been better built and more attractive than Mount Vernon. Wentworth himself estimated its cost at upward of twenty thousand pounds sterling, and in a letter written from Halifax, after the Revolution had exiled him, he described the property in such wise as to prove it really baronial.

His Excellency John moved about his Province with much freedom. A lake and a town and a hotel bear his name, and at Dartmouth College, for which he granted the charter, he was the preëminent guest at the first commencement, bringing with him a silver punch bowl which still graces presidents' commencement receptions, but which



Natural Color Photograph by Clifton Adams

TO THE EVER-CHANGING BEAUTY OF HER LAKES VERMONT ADDS THE RESTFUL CHARM OF MANY HILLS

Echo Lake, near Tyson, is not far from the birthplace of Calvin Coolidge. Within the State there are some 400 lakes, ranging from broad-bosomed Champlain to woodland ponds covering only a few acres.

MAKING HAY WHILE THE VERMONT SUN SHINES

Almost a fourth of the State's farm land is devoted to hay and the crop yield is nearly a million and a half tons.

 Natural Color Photographs by Clifton Adams

FERNS GROW SHOULDER-HIGH IN THE COUNTRY ABOUT DANBY

In summer entire families come up from New York and Boston and camp out on the hills to pick ferns, which are baled and shipped under refrigeration to florists throughout the country.

GREEN MOUNTAIN STATE APPLES FIND "EMPLOYMENT" IN NEW YORK AND BOSTON

North of Burlington are numerous large orchards whose spicy red McIntosh apples are becoming increasingly popular in the cities of the East.

 Natural Color Photographs by Clifton Adams

GATHERING THE CORN CROP IN A TIME-HONORED WAY

The rugged character of the terrain in Vermont has made extensive use of farm machinery impracticable, and oxen are still found at work on some of the State's farms.

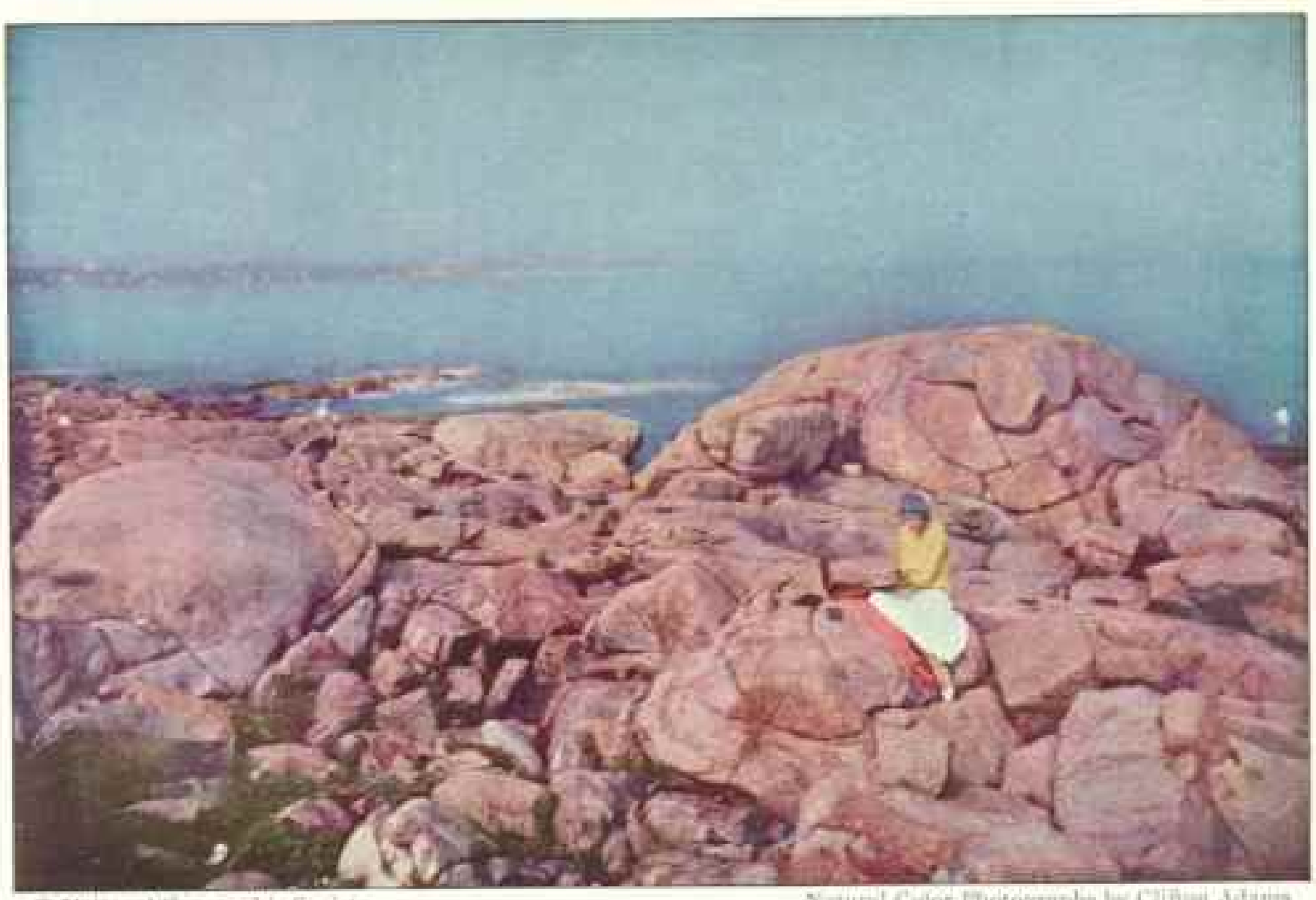
THE HILLS OF NEW HAMPSHIRE AFFORD PASTURAGE FOR EXTENSIVE DAIRY HERDS

 Natural Color Photographs by Clifton Adams

GLADIOLI UNDER CULTIVATION NEAR EXETER

In the country about the New Hampshire town where Phillips Exeter Academy is located, considerable areas are devoted to floriculture. Both flowers and bulbs are marketed.

QUARTERS FOR BLOODED STOCK ON LAKE WINNIPESAUKEE, NEW HAMPSHIRE



 Natural Color Photographs by Clifton Adams

BASS ROCKS, MASSACHUSETTS, OFFERS A VANTAGE POINT FOR ARTISTS

When fair skies and calm waters prevail, the devotees of palette and brush ensconce themselves here, but when a "nor'easter" comes raging in waves completely submerge the rocks.

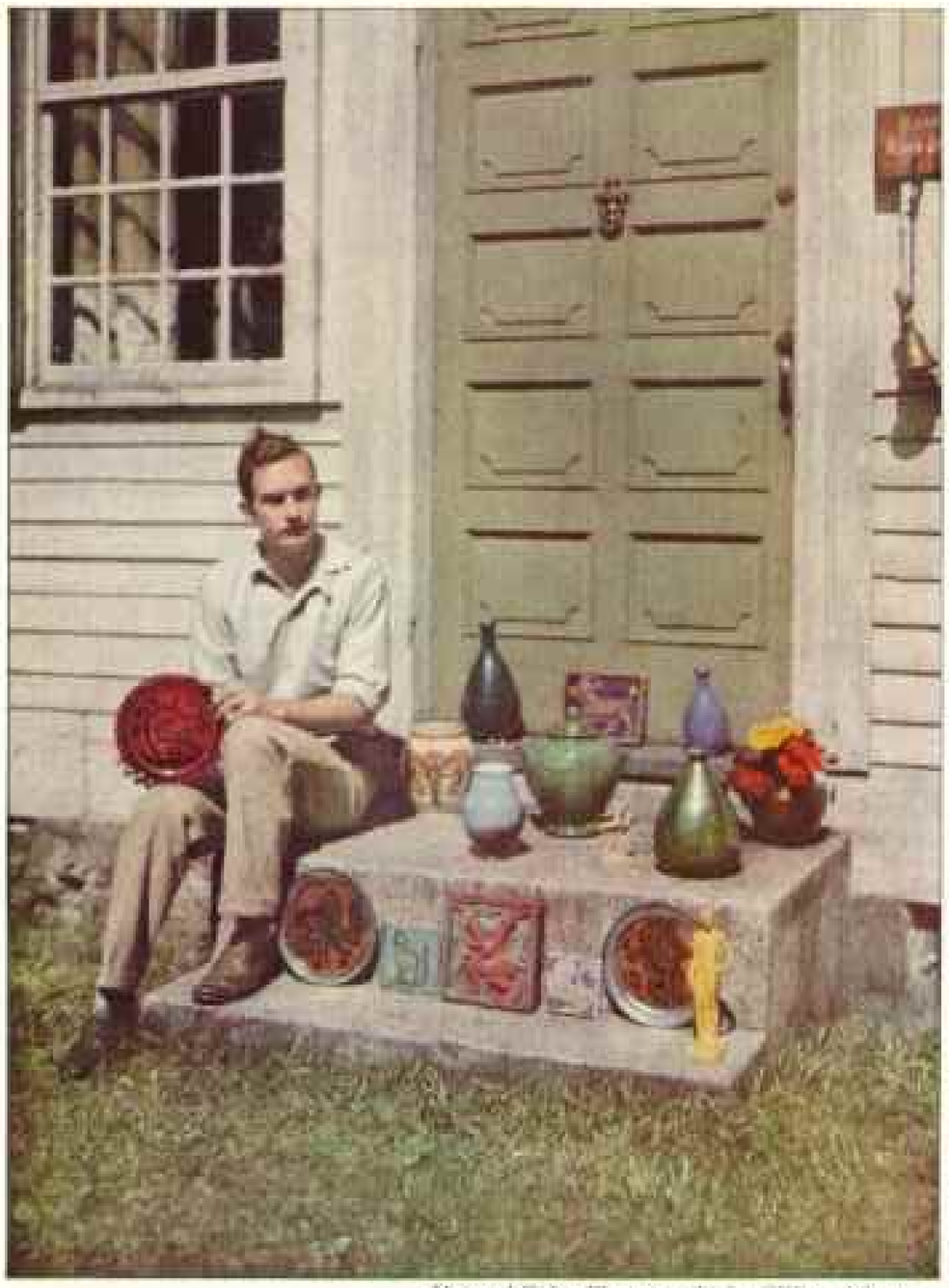
Natural Color Photograph by Clifton Adams

MOUNT CHOCORUA RISES AMID AN ALLURING REGION OF WOODLAND SLOPES AND NESTLING WATERS

Its jagged contour gives this 3,500-foot peak a more impressive appearance than can be claimed for many loftier summits in the White Mountains of New Hampshire.

CIGAR-STORE INDIANS ARE A VANISHING RACE

A Danbury, Connecticut, tobacconist has preserved this specimen of the once popular "wooden red man." A few decades ago nearly every tobacco store had one of the tribe in evidence as a sort of trade-mark.



Natural Color Photographs by Clifton Adams

A YOUNG POTTER DISPLAYS HIS PRODUCT

He uses an old-fashioned potter's wheel and bakes his clays in an orchard kiln in Cornish, New Hampshire. His plates, tiles, vases, and bowls attract the attention of many passing motorists.

CAPE COD WINDMILLS MAY BE HAD IN ALL SIZES

Many visitors to Chatham and other towns on the Cape take home these miniatures to serve as weather vanes and garden ornaments.

Natural Color Photographs by J. Allan Adams

A FLOWER GARDEN BRIGHTENS THE LANDSCAPE NEAR GLOUCESTER

now contains refreshment much more innocuous than the "five hundred gallons of New England rum" which, tradition says, constituted so large a part of the initial curriculum.

He also presented an ornate badge of office for the president of the college, which is duly handed to each new incumbent at his inauguration. The late President Tucker accepted the bauble, saying: "The badge I accept, but I cannot promise to wear it." President Hopkins, however, wears it on academic occasions and did not disdain to have his portrait painted with it.

Wentworth's enterprise at Wolfeboro, named, it may be noted, for him who "fell victorious" upon the Plains of Abraham, turned the pioneer stream northward as against its earlier westward trend, and he had the satisfaction of seeing, before his exile, the Notches at Franconia and Crawford's opened for travel.

THE FIRST OF THE WHITE MOUNTAIN BONIFACES

Just when the first tourists began to trickle into these defiles is a matter of both conjecture and controversy; but the claim of Abel Crawford seems fairly well substantiated as the first of White Mountain bonifaces, at his inn at the beautiful Notch which bears his name. Accommodation was primitive, I imagine, if one can judge from a remembered remark of an old friend of mine who went there as a boy nearly a hundred years ago. The number of guests who could be housed, he said, depended upon how many beds were set up in a room and how many sleepers were put in each bed.

It's nothing like that now. Millions of dollars have gone into the recreational industry in New Hampshire, and the financial results are astounding. The State's investment in this enterprise is a larger sum than is represented by even the largest of our mills, our railroads, and our shoe industry put together, and the revenue brought into the State each summer is prodigious. The establishments range in size and character from the great and palatial hotels in the mountains to the simple farmhouse with "rooms for tourists," but the hospitality is all of the same grade.

Among the titles in which New Hampshire glories is that of "the Switzerland of America." And indeed we are—not alone because of our mountain topography, our "white coal," and our peaks, which, after all, are, with the exception of Harney Peak, South Dakota, the highest east of the Rockies and north of the Carolinas and Tennessee—"from Rocky Mountains' noble heights to crest of the Pyrenees," as one of our exultant poets has sung it. One of our historians, Frank B. Sanborn, a native of the State, found our claim to the title in the character of our people, whom he likened, in their resistance to the aggressions of the Wentworths in pre-Revolutionary times, to the revolt of the Swiss of the Forest Cantons against the oppression of their Hapsburg governors; and Mr. Sanborn adds: "The story of those far-off and legendary days cannot be read, especially in the verse of Schiller's 'William Tell,' without recalling to a son of the Granite State the annals of his own ancestors."

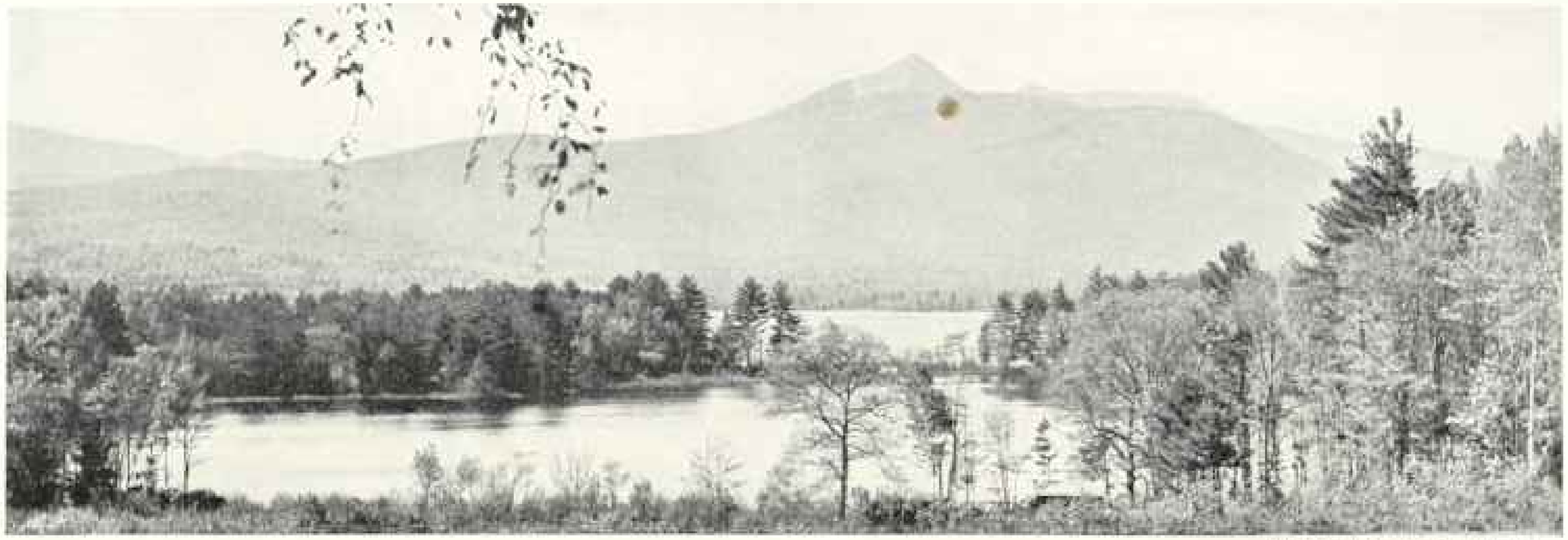
We like to think this to be true. In summer our defiles are thronged by the thousand, but in winter we are well-nigh deserted. The Appalachian Mountain Club visits us, piecemeal and sporadically, though their trails and their cabins have a call which should be as strong in winter as in summer.

The Dartmouth Outing Club, however, has been by no means slow to make use of the winter months.* This organization has its chain of cabins, also, which covers the territory from Mount Cardigan to Mount Washington, and its hikes, as described in the college publications, remind one of the heroic tales which Napoleon wrote upon the face of the Alps. At Dartmouth the winter carnival has become a fixture in the college calendar, and it is now celebrated with all the embroideries of such events, ice sculptures adding the artistic to the adventuresome, and a queen to rule the roost (see page 281).

Some of our cities, whose latitude gives permission, have their carnivals, too; and another fixed observance of our winter season is the dog races, because in our eastern hills lie the kennels from which explorers of both the Arctic and the Antarctic have taken their sledge teams.

Increasing competition and changing economic conditions have caused a recession in our basic industries, but there can be no competition and there is no change

* See "Skiing Over the New Hampshire Hills," by Fred H. Harris, in the NATIONAL GEOGRAPHIC MAGAZINE for February, 1920.



Photograph by W. Sanford Full

PROUD CHOCORUA REFLECTS ITS CREST IN A LAKE WHICH LAVES ITS FOOT

The mountain derives its name from an Indian chief who was killed by the whites on its summit (see, also, Color Plate VI).

Photograph by Eugene S. Jones

MERRIMACK, THE SPINDLE-TURNER, AND ITS VALLEY, AS SEEN FROM HOOKSET

In the distance is the village of Suncook, and to the right is one of the covered bridges which are occasionally found in New Hampshire and other New England States (see, also, illustration, page 300).

Photograph courtesy U. S. Forest Service

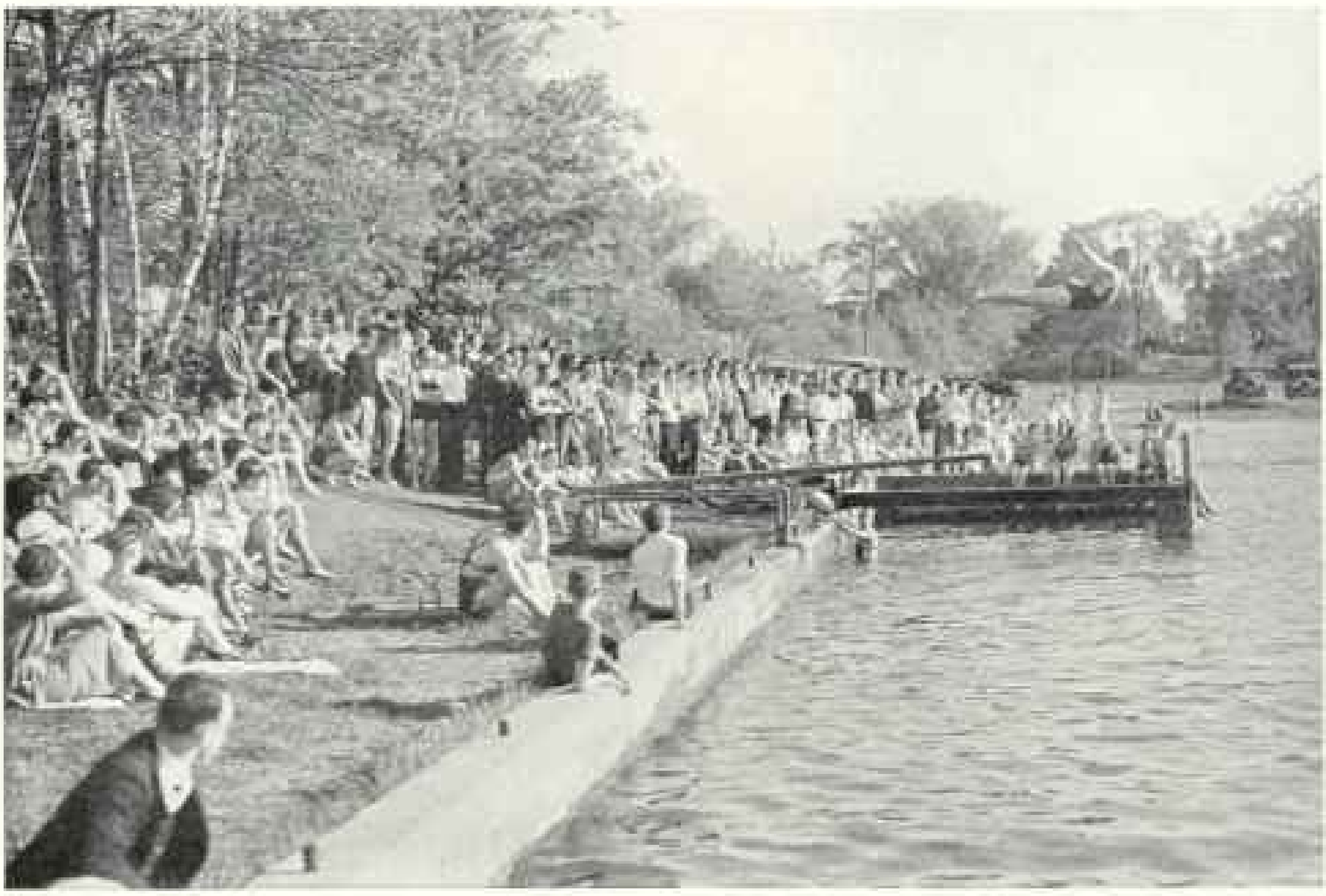
THE WHITE MOUNTAIN NATIONAL FOREST IS A RECREATIONAL MECCA FOR MORE THAN HALF A MILLION PEOPLE

The mountains, threaded by an excellent system of motor roads, possess tourist accommodations ranging from fine hotels to boarding houses, and free roadside camp grounds. New Hampshire shares with Maine the possession of the White Mountain National Forest, the former having the larger section, more than 480,000 acres acquired to date.

Photograph by H. Parker Rolfe

CALISTHENICS AT A CAMP FOR GIRLS IN THE GRANITE STATE

So strong is the lure of the State's lake and mountain country that vacation camps abound. There are more than 160 organized camps, visited every summer by some 18,000 boys and girls from various points of the compass. Millions of dollars have gone into the State's recreational industry.



AN INTERFRATERNITY AQUATIC MEET AT UNIVERSITY POND, STATE UNIVERSITY

From swimming to skiing, students of the University of New Hampshire, at Durham, show prowess in sports. Many of the undergraduates here, as also at Dartmouth, are Americans of Scandinavian descent, the children and grandchildren of fathers who came from Europe to enter the lumber and pulp industries.

FRANKLIN NURTURES INDUSTRY AS WELL AS ORATORY

A large hosiery mill gets its power from the never-failing Winnepesaukee River, as it flows from the lake. The girl operators are working at the "loopers," which close the toes and heels after the remainder of the hose has been knit on other machines. Daniel Webster was born in old Salisbury, now Franklin.

THE GOVERNOR ENDICOTT ROCK AT THE WEIRS

In 1652 surveyors employed by Governor Endicott of Massachusetts marked a bowlder to indicate the supposed headwaters of the Merrimack River. The bowlder is now preserved under a granite canopy (see, also, text, page 258). The Weirs is a pleasure resort on Lake Winnepesaukee (see, also, illustration, page 308).

AS IN GOVERNOR WENTWORTH'S DAY

One of the projects of the Wolfeboro Historical Society is the restoration and preservation of the Clark House, built about 1790, to its original colonial style in furniture and fittings. This set of old pewter and tableware, with horn handles, is of the Revolutionary period. The hostess's fichu is more than 100 years old and belonged to her great-grandmother.

WORKMEN IN THE NEW HAMPSHIRE FOREST NURSERY PLANTING DOUGLAS FIR

On the right is red pine. These nurseries grow young trees, such as pine, elm, maple, and others, for sale to citizens of the State for their own use. The State highways are being beautified by the State Highway Department with these trees and also with birch.

THE BIRTHPLACE OF THE FOURTEENTH PRESIDENT OF THE UNITED STATES

This homestead, in Hillsboro Town, was built in 1804 by Benjamin Pierce, and here his son, Franklin, the future President, was born. The elder Pierce was one of the Revolution's "embattled farmers" who, at news of Lexington, hitched his oxen to a stump and set off with his uncle's gun (see, also, text, page 307). He became an officer in the Revolutionary Army and later a Governor of New Hampshire.

SO FAR AS POSSIBLE, NATIVE INDUSTRIES USE NATIVE RESOURCES

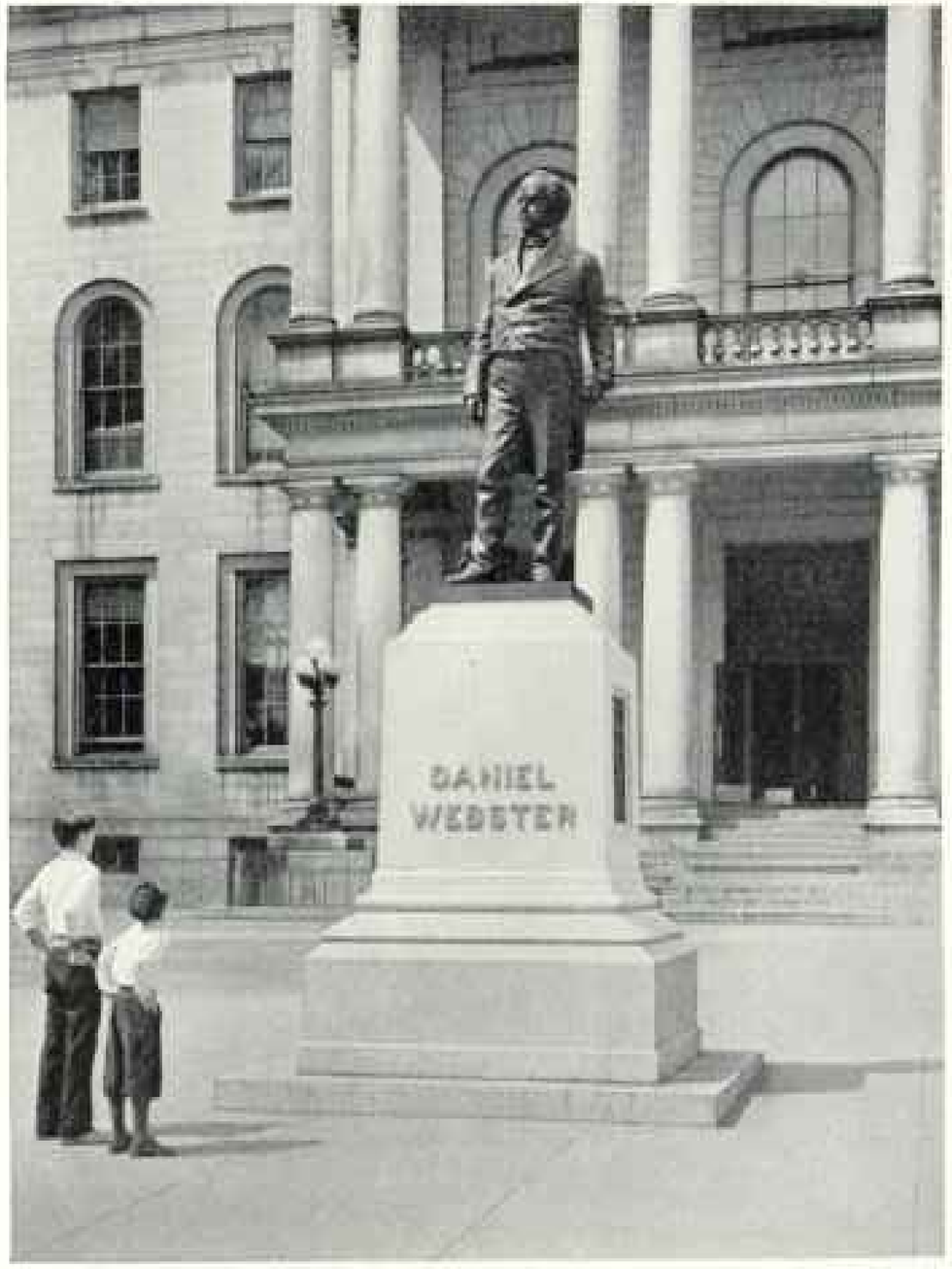
A display of more than 400 kinds of wooden toys made at South Tamworth. These are fashioned from native white pine and hardwood. The dog sled (center) is one of those made here for the Byrd Antarctic Expedition. New Hampshire has upward of 225 forest industries.

CONCORD COACHES MADE HISTORY FOR THE UNITED STATES

Such vehicles were used in the conquest of the West and Southwest. The famous Deadwood coach was built in Concord. Other coaches did heavy duty in South Africa and Australia. This old vehicle, with its strap suspension and long hand brake, is preserved by the Boston and Maine Railroad in Concord. It was built in 1865 and in 1931 was repainted by the son of the man who first decorated it.

WHERE JOHN PAUL JONES WAITED

The Purcell House, now the home of the Portsmouth Historical Society, was a boarding house in 1777, when the young officer came up to superintend the fitting out of the *Ranger*, on which he sailed to France with news of Burgoyne's surrender (see text, page 308). The rear of the house, with a lady in the costume of the long ago.



"THE NOTABLEST OF ALL YOUR NOTABILITIES"

The statue of Daniel Webster before the entrance to the Statehouse, in Concord (see illustration, page 258). No wonder the boys look up to him, for he was the State's most famous son (see text, pages 262 and 310). Though one of the Union's smallest States, New Hampshire has had a long list of great men.

PHILLIPS EXETER IS IN THE FRONT RANK OF AMERICAN PREPARATORY SCHOOLS

The academy for boys celebrated its 150th birthday June, 1931. It was the first educational institution to be chartered by the State of New Hampshire.

THE DOORWAY OF THE WENTWORTH-GARDNER HOUSE IN PORTSMOUTH

One of the many famous old houses of the city, erected in 1760 and now owned by the Metropolitan Museum of Art. A recent exhibition here of Chippendale furniture was viewed by thousands.

LOOKING ACROSS BLUE-GREEN ECHO LAKE TO WHITE HORSE LEDGE

The bluff is 1,445 feet high. This is one of three ledges, landmarks along the Saco River near North Conway.

DARTMOUTH HALL, IN OLD DARTMOUTH ROW: HANOVER

This building once housed the entire college, with classrooms and dormitories, but now is used for classrooms only. More than a century has passed since Daniel Webster distinguished himself in the famous "Dartmouth College Case," and in that time the institution has forged to front rank, with a student body of more than 2,000 (see, also, text, page 306, and illustration, page 282).

Photograph by Walter R. Merryman

DARTMOUTH'S WINTER CARNIVAL IS A FIXTURE

"It is now celebrated with all the embroideries of such events, ice sculptures adding the artistic to the adventuresome, and a queen to rule the roost" (see text, page 271).

WONALANCET VETERANS OF ANTARCTIC ADVENTURE

Arthur T. Walden (left), in charge of dogs on the Byrd Antarctic Expedition, is petting one of the huskies which went with him to Little America. Some of the dogs are sons of "Chinook," who died there. Native hardwoods at Tamworth (see, also, illustration, page 277) went into the making of these portable kennels and sleds. One hundred of the kennels were used on the Byrd Expedition.

THIS FENCE AT DARTMOUTH IS SACRED TO SENIORS

Woe betide any underclassman found on it! On evenings when weather permits, the seniors gather here with other classes, which are grouped on the Green, for "hums" which are really "sings." In spring, according to tradition, the seniors sit on the fence and carve their initials and signs on the canes of their friends. Baker Memorial Library, the central architectural feature of the campus, is seen in the background.

in those gifts with which Nature has endowed us. As a consequence, there are those who think that our future must lie wholly in the further extension of our recreational interests and in the further development of our water powers. I listened to a speaker who expounded this thesis a few years ago at the dedication of one of our public buildings. As we came out of the hall my companion remarked, "To become a glorified boarding house and a glorified power house strikes me as a damned poor fate for a State like New Hampshire." I agreed with him—and thanked him for his language.

Of course, the New Hampshire of today is not going to submit to such a fate. The chances are, though, that our salvation will come through the development of our water powers, which will permit the distribution of electrical energy far from the seat of its generation, and will enable some of the smaller communities, where hand industries once flourished, to resume their activities.

These hand industries were, in a sense, unique. On many a farm, as one rides over the State, may be seen the small buildings where the menfolk used to sit at the bench and make shoes, which were gathered up by the factory where the stock had been cut and where they were finally boxed for the market.

In my boyhood I lived in a town where hosiery mills flourished—and still do, for that matter. The machinery of that day could not turn out the completed stocking, and I remember the hayracks full of

DOWN ON A FARM NEAR SPRINGFIELD

Although modern methods and machinery are used on the fertile valley farms, a few "yokes" of oxen still exist. This is an old type of sliding yoke.

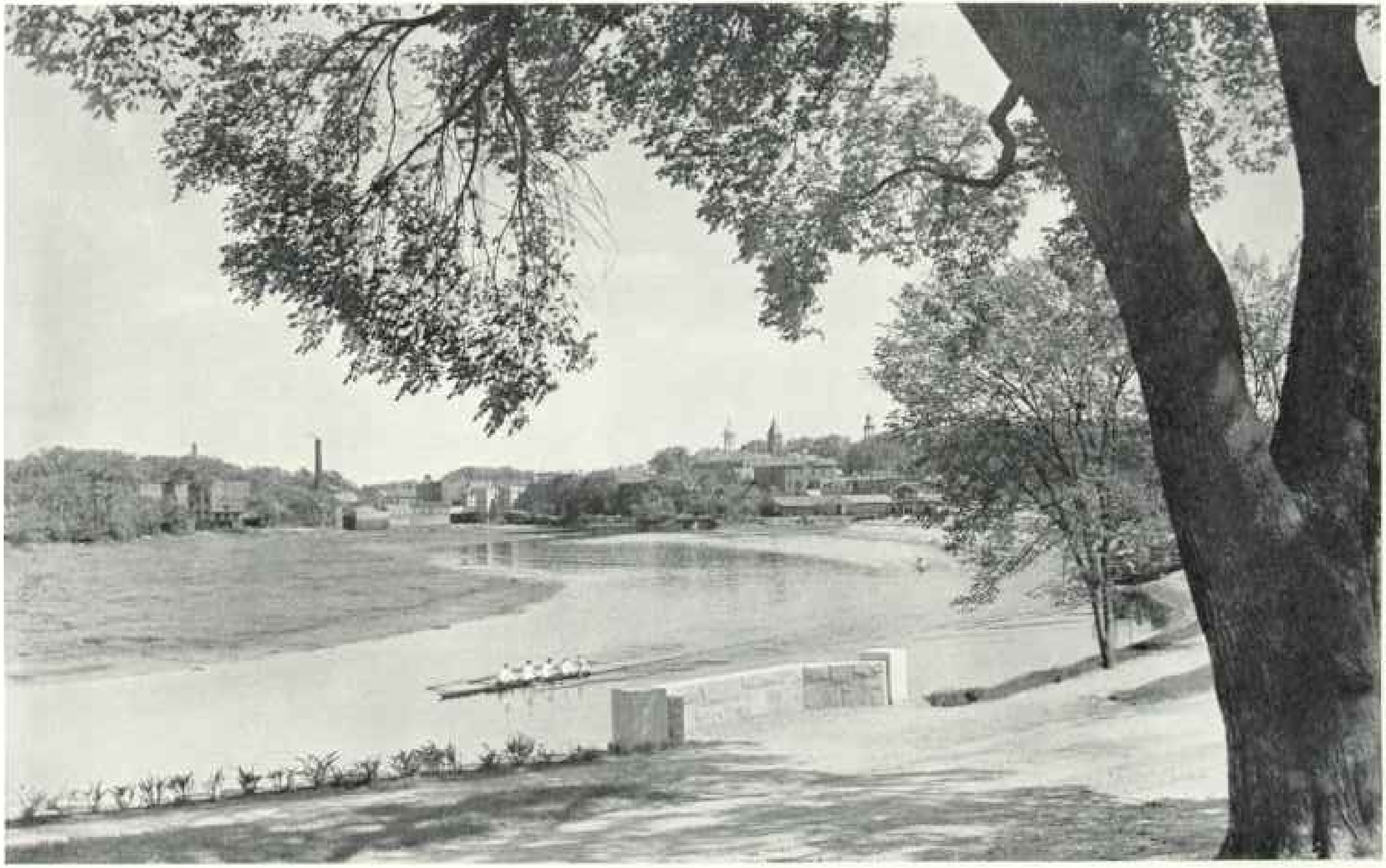
stockings, which were distributed about the countryside to be sewn by the farmers' wives, who thus added to the egg money and the butter money which helped their thin pocketbooks.

This is all gone, with one exception: one of the largest of the country's manufacturers of sporting goods is set down in the foothills of the White Mountains, and from his factory go forth thousands of baseballs to be sewn by the women of the community.

Women in organized industry are plenty enough in New Hampshire, however, but they have not come from the farms, at least not from our farms where hand industry was to be found. With the concentration of our industries in the cities, and particularly with the specialization of our cities in the shoe and textile lines, came a swelling stream of immigration from the North, attracted by the opportunities which our expanding mills provided. Today something like 28 per cent of our population is of French origin, coming almost wholly from the Province of Quebec, and in some of our cities numbering nearly 50 per cent of the whole.

By far the greater part of this immigration has come in the last fifty years. It was just beginning to assume significant proportions in my boyhood, and I remember that a millman in my home town then said to me, "Thirty years from now the New Hampshire manufacturer who cannot speak French will be out of luck." I am not sure about that, but I can testify that a candidate for political office who can speak French has no inconsiderable edge on his opponent.

There are other strains as well, and I recall that one night while campaigning in



FROM THE RIVER, EXETER RESEMBLES AN ENGLISH VILLAGE

Two racing shells, with boys of Phillips Exeter Academy (see, also, illustration, page 279), are at practice on the tidewater stream. The school has some eight-oared and some four-oared shells and enough to put 100 oarsmen on the river at one time.

FOLDING AND CUTTING BLANKETS INTO SINGLES AND PAIRS

The girls manipulate an electric cutter as the blankets come down from the weaving room above. Many of the mill workers in New Hampshire are French Canadians (see text, page 283). A textile mill at Nashua.

MANCHESTER MAKES MILLIONS OF DOLLARS' WORTH OF SHOES

New Hampshire has more than 60 boot and shoe factories, and the Manchester product is known throughout the Nation. These operators are putting the finishing touches on men's shoes.

our largest city I was compelled to use every word in every foreign tongue which I knew. I became of necessity polyglot, even if I was not fluent. I used to wonder, when my environment forced the question upon me, why it was that if the Greeks could run shoemaking machinery in Manchester, New Hampshire, they could not do it in Athens. The answer, of course, is that they could, just as the enterprising Mr. Barta has shown that it can be done in Prague, to the vexation and dismay of the shoe manufacturers over here.

WATER ACREAGE AS PRODUCTIVE OF FOOD AS THE LAND

New Hampshire is not a dry State. At any rate, no inconsiderable portion of our 9,341 square miles is covered with water. Our lakes are innumerable, ranging from Winnepesaukee, with its 80 square miles of area and its 274 islands, down to the tiny tarn in front of the Crawford House, where the Saco River takes its source.

All of these waters, highly protected by the State, teem with fish, and the prediction which Governor Moody Currier made in his inaugural message a half century ago seems to have come true. The old gentleman was pleading for more generous appropriations for the Fish and Game Department, and argued that it should be possible to make each acre of our water area as productive as the average acre of land.

If one throws into the account the revenue in taxes and purchases made by the owners of the sportsmen's camps which have spawned so plentifully on the shores of our lakes and streams, the Governor is seen to have had his vision realized. The Federal Government also has not been neglectful of us, and both the legislature and Congress have established and maintain hatcheries which are modern and efficient—and some of them picturesque (see page 305).

Game birds have been an object of special solicitude in these latter years and new varieties are propagated here, far from their proper habitat. It is with some sense of surprise that motorists encounter so many gay pheasants by the roadside.

Big game have become a real nuisance in many localities. "There's b'ar in them mountains," can be said of the entire stretch of the hills from the lakes to Canada, while the depredations of the deer upon the orchards and gardens are so extensive that special appropriations have to be made to cover the damage by the State-protected animals.

This water of ours, which spreads itself before us so enchantingly to the eye and which murmurs so musically to the ear, has a quality which is unique, in that it is as pure as it is fair, and no drop of it is unfit to drink.

The late Frank Bolles, who was of that colony of Harvard professors which early gained a permanent foothold in the Sandwich Range, in eastern New Hampshire, and whose writings brought enduring charm to the Bearcamp River region, in one of his delightful essays tells of an autumn ascent of the Sandwich peaks; and, remarking upon the beauty of a brook which the party crossed, added that, of course, they drank from the brook. "Not to drink from a New Hampshire brook," he said, "is like failing to speak to a friend whom you meet upon the street or refusing to a little child the kiss which she thinks the world is ready and worthy to give to her."

NEW HAMPSHIRE GUARDS HER WATERS

This potability of New Hampshire waters has long occupied the dream of the greater cities beyond our southern border, and Boston more than once has yearned, like the rich man of the Scriptures, to tap the expanse of Lake Winnepesaukee to assure a constant water supply for its growing metropolitan area. As a matter of fact, legislation was once had in New Hampshire for this purpose, though quite another basis was put forward for it, and but for the premature babbling of some of the projectors of the enterprise, it is altogether likely that Boston to-day would be drinking the pure mountain water of New Hampshire.

A curious configuration exists in the Winnepesaukee region. Between Lake Winnepesaukee and Merrymeeting Pond, which was the scene of Indian joyousness in the primeval days, rises a ridge so narrow and so shallow that the removal of scarcely more than a few score shovelfuls of earth would divert the whole Winnepesaukee watershed from the Merrimack to the Piscataqua and would change the entire character of large areas. Perhaps some day, as man goes on with the beauty-shop experiments which he is attempting

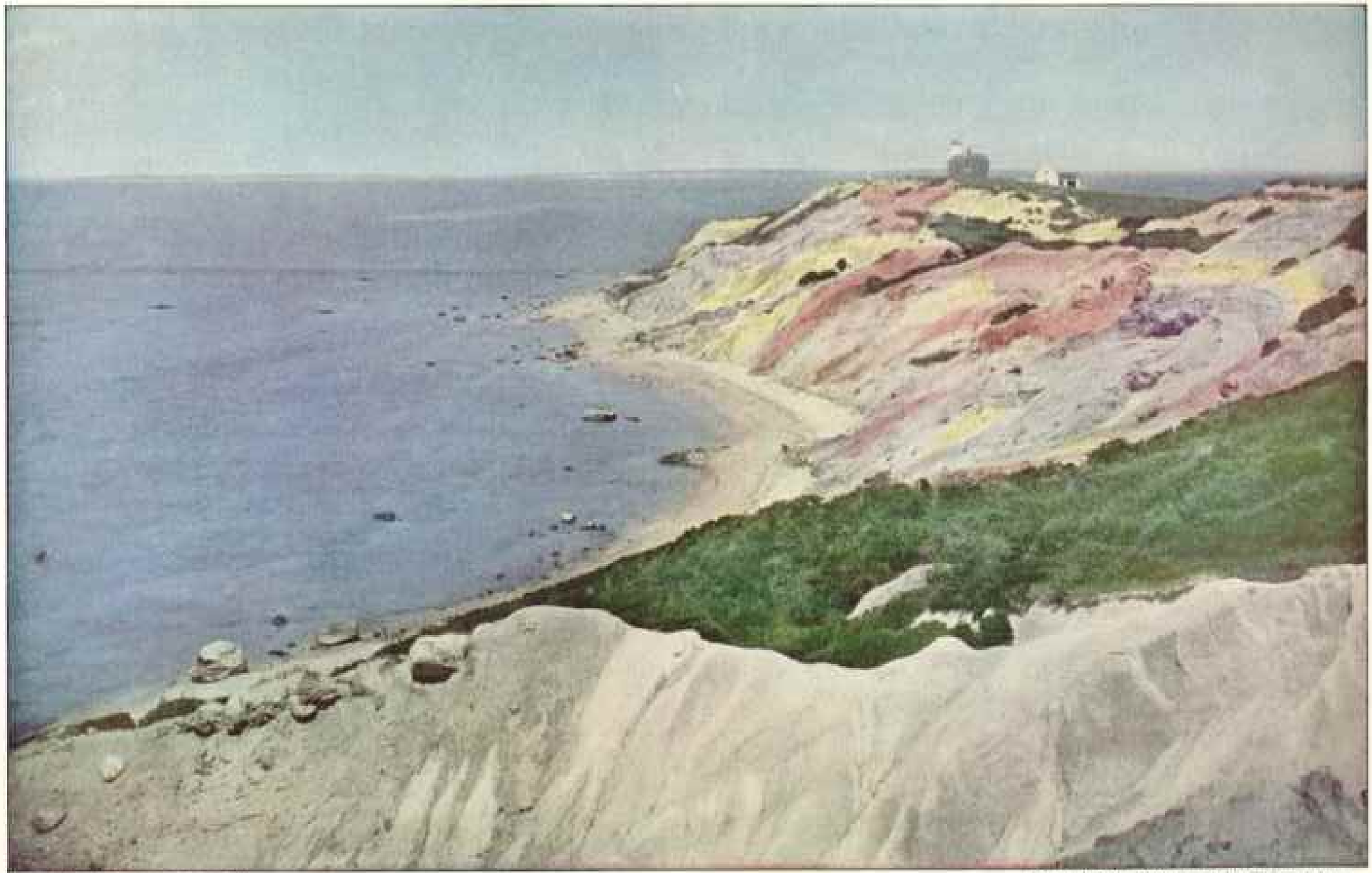
MASSACHUSETTS' GOLD-DOMED STATEHOUSE CROWNS BOSTON'S BEACON HILL.

The central part of the building is of red brick and was completed 133 years ago. Wings of white marble were added decades later.

Natural Color Photographs by Clifton Adams

LONGFELLOW'S FLOWING VERSES IMMORTALIZE WAYSIDE INN

Set in a grove of magnificent oaks near Sudbury, this venerable hostel was the scene of the poet's "Tales of a Wayside Inn." In recent years the tavern has been rehabilitated by Mr. Henry Ford as a museum of the life, manners, and implements of colonial New England.



Natural Color Photograph by Clifton Adams

ON THE SOUTHWEST CORNER OF MARTHAS VINEYARD

The island once derived its prosperity from the whaling industry; to-day its chief concern is the comfort of numerous summer visitors. From Gay Head, here at the southwest corner, a reef known as "Devil's Bridge" extends in a northwesterly direction for nearly three-quarters of a mile. Over much of this distance the reef is covered by only two feet of water. A Government light station warns mariners of its proximity (see Plate XII).

Natural Color Photograph by Clifton Adams

THE ARTIST OF THE UNIVERSE LAVISHED COLOR ON GAY HEAD CLIFFS

For more than a mile irregular layers of many-hued clays are interspersed with a dazzling white sandy substance to achieve an impressive effect. Hikers and climbers find good sport in scaling these 150-foot cliffs.

ONE OF UNCLE SAM'S SENTINELS OF THE SEA

The Government light at Gay Head, Marthas Vineyard, warns passing vessels of a treacherous coast. Its lens multiplies the light of a single oil-vapor burner which may be seen 20 miles at sea.

 Natural Color Photographs by Clifton Adams

A DISCARDED DORY SHIPS A CREW OF GARDEN FLOWERS

No longer seaworthy, the old boat serves now as a flower bed and fits well into the landscape of "Bearskin Neck," the artists' colony section of Rockport, Massachusetts.

PREPARING SNARES FOR UNWARY LOBSTERS

Cedar buoys which float above the lobster pots are marked on one end with their owner's initial. In the background are swordfishing schooners in Nebo Creek, Marthas Vineyard.

 Natural Color Photographs by Clifton Adams

INSPECTING THE NETS

Literally miles of nets line Gloucester's docks, where large quantities of the raw material for New England's famous codfish cakes are brought ashore.

Natural Color Photograph by Clifton Adams

ON THE BEACH AT CHATHAM, CITY DWELLERS FIND RELIEF FROM NOISE AND TURMOIL.

A large vacation colony frequents this attractive settlement on Cape Cod, where the unobstructed Atlantic delights the eye with a wonderful play of color and provides facilities for swimming and boating.

Natural Color Photograph Courtesy of Isaac Patch

ARTISTS AND FISHER FOLK ARE PROMINENT ELEMENTS OF GLOUCESTER'S POPULATION

For three centuries a hardy race of deep-sea fishermen has made this city its headquarters. In recent years, the picturesqueness of life here has brought an influx of artists, and men and women equipped with brush and easel are now nearly as numerous as the "old salts" themselves.

CAPE COD HAS GIVEN ITS NAME TO THIS TYPE OF COTTAGE

The shingles usually are not painted, but are allowed to weather to a mellow gray that melts into the background.

 Natural Color Photographs by Clifton Adams

TRANSFERRING TO CANVAS THE BEAUTY OF A CHATHAM GARDEN

Few parts of the United States are as popular with artists in summer as Cape Cod and the islands off the Massachusetts coast.

upon the face of Nature, this may be done; but New Hampshire lawmakers are more wary now and the chances are against it.

Referring to the Harvard colony in which Frank Bolles was a pioneer, it is worthy of note that many communities have come to exist among us where the colonists have been drawn together by some common interest—literary, artistic, or sporting.

GREAT NAMES IN LITERATURE, EXPLORATION, AND ART

The group which continues to adorn the Sandwich territory has been always wholly literary and scholastic. William James was long among its leaders, and doubtless his philosophy was fortified as he looked upon the glistening peak of Chocorua, pondered upon its legend, and fell back upon the eternal verities, as shown by unchanging Nature and changing mankind. Lord Bryce once sought summer surcease upon our eastern slopes, and while it is unlikely that there resulted any new chapters of "The American Commonwealth," he could not have failed to gain from our countryside some reflections for his later writings upon democracy, which exists nowhere more vigorously than among the mountain folk of New Hampshire.

And, Nestor in the group as it is to-day, stands, sturdy and strong, our first citizen, Gen. Adolphus W. Greely, who spent his boyhood in that neighborhood and who now enjoys the evening of his long, adventurous, and useful life at Hidden House, a picturesque cottage with a site which does not belie its name.

A somewhat similar colony has grown up on the far western border of the State, where Ascutney rears its noble head and where the broad intervales of the Connecticut are as attractive now as they were to the early settlers. Near Cornish, Saint-Gaudens not only made a home, but established a studio; and here some of his finest works were conceived and executed. The place, since his death, has passed into the hands of an association of his friends and admirers, who plan a unique memorial which shall contain "a collection as complete as possible of originals and replicas" of the work of this foremost American sculptor. Here Maxfield Parrish found inspiration, and here Winston Churchill wrote that epoch-making series of political historical novels which contributed so much to bringing about the political upheaval of twenty-odd years ago.

A little farther south, at Dublin and its environs, nestling upon the rugged shoulders of Monadnock, the southern outpost of our greater hills, is still another colony where business men and statesmen from afar—some of them, however, with ancient New Hampshire connections—have built up a community of great estates which we take pride in thinking can rival anything which Lenox or the Berkshires can produce, while upon that brief but lovely seashore of ours one will find its ocean girdle beset with architectural as well as scenic gems, and within a stone's throw of each other three governors and a score of princes of the business world have made their summer homes.

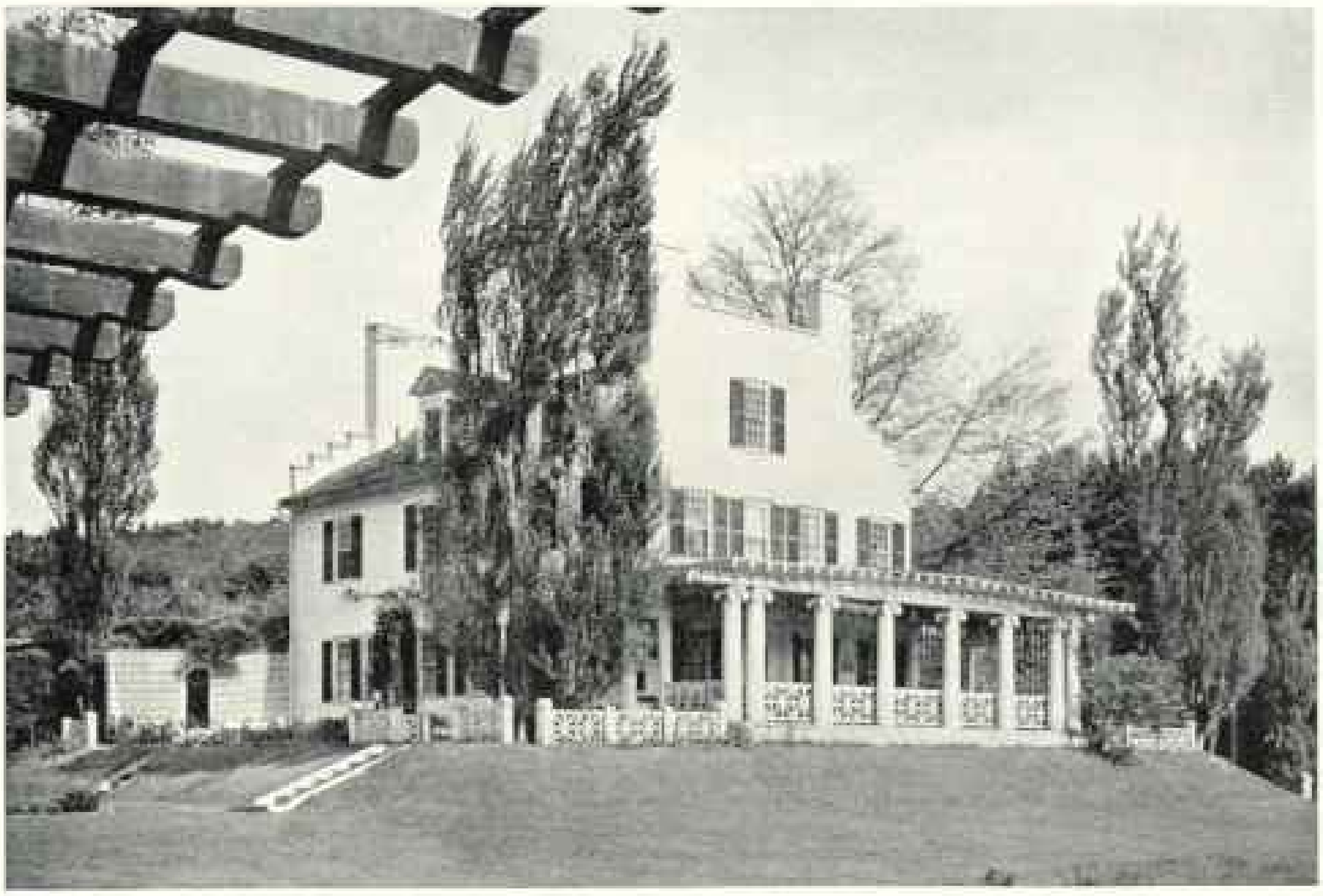
In the White Mountains, of course, the pen has always found inspiration. Thomas Starr King was the forerunner of the notable group which has sought summer refuge in our northern defiles, and following him has come an immmerable company of writers, musicians, and artists from whom New Hampshire has taken rich toll in their compositions celebrating the beauties and the charm of our State.

It is curious to note the beginnings and the development of these characteristic colonies which dot our summer landscape. Perhaps an enthusiastic pioneer has served to advertise the place. In one instance a group is made up almost wholly of homes of the patients of a distinguished physician, who insist upon living within the balm of his presence, while another grew up through the blandishments of a distinguished journalist, a native of the State, who sought to bring his newer friends around him in the community where his older friends still abided.

THE STATE SETS GREAT STORE ON EDUCATION

New Hampshire has always laid great store upon education, and in less than fifteen years from the date of the first settlement schools were established in the earlier towns and contracts were made with imported teachers, who were paid at public expense.

The colony was but seventy years old when, amid the distress and distraction of the French and Indian War, the Assembly



"ASPET," THE HOME OF AUGUSTUS SAINT-GAUDENS, NEAR CORNISH

With the statue of the Standing Lincoln in his mind, Saint-Gaudens came up to Cornish, for here, he was told, he would find "plenty of Lincoln-shaped men." "Aspet" was named for the village in the Pyrenees Valley where the sculptor's father was born. Here the creator of "Deacon Chapin" ("The Puritan"), "General Sherman," the Shaw Memorial, and the Adams Memorial in Washington, familiarly known as the "Statue of Grief," spent many years and did some of his most notable work. Around him grew up the famous Cornish colony of artists, writers, and musicians. His home is now a memorial (see, also, text, page 295).

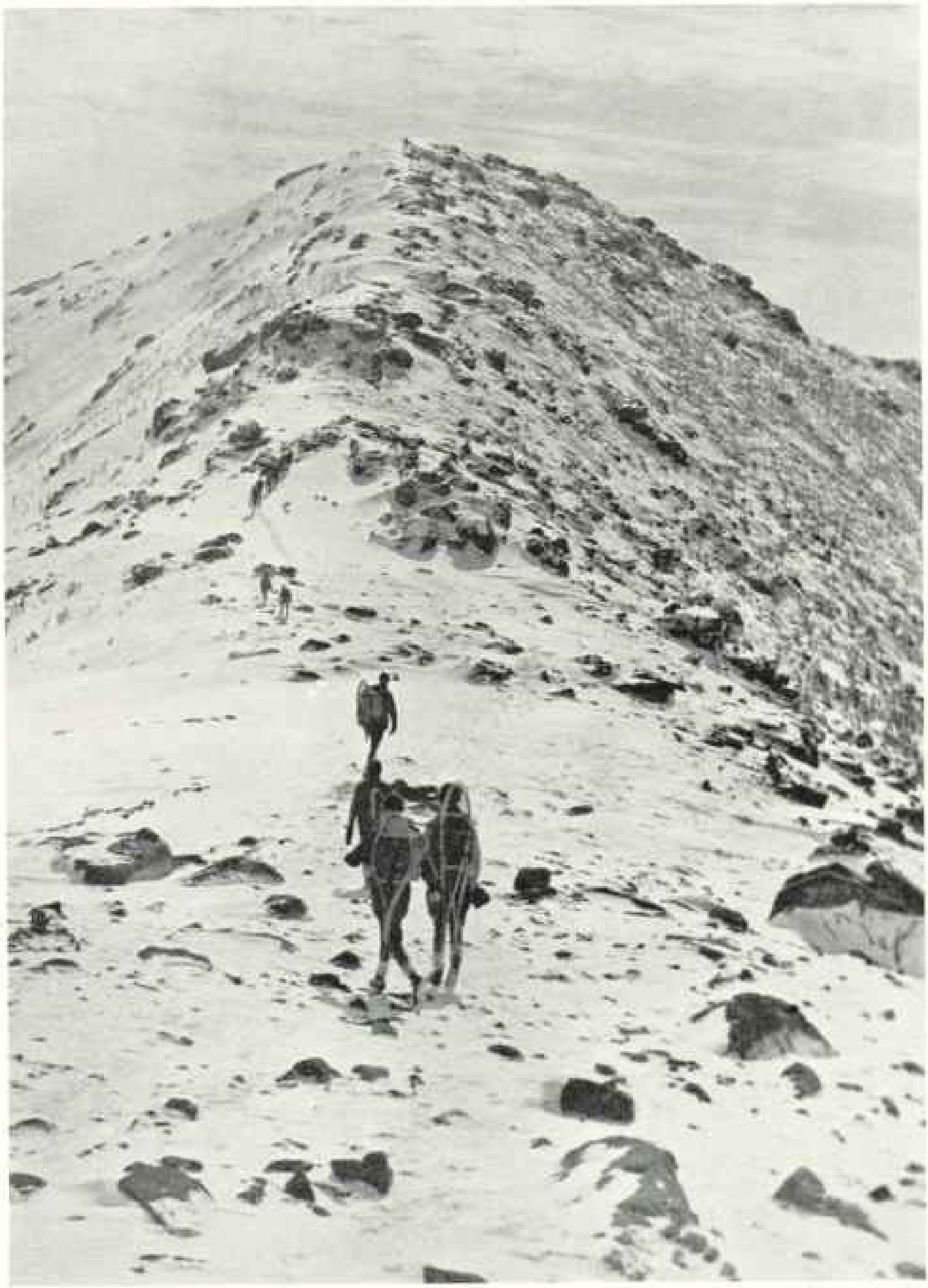
made provision by taxation for meeting-houses, ministers' houses, schoolhouses, and the salaries of schoolmasters. Endowed academies sprang up within the following century, the first being the Phillips Exeter Academy, which this year celebrated its sesquicentennial and which stands in the foremost rank of preparatory schools in the country (see page 279).

These institutions for the most part bore the mark of the standing order of Congregationalism. The Methodist School at Tilton, the Baptist School at New London, the Free Baptist School at New Hampton, and the Unitarian School at Andover still maintain more or less of their denominational affiliation.

The great church school of St. Paul's, which was the first of that strong and notable chain of church schools in the East, together with the school at Holderness, still adheres to its Episcopalian faith, while St. Anselm's College, established by the Benedictine Order, near Manchester, and several academies for girls attest the devotion of the Catholic Church to scholarship in a State where it numbers at least a third of the total population.

DARTMOUTH IS NO LONGER THE SMALL COLLEGE OF WEBSTER'S DAY

At the head of all of our educational institutions stands Dartmouth College, no longer "the small college" which Webster loved and defended and which has grown almost out of the recollection of some of us whose diplomas are of much later date than Webster's. Crowning the heavenly heights which spring upward from the Connecticut at Hanover, Dartmouth, with new buildings, an enlarged faculty, expanding endowments, and, it is good to add, the same old spirit, has come to rank with the great colleges of the country and is a source of constant pride to the State (see pages 280 and 282).



Photograph by Kenneth D. Smith

MOUNTAINEERING WHICH TESTS THE CLIMBER'S METTLE

Going over the Knife Edge from Lafayette to Lincoln. This ridge is dangerous on a windy day, and parties must be roped together. Mount Lafayette, named for the great Frenchman, towers 5,249 feet and is the highest peak in the Franconia Range; Mount Lincoln is 5,108 feet.

THE START OF AN OBSTACLE SKI RACE

Berlin, with its widely known winter carnivals, has done much to make winter popular in New Hampshire. Located in the heart of the White Mountains, only 16 miles from Mount Washington, it is as busy a city in winter as in summer. The object of each contestant in this race is to be the first to crawl, with skis on, through a barrel (see illustration below).

Photographs by Shotey Studio

"WE'VE MADE IT!"

Three contestants on skis, at the Berlin winter carnival, have succeeded in crawling through the headless barrels; two others are still struggling. Sharp turns and high walls constitute some of the other obstacles to be negotiated before the race is won. Climate and geography mold the sports of communities and of colleges as well as of nations (see text, page 271).

Photograph by Hastings Studio

TOBOGGANING IS A SPORT OF THRILLS—AND SOMETIMES SPILLS

New Hampshire winters are usually long and severe, but, instead of considering the months of cold and the deep snows as liabilities, the State has converted them into assets, with communities holding winter carnivals every year and more hotels offering facilities for winter sports.

At Durham, one of the first settlements and near the sea, is the University of New Hampshire, it, too, enjoying an era of remarkable expansion and prosperity. Existing for years at Hanover, beneath a stepmotherly relationship with Dartmouth, the university lived statically as one of the land-grant colleges.

In 1891, through a bequest from Benjamin Thompson, a rich and eccentric bachelor, who had made his will in 1856 and left it unchanged, the State came into possession of something like a half million dollars upon condition that a college of agriculture be established upon the Thompson farm at Durham. A few years ago the legislature imposed a mill tax, the first instance of the kind in the East, and the University now possesses an income in excess of a million dollars a year, and has become so popular that the trustees have been compelled to set a limit upon matriculations from without the State.

The slackening of denominational bonds upon the private schools of New Hampshire began soon after the passage of the Toleration Act, in 1819. Prior to that time the standing order had been dominant; the meetinghouses and the town halls were the same, and the Congregational Church, whose first minister in each community had received a glebe, was supported by general public taxation.

I digress long enough to remark that some of these glebe lands still continue. In my own city of Concord the farm of the first minister, though set down in what is now the middle of the town, retains its boundaries intact, and succeeding generations have dwelt beneath the solid roof erected by Parson Walker and have enjoyed the shade of the splendid elms which he, possessing, as all such men must, a sense of futurity, had planted.

The Toleration Act presents a fine example of what may be accomplished by one single-minded and earnestly purposeful person. The Rev. Dan Young, a Methodist preacher of the early nineteenth century, chafed under the burdens which the early charters imposed upon him and others who might be termed dissenters,

THE ANDROSCOGGIN RIVER IS A WATER HIGHWAY FOR LOGS

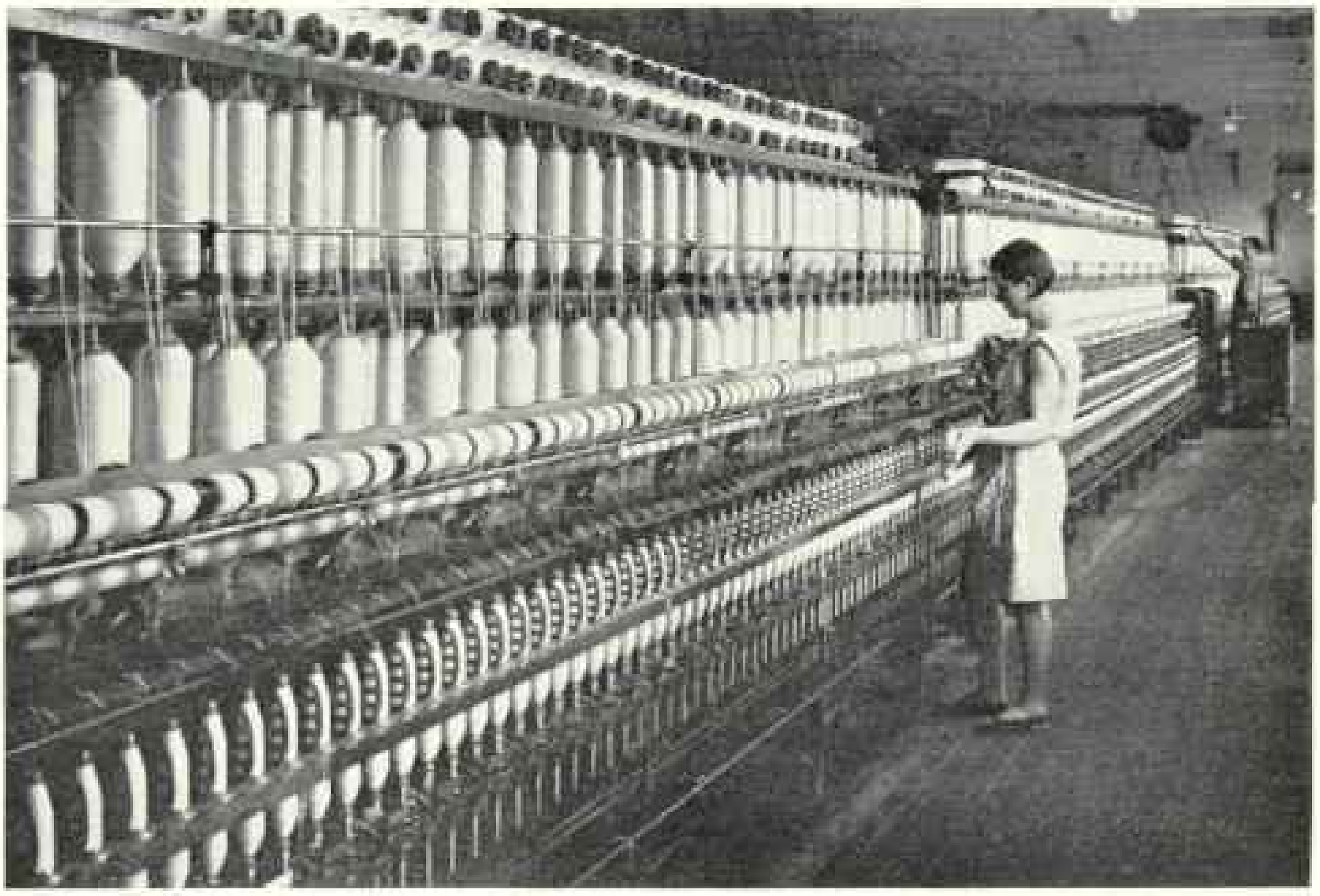
In the late spring the river is jammed with pulpwood held to be floated down to the paper mills as needed (see page 302).

MANCHESTER IS THE INDUSTRIAL CENTER OF NORTHERN NEW ENGLAND

New Hampshire's largest city began to manufacture cotton in 1805; to-day some of the largest cotton mills in the world are located here, on the Merrimack, whose waters probably turn more spindles than any other river (see page 259). In the foreground is the Queen City Bridge.

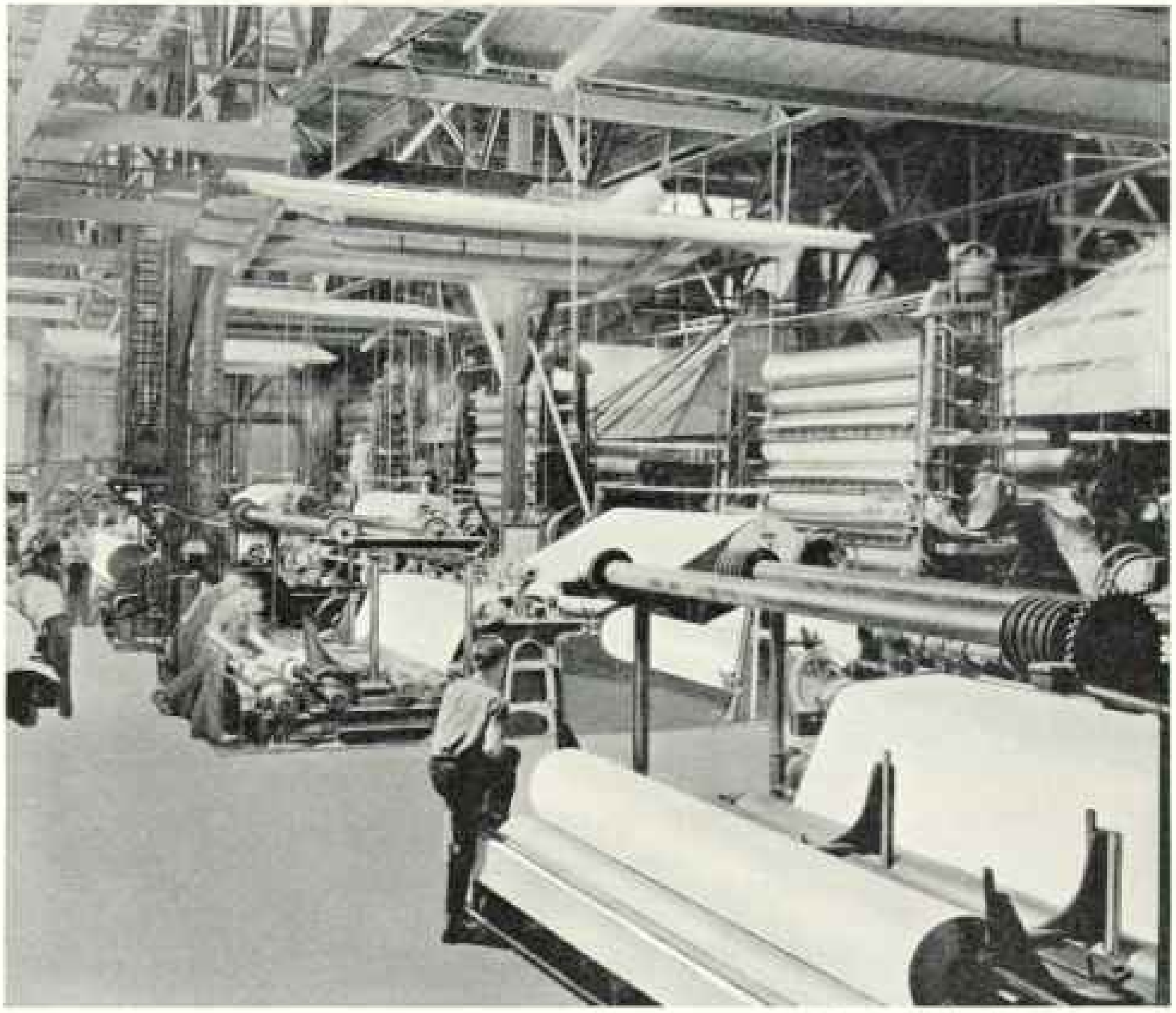
THE SPRAYING BOOTH IN A LAWN-MOWER FACTORY AT HINSDALE

The product, as well as trimmers and edgers, is popular throughout the United States and is exported in numbers to Australia, Cuba, and Denmark.



NEW HAMPSHIRE HAS MADE COTTON GOODS SINCE 1804

A spinning frame, with part of the 120,000 spindles, spinning warp yarn of cotton in one of the large textile mills at Nashua. This mill began operations 108 years ago and gets its power from the Nashua River, which joins the Merrimack here.



Photograph from Brown Company

THE MACHINE ROOM OF A LARGE PAPER MILL ON THE ANDROSCOGGIN

Spruce and pine are floated down the river to the mills (see illustration, page 300), where they are ground to pulp and made into paper.

and he sought the one remedy which has never failed to be effective in a republic—politics.

He caused himself to be elected to the legislature, and finally, while serving his second term in the State Senate, brought about the enactment of toleration in New Hampshire. This being accomplished, he promptly resigned his senatorial seat and returned to his pulpit; but he left to religious thought and action in New Hampshire a freedom which has not been disturbed.

Two families of that "peculiar people," the Shakers, followers of Ann Lee, found foothold in New Hampshire, one at Enfield and the other at Canterbury. Their sturdy stone buildings still stand, though the two families have now merged and the property at Enfield has passed into the hands of the Catholic Church and is now devoted to school purposes.

The family at Canterbury had the prudence, years ago, in the days of its greater prosperity, to make profitable investments in railroad and other securities and its income is swelled also by the development of their industries, such as weaving, basketry, and many small articles which are typically Shaker in their characteristics.

The monastic life of Shakerdom seems to have far less attraction now than it had eighty or a hundred years ago; but, thanks to the foresight of the early elders, the family at Canterbury can look upon its future with no qualms.

One of my old professors at Dartmouth College served for many years as State Geologist, and the results of his labors are to be found in three imposing volumes, and

NEW ENGLAND'S LARGEST ELM GROWS NEAR NORTH CONWAY

This sturdy giant, eight feet in diameter, delights the eye of tree lovers and visitors to Conway and North Conway, both charming resorts and excursion centers in the eastern White Mountain area (see, also, text, page 295).

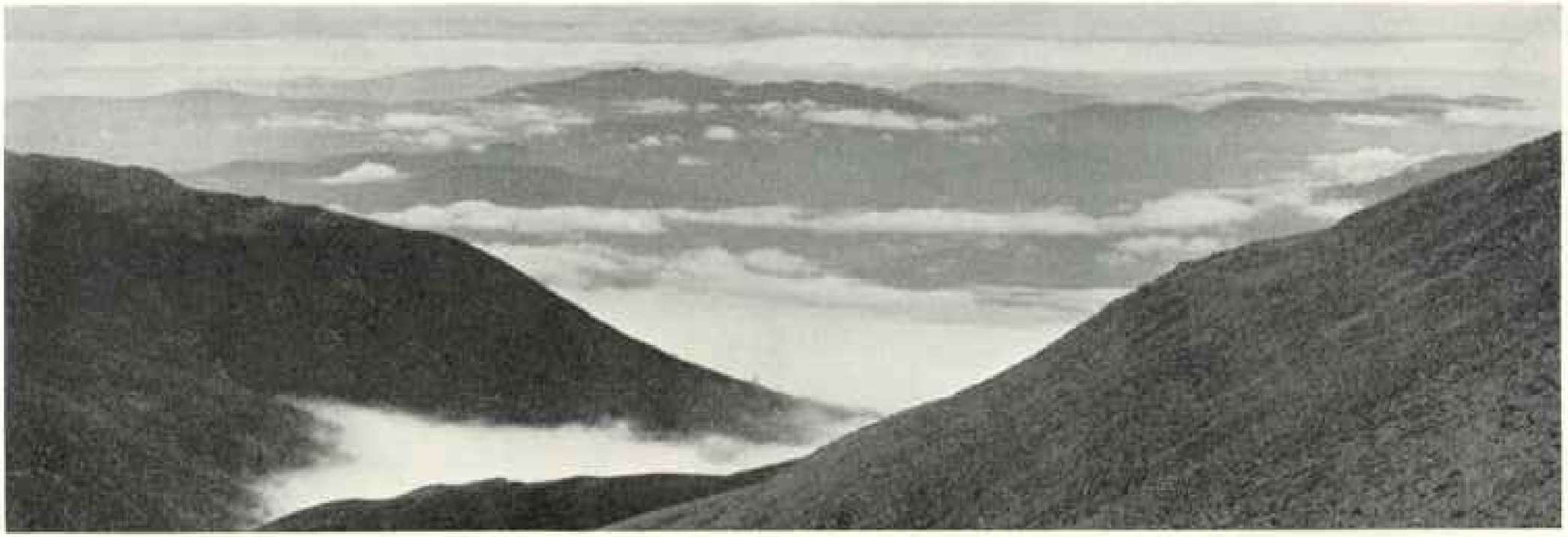
in the superb relief map of the State which so long adorned Doric Hall, in our Statehouse, and which was the first of such works to be produced in this country.

TWO MINERALS OF GREAT INDUSTRIAL IMPORTANCE

Many a visitor, looking upon this map and noting the rugged contours of the State, expressed surprise that no mineral deposits of value had been found here. They had in mind, of course, the precious metals, which do indeed exist, but in such small quantity and so strongly bound to their rugged matrix that, as Professor Hitchcock himself once said to me, "A man might travel all over New Hampshire in search of gold and silver, which he would find, but in no quantity sufficient to pay for his axle grease."

However, of less intrinsic value but of more industrial worth, New Hampshire has deposits of two minerals which are proving invaluable in the industrial development which is necessitated to us as we see our original basic industries dwindling. Mica and feldspar are found liberally in many sections of the State and are being worked profitably. The feldspar deposits in the Monadnock region are of great richness and purity, and I have eaten more than one state dinner which was served upon plates which traced their origin back to my own State.

New Hampshire is termed the Granite State, and time was when granite ranked among the chief of our products. To-day other States have pressed us hard for leadership in the building market; but we have never accepted the doctrine that we were

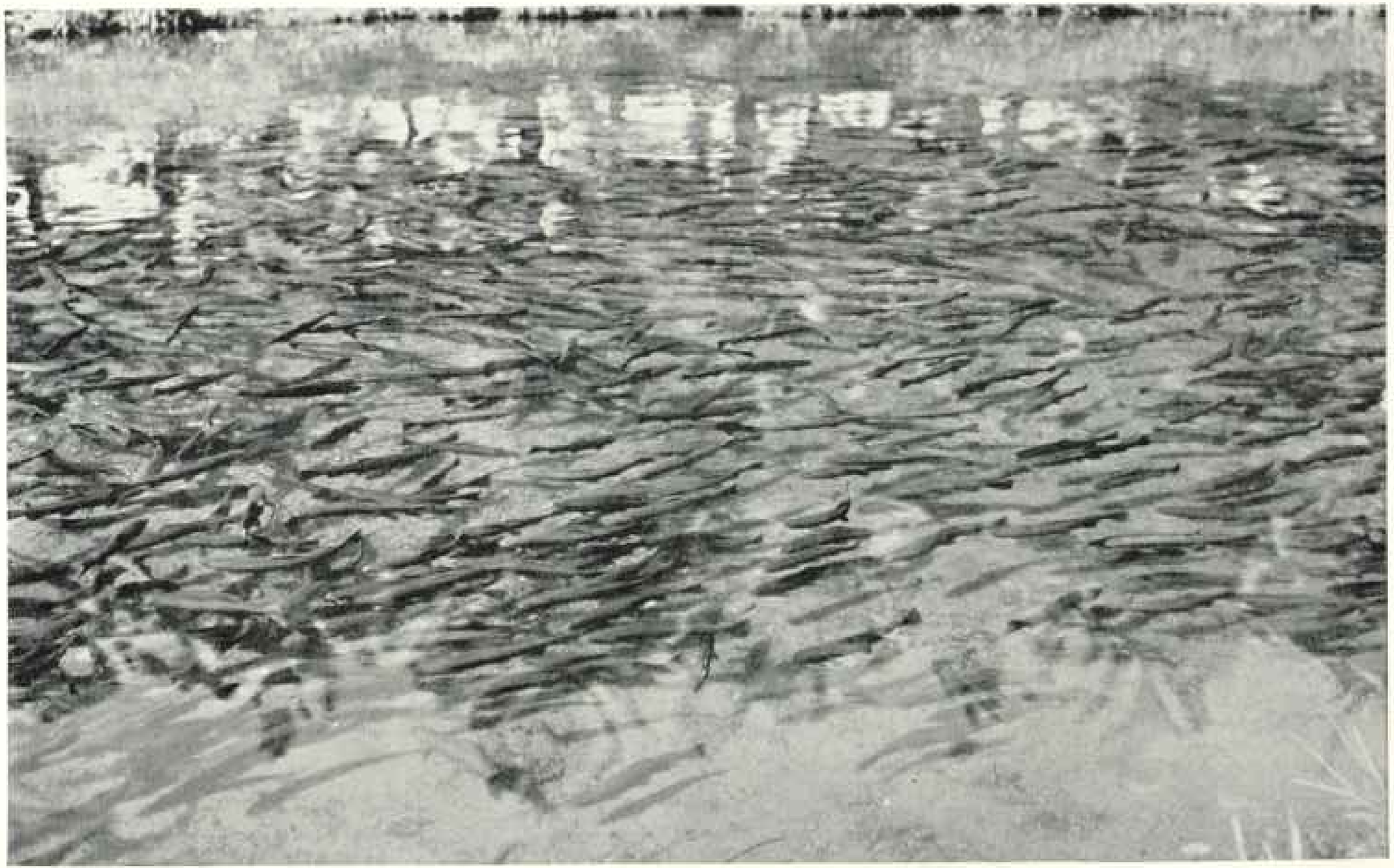


MOUNT WASHINGTON, THE CROWN OF NEW ENGLAND, THRUSTS ITS HEAD THROUGH THE CLOUDS

With 86 peaks in an area of 1,270 square miles, New Hampshire's White Mountains contain the highest elevations in the Northeastern States (see, also, text, page 271). Visitors to the summit of Mount Washington can travel either by the 8-mile motor toll road or by the famous cog railway.

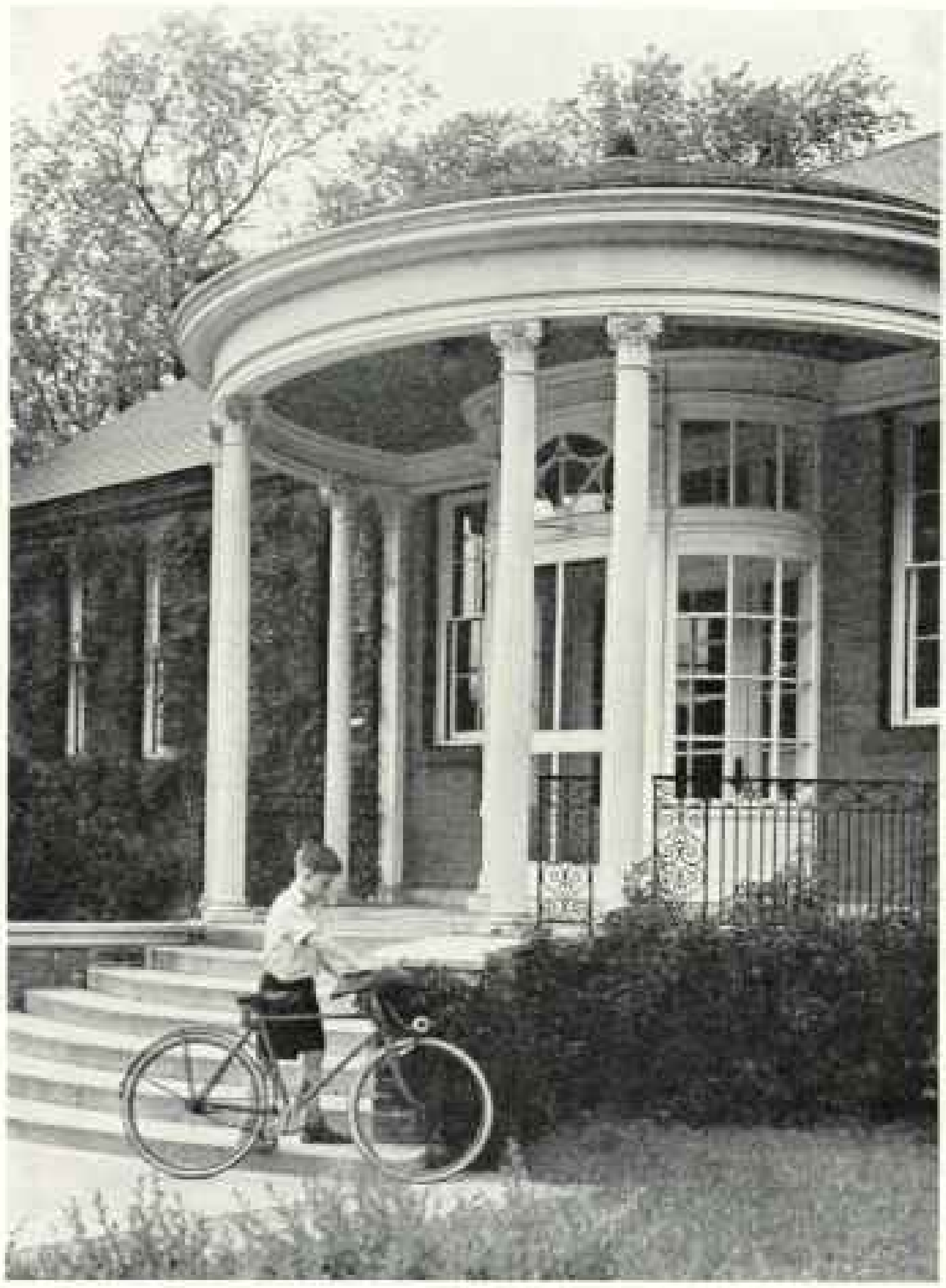
Photograph by Walter Layman

A SEASCAPE ON NEW HAMPSHIRE'S ROCK-BOUND COAST



PART OF 2,200 ADULT RAINBOW TROUT IN ONE POOL AT WARREN

The State operates five fish hatcheries and one rearing station, where brook, rainbow, and golden trout and salmon are raised. Eggs are procured from wild fish of the lakes, breeding fish kept in ponds at the hatcheries, or from eggs obtained from commercial hatcheries or in exchange with other States. The hatcheries have a capacity of 12,000,000 fish.



PETERBORO'S LIBRARY IS UNIQUE

The town claims the distinction of having established in 1833 the first tax-supported, free public library in the country (see, also, text, page 307). The building is modern and beautified by a colonial doorway. That New Hampshire's early aspirations for knowledge and culture have continued to the present day is shown by the fact that its libraries circulate more books per hundred of population than those in any other State of the Union.

not still first in quality, even if we cannot take leadership in quantity. The last of the great public buildings to have come from our quarries is the handsome Library of Congress, though many a business structure in some of the largest cities is of New Hampshire stone.

We do not permit ourselves to forget up here in New Hampshire that the Dartmouth College Case furnished the leading authority for the development of corporate life in the United States. Not only did that masterful decision of John Marshall afford a guaranty for all endowments upon which the great charitable and educational institutions of the country have been built, but it also provided guaranties for those men of enterprise and initiative who have formed the great industrial corporations which have made the United States the leader in mass production.

FLASHES OF NEW HAMPSHIRE HISTORY

New Hampshire, however, took a lesson from the Dartmouth College Case, and since then no charter has been granted by our legislature which did not contain a provision that it might be altered, revised, or repealed.

We live much in the past up here, and necessarily so. Some of our attachments are sentimental; some are practical. But, as indicating the degree to which we cling to those episodes and contacts which loom so large in our panorama of history, it is probable that it is our nomenclature, particularly of the lakes and streams, which most closely connects us with bygone days. Sunapee, Pemigewasset, Pasquaney, Cocheco, Piscataqua, Winnepesaukee, Waukewan, Asquam, Opeechee—these are the names which recall to us the time when "here there lived and loved another race of people," to employ the language which we used to declaim on Friday afternoons at the district school.

We claim primacy in many things. We know that in 1776 our Colonial Assembly adopted the first written constitution to be enjoyed by any of the States. We know that, two years before this, it was on New

QUARRYING NEAR MILFORD THE GRANITE THAT GAVE THE STATE ITS NICKNAME

Hampshire soil that the first armed blow was struck at British domination, when a band of patriots, led by John Sullivan and John Langdon, overpowered the small garrison at Fort William and Mary, in Portsmouth harbor, and took away the stores of powder. These were hidden beneath the pulpit in the Old Meetinghouse at Durham and were later taken to Bunker Hill, where another New Hampshire patriot, John Stark, used the ammunition in the engagement which first showed the quality of the New England rebels.

Apropos of Stark at Bunker Hill, there is a story that two British officers were watching the debarkation of their troops and were looking toward the crest of the hill where the colonists had gathered. "Will they fight?" said one to the other. And his companion, who had served with Stark during the Indian Wars, replied, "If one John Stark is there, they'll fight." The annual celebration of Bunker Hill Day in Boston is in consequence something of an irritation to the New Hampshire mind, because we cannot fail to recall that it was our State which furnished most of the men, and that it was the strategy of our John Stark which gave the Colonials their success.

It is somewhat surprising to note that this same John Sullivan who led the midnight marauders at Fort William and Mary should have proved so cautious as a member of the Continental Congress which formulated the Declaration of Independence. But when the die was cast, none was more courageous than he, and his march against the Six Nations is celebrated, even to this day, in the New York sector where he dispersed the Indian hirelings who were harassing Washington's army.

Among the other firsts, and one which gives us much satisfaction, is the fact that at Peterboro was established the first free public library supported wholly by public taxation. This library is now housed in a handsome building, the gift of a successful

Photograph by Alma Hall Blackington

A VACATION CAMP IN THE LAND OF THE LAKES

The arrival of the mailboat, *Uncle Sam*, at one of the oldest and largest camps for boys on Lake Winnepesaukee. New Hampshire has some 600 lakes and ponds.

son of the town (see page 306); and in many another community may be seen similar proofs of affection for the Old State and the old home town.

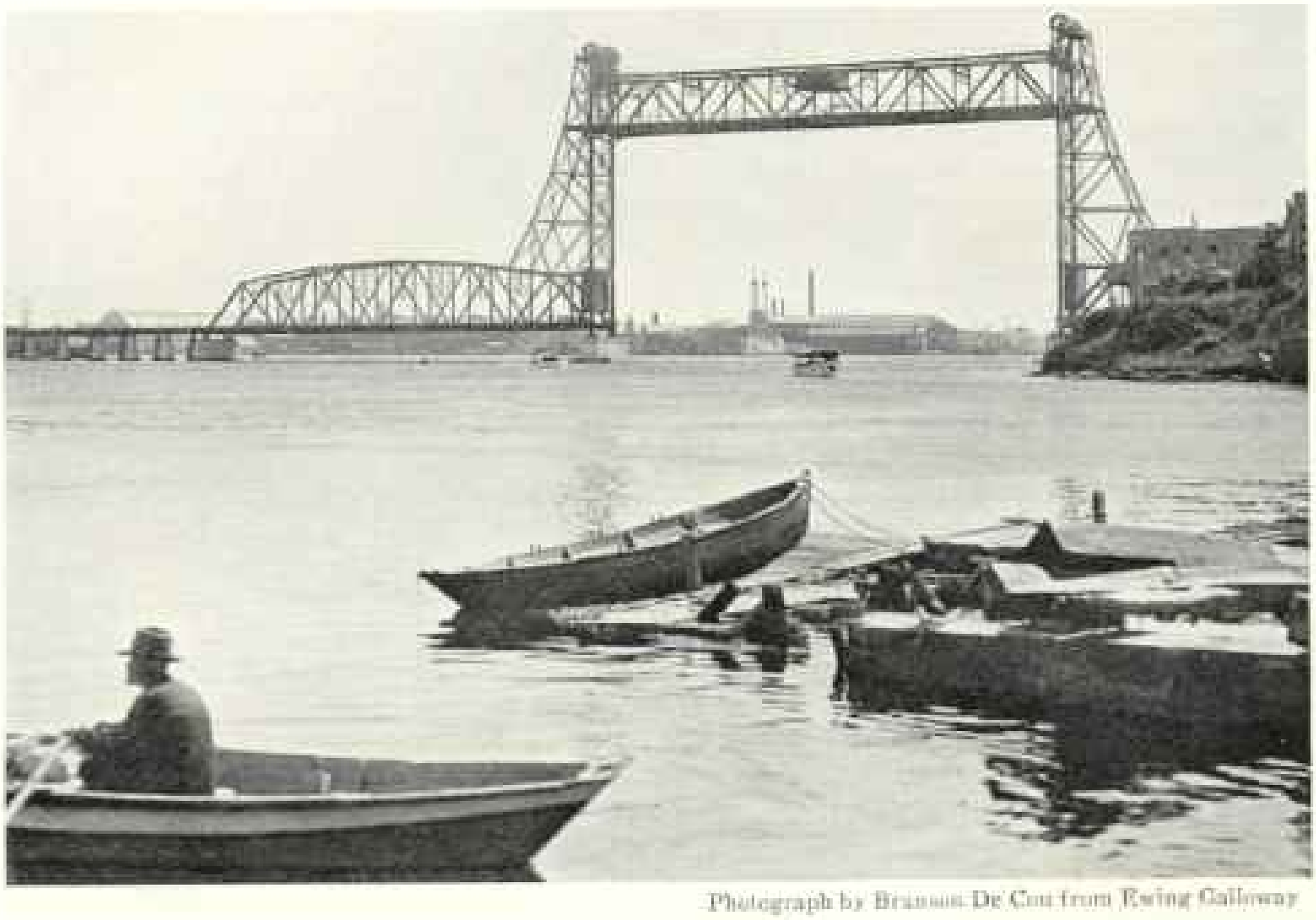
A NURSERY FOR SEAMEN

For two centuries New Hampshire was a nursery of seamen, and from colonial times our seaboard resounded to the stroke of the calker's mallet. From Portsmouth set forth the expedition to Louisburg with New Hampshire men carried in New Hampshire bottoms, and it was at Portsmouth, too, that John Paul Jones fitted out the *Ranger* and sailed with her, flying the Stars and Stripes to which the first official salute was paid by a foreign nation.

The Navy Yard at Portsmouth dates back to the Revolutionary period. The house in which John Paul Jones lived while superintending the building of his *Ranger* is still standing and is the home of the Portsmouth Historical Society (see page 278). Another of the handsome old properties of those days, the Moffatt-Ladd house, is now the home of the Colonial Dames, who, upon occasion, renew the traditions of the house for gracious hospitality.

During the days of wooden ships, while we were dependent for our defense, as was ancient Athens, upon "wooden walls," the Portsmouth Navy Yard was a busy place. The *Constitution*, "Old Ironsides," was rebuilt there; and now, rebuilt again, she has just paid a visit to her foster-mother in New Hampshire. During the World War, Portsmouth again hummed with industry, and the yard has now become the country's principal base for the construction of submarines, one of the two largest of the craft having slid from Portsmouth ways.

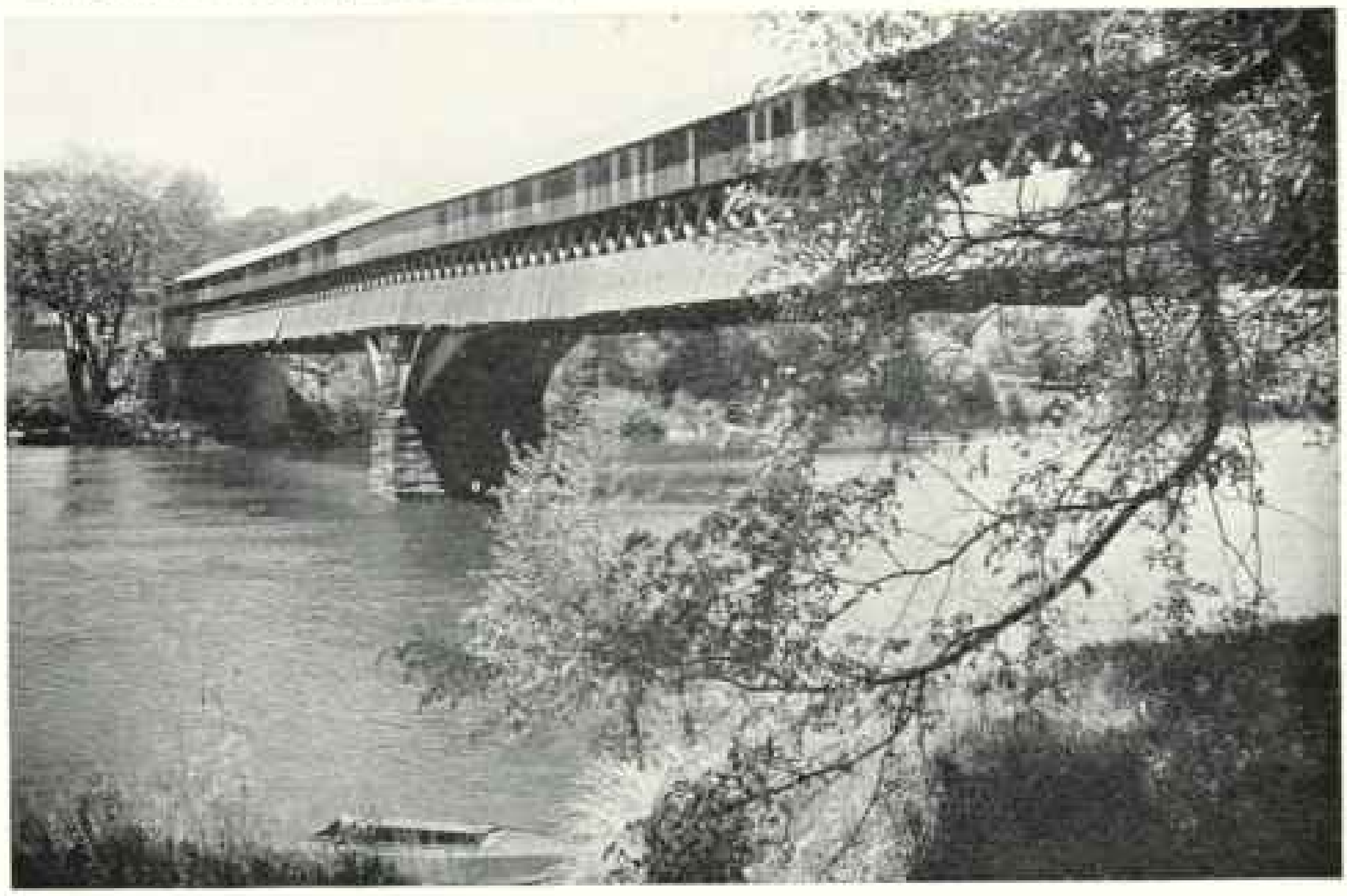
During the World War, also, there sprang up on the banks of the Piscataqua, just above Portsmouth, two shipyards, one for wooden and the other for steel vessels. These craft of Portsmouth origin did their full share in the winning of the war, and the yards are now turned to the uses of peace, one as a dye plant and the other for



Photograph by Brannon De Cou from Ewing Galloway

PORTSMOUTH IS NEW HAMPSHIRE'S ONLY SEAPORT

The two-million-dollar memorial bridge over the Piscataqua connects the city with Kittery, Maine, in the background. The bridge has an interesting elevator draw. The Portsmouth Navy Yard is the principal one in the United States for the building and repairing of submarines.



A BRIDGE NAMED FOR A RESTLESS SON OF DARTMOUTH

Near here, in 1772, a freshman, John Ledyard, tiring of college discipline, set off in a dugout with some dried venison, an Ovid, and a Greek Testament to see the world. He joined up with Capt. James Cook for the third voyage and published the only eyewitness account of the great navigator's death. This timber lattice bridge spans the Connecticut between Norwich, Vermont, and Hanover, New Hampshire, and dates from 1859.

the manufacture of gypsum products, the raw material being brought from Nova Scotia.

At Portsmouth, too, was built the *Kearsarge*, with oaken timbers taken from the slopes of the mountain whose name she bore. She laid her bones upon a Caribbean reef, but New Hampshire does not forget that her record is written—Portsmouth, Cherbourg, Roncador.

So important indeed was the shipbuilding industry in New Hampshire that our State seal bore, and still bears, the representation of a ship upon the stocks, though its heraldry has recently been revised; and, while the ship still remains upon our escutcheon, the barrel of rum which stood so prominently in the foreground has been erased in deference, I suppose, to the Eighteenth Amendment.

The Embargo Act laid a heavy hand upon our shipping, but coincident with it came the beginning of that development of our water powers which has created the industrial cities of which we continue to be proud.

Thus New Hampshire stands forth today the little State with the big history. Our population is almost stationary, succeeding censuses giving us little beyond the natural increase. Our taxable inventory, though jacked high by the ingenious devices of modern taxing boards, is probably excelled by several private fortunes in the United States; but still we manage to have most of the things which modern life insists to be necessary.

Our automobile registrations, for instance, are in such number that it is possible to take the entire population of the State for a Sunday afternoon ride. To accommodate them we have developed a series of trunk highways, three in number, which traverse the State from the Massachusetts border to the Canadian line, piercing the White Mountains and following the course of our greatest rivers. To these we are now adding cross-State roads, which in a few years will gridiron New Hampshire with modern highways.

And it is worth noting at this point that most of these highways and practically all of our railroad lines follow essentially the paths made by the Indians, as they went to and fro between their forest fastnesses and the seacoast.

Our State institutions provide for all the needs of our dependent, delinquent, and defectives, and for our enterprising youth the University of New Hampshire presents expanding courses for the training of young men and women who, unfortunately, in too great numbers, do not remain with us to enable us to enjoy the fruits of our bounty to them.

Our public schools are now so arranged, so equipped, and so supported through State aid that no child need lack full thirty-six weeks of schooling each year, with free bus transportation and in some instances with a free lunch thrown in.

Our agriculture in particular is a subject for pride. Our farmers are hardworking and thrifty, and many of them upon their stony acres can realize the truth of the old jest, that even sheep in New Hampshire had to be provided with steel muzzles to enable them to graze, and that most of the crops of the State had to be planted with a shotgun. New Hampshire agriculture has specialized of late, particularly in the dairying and truck line; but, even at its best, it cannot yield the rich rewards which farmers have secured in other States.

In common with the entire agricultural brotherhood of the country, New Hampshire farmers have suffered from changed conditions and from existing depression. But they are still self-respecting and self-supporting. As a matter of fact, in the volume of per capita Federal taxes paid, New Hampshire farmers will be found contributing mightily to the proclaimed necessities of their more querulous brethren in other sections.

But I suppose that our chief product will continue to be men, in token of which, as Webster said, "The Almighty has hung out a sign high up in our hills," where the Old Man of the Mountain, with the storms of ages beating upon his rugged brow, broods ceaselessly over the moving scene which is unfolded before him (see illustration, page 261).

These men we have contributed without number to our sister commonwealths; and wherever there have been brave deeds to be done, wise public policies to be formulated, generous philanthropy to be administered, mighty doctrines to be declared, or indeed any demands upon the skill, genius, learning, or courage of mankind, there the sons of New Hampshire have had, still have, and will continue to have their full share in the advancement of human destiny.

THE ENTRANCE TO A FINE ESTATE ON OCEAN DRIVE

The porches of a home near old Fort Adams, Newport, Rhode Island, provide grandstand views of the racing yachts in Narragansett Bay.

 Natural Color Photograph by Clifton Adams

THE FRAGRANCE OF MYRIAD BLOSSOMS PERMEATES VENERABLE HOPKINTON

The modern appetite for antiques has turned many a New England cottage into a distributing center for the old domestic treasures of the neighborhood. This Rhode Island community was incorporated in 1757.

Natural Color Photograph by Clifton Adams

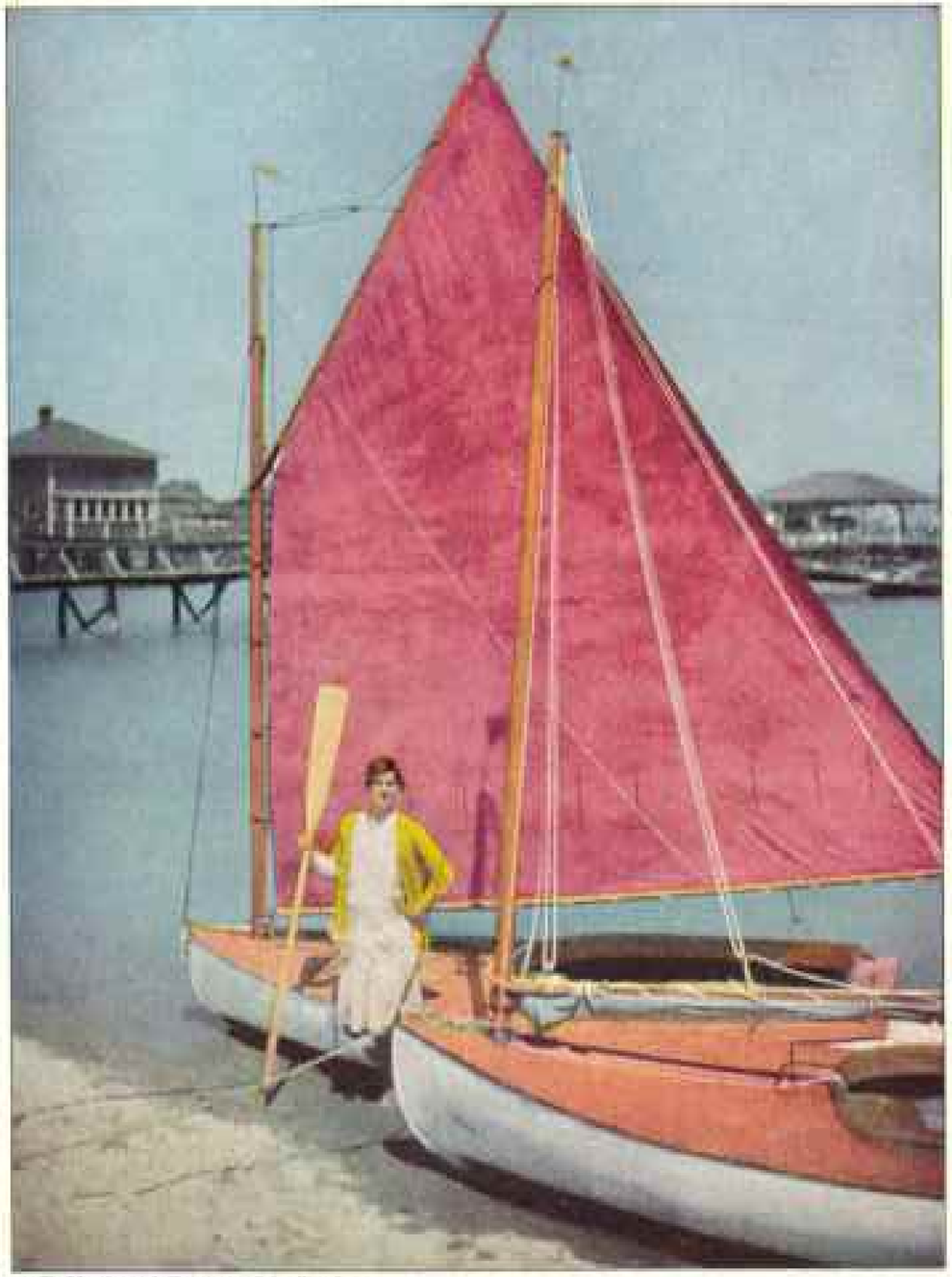
VISITORS TO PROVIDENCE GET AN EARLY VIEW OF THE MAJESTIC STATE CAPITOL

The handsome structure of white marble tops an eminence not far from the Union Station (foreground). Its dome, rising to a height of 235 feet, has few equals in the grace of its proportions. Providence, with a population of more than a quarter of a million, is the second city of New England.

Natural Color Photograph by Clifton Adams

NEWPORT ONCE CONTENDED WITH NEW YORK AND BOSTON FOR THE SEA TRADE OF THE COLONIES

Ships built in its harbor sailed the seven seas, carrying to far ports the products of New England factories. An amusement park and bathing casino now occupy part of the beach.



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STANDING BY FOR A RACE ON THE SOUND

Nantucket's younger yachting enthusiasts delight in catboat racing, and the gay sails make an attractive picture against blue backgrounds of sea and sky.

Natural Color Photographs by Clifton Adams

"PHILIP McCANN" HELPS KEEP NEWPORT ISLAND NEAT

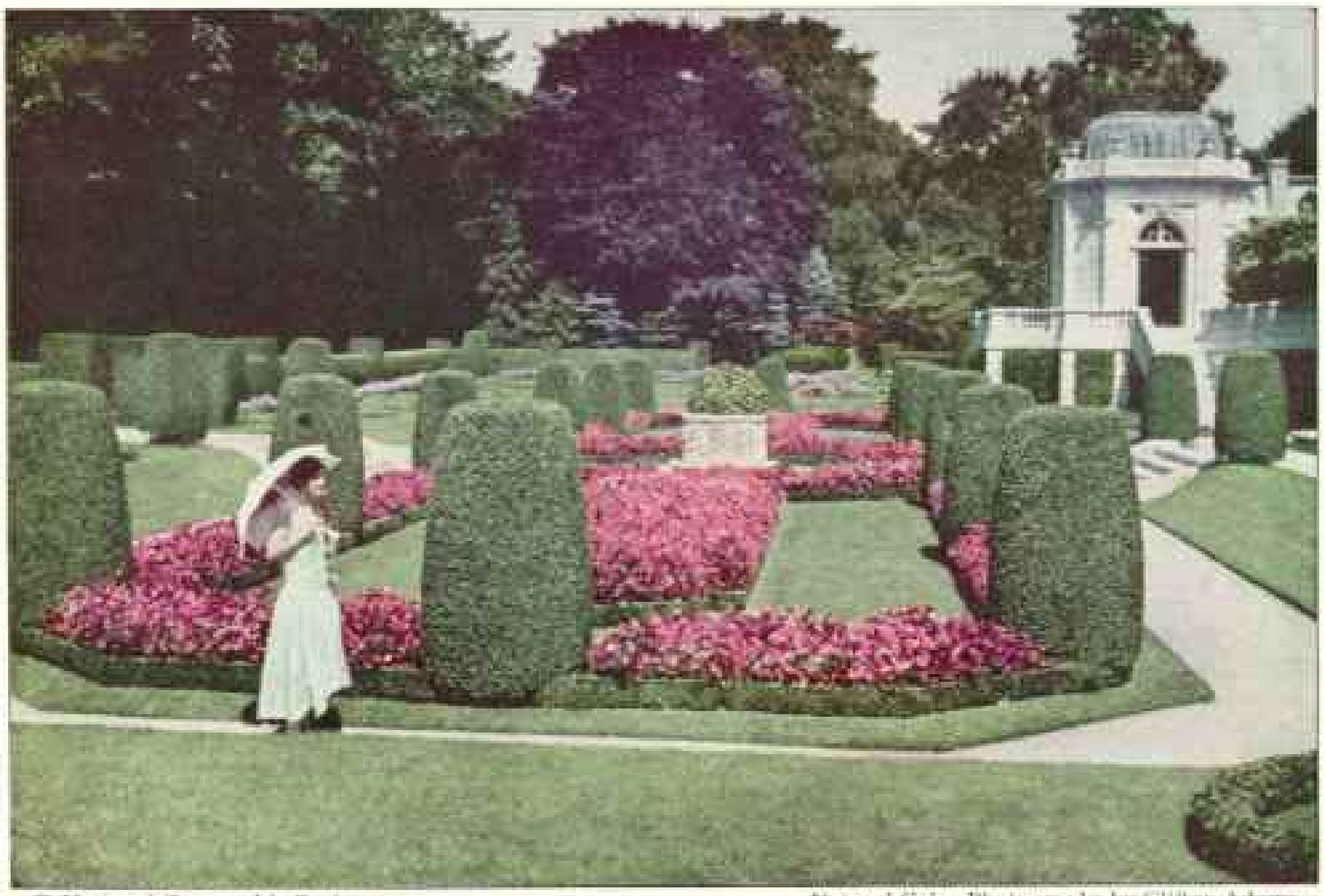
The ingenious and good-natured appeal for order and neatness from this silent policeman draws a ready response from visitor and resident alike.

MEAL FOR MANY A JOHNNYCAKE HAS BEEN GROUND BY NANTUCKET'S TWO-CENTURIES-OLD CORN MILL

Natural Color Photographs by Clifton Adams

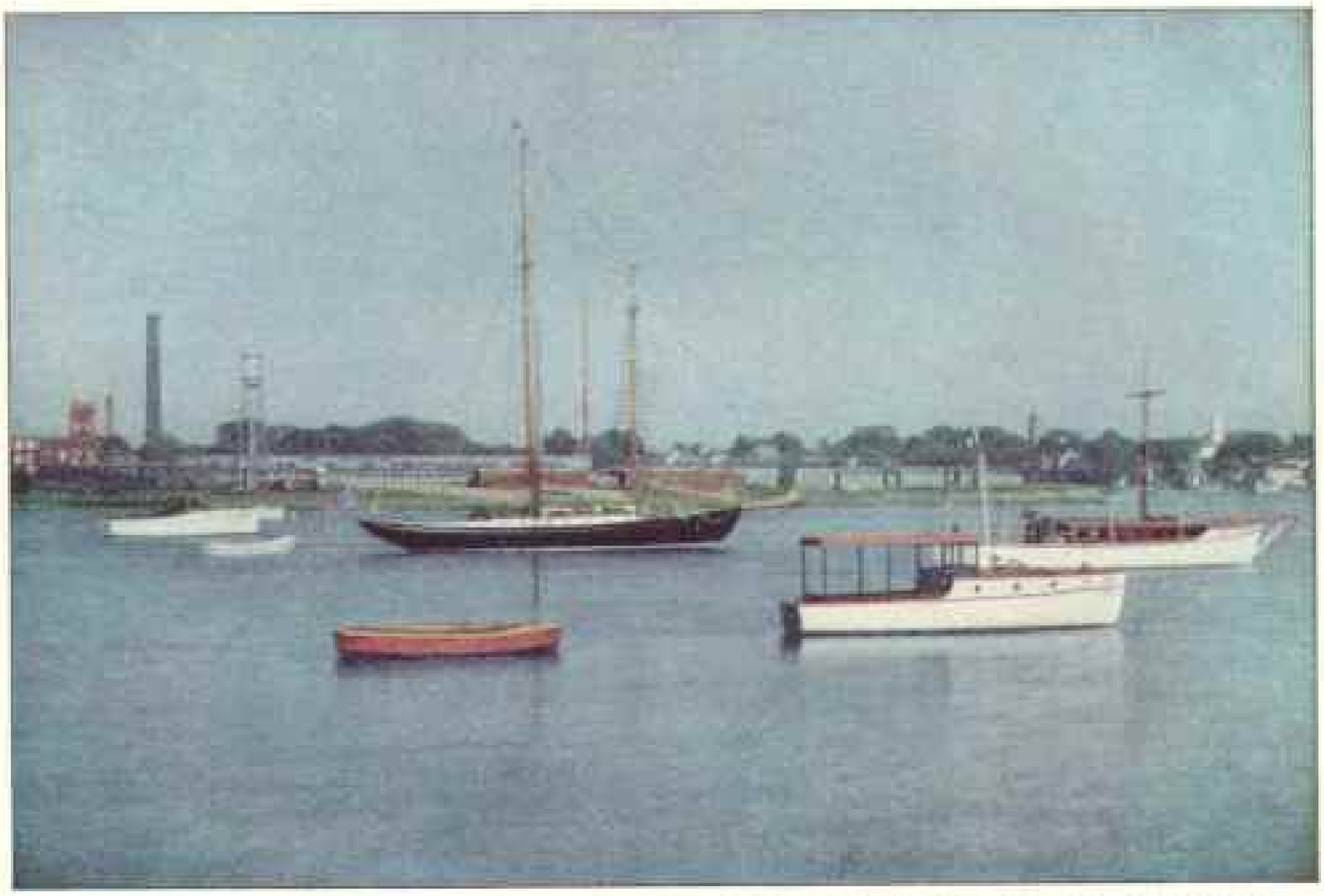
DELICIOUS WILD STRAWBERRIES REWARD GLEANERS IN A VERMONT HAYFIELD

A GRASS-CARPETED WALK IN ONE OF NEWPORT'S PEERLESS GARDENS



 Natural Color Photographs by Clifton Adams

MAGNIFICENT ESTATES MAKE NEWPORT A SUMMER "SOCIAL CAPITAL"



MOTOR AND SAILING CRAFT FIND SAFE ANCHORAGE IN WEST BARRINGTON HARBOR

 Natural Color Photographs by Clifton Adams

ACQUIRING SUN TAN ON BAILEY'S BEACH, NEWPORT

A SEA-STREWN BEACH NEAR PROVINCETOWN, MASSACHUSETTS

The flotsam and jetsam of the broad Atlantic, from shells and starfish to battered hulls, lend interest to the sands. Not far from here the *Mayflower* first found anchorage in the New World.

 Natural Color Photographs by Clifton Adams

HOOKED RUGS AND SHIP MODELS VIE WITH ANTIQUES FOR VISITORS' ATTENTION

In Provincetown, as in many other communities of New England and eastern Canada, the making of hooked rugs is an important home industry.

A WORLD INSIDE A MOUNTAIN

Aniakchak, the New Volcanic Wonderland of the Alaska Peninsula, Is Explored

By Bernard R. Hubbard, S. J.

Head of the Department of Geology, University of Santa Clara, California

With Illustrations from Photographs by the Author

HUGE Alaskan brown bears walking around the edge of a lake, watching their chance to flick out an unwary salmon; ambling through grassy, flower-strewn meadows where grouse and ptarmigan rise in alarm and squirrels and foxes scurry to cover; then making their way across contorted lava flows and cinder cones to dig into the soft, warm mud near active fumaroles or drink from bubbling mineral springs—and all this in the natural sanctuary of a volcanic crater. The picture almost transcends imagination.

But in Alaska nothing in scenic values is too amazing, too unexpected, for possibility. We had thought ourselves sated with years of Alaskan exploration; yet Aniakchak Volcano revealed to us new wonders. Not only is it as awesome as mighty Katmai, which we visited in 1929, but it encircles with its 3,000-foot walls a variety of scenic features and an abounding bird, animal, fish, and plant life that make it a world in itself—a world inside a mountain.

ANIAKCHAK CRATER WAS DISCOVERED ON A MAP

Though the largest river flowing into the Pacific Ocean from the Alaska Peninsula rises within the Aniakchak Crater, it was not until 1922 that the volcano was discovered.

The discovery came about in an unusual way. While marking off the sighted peaks of what appeared to be a curving range of mountains, Mr. R. H. Sargent, of the United States Geological Survey, found a circle of points on his chart.

"What's this?" he exclaimed, as the significance dawned upon him. "This can't be a crater; it's too immense!"

But crater it was, and he had discovered it not in the field but on the computing table!

Sid Old, guide of Kodiak, and Walter R. Smith, geologist of the Survey party, undertook to investigate the find, and, after entering the crater, returned with the news that a rim 21 miles in circumference inclosed countless interesting features.

With Mr. Sargent's map and Mr. Smith's field notes, the author, in company with Prof. Roderick A. Chisholm and three strapping University of Santa Clara students—James Barron, Charles Bartlett, and Kenneth Chisholm—left San Francisco on May 16, 1930, determined on a thorough exploration of the region.

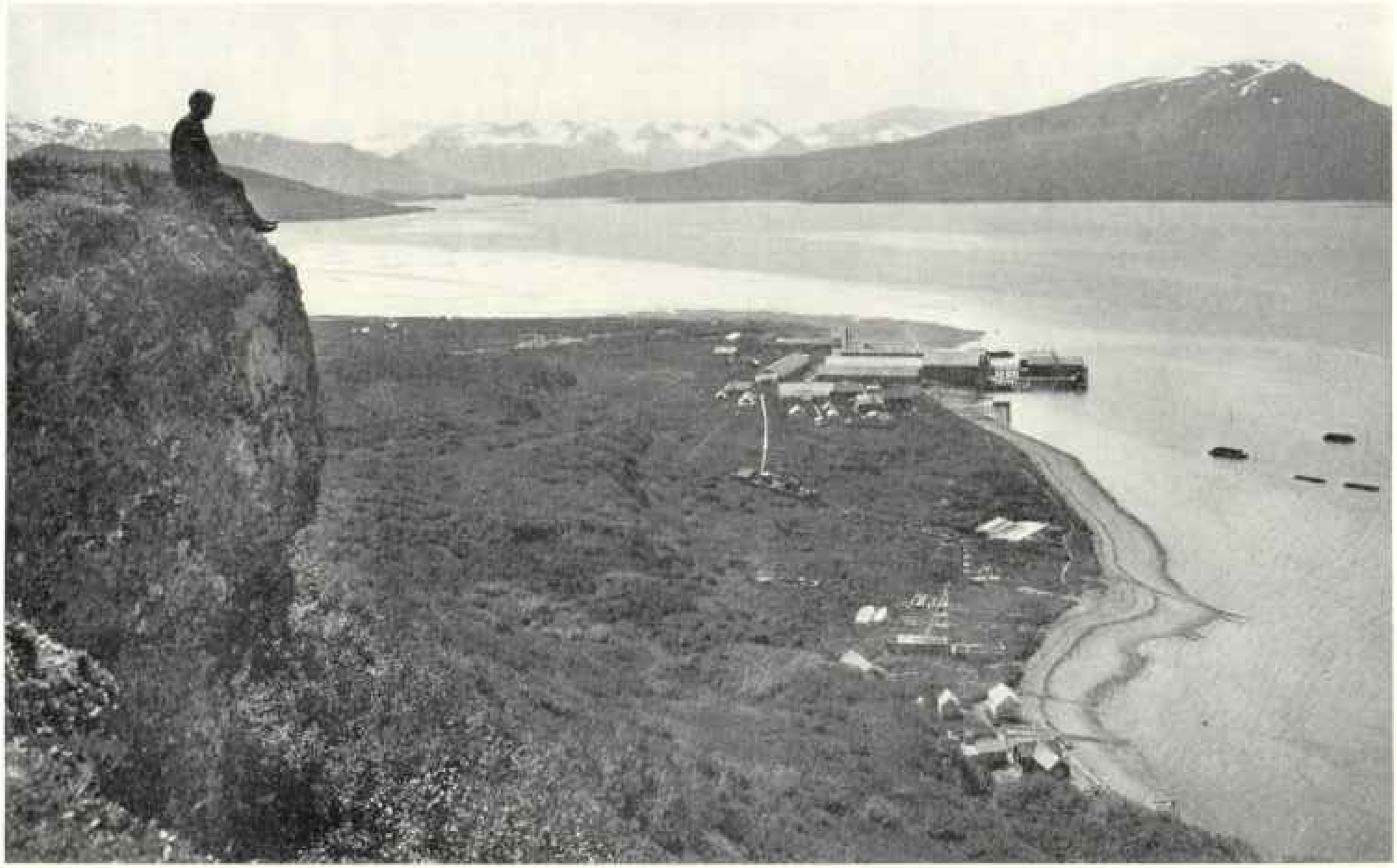
Courtesies of transportation were extended by the Alaska Packers' Association, and on the steamship *Chirikof* the six-day trip on the Pacific to Kodiak Island was made in good weather conditions and without unusual incident.

The first excitement came near Uyak Bay, on Kodiak Island. The day was unusually clear, and Martin, Mageik, and Kukak volcanoes were sending graceful columns of smoke high into the air, the ship's sextant giving the height of Martin's plume as close to 20,000 feet. Katmai's rim, blasting the skyline, excited greatest interest, however. In an otherwise clear sky, a cloud hovering above and within this giant's huge, exploded maw was so similar to the volcanic smokes near by that many on the boat thought Katmai to be erupting.

THE NEW WONDERLAND IS NOT HARD TO REACH

We could not conceive this as possible, because less than a year previous we had climbed to its rim and, descending inside, found a cold lake filling its bottom. The solution of the problem was not long in coming. A change in temperature and barometric pressure toward evening allowed the cloud in question to rise, disengage itself from the jagged rim, and float gracefully away, leaving Katmai chiseled clear against the glowing western horizon.

From Uyak Bay to Chignik, on the Alaska Peninsula, is only a 12-hour run.

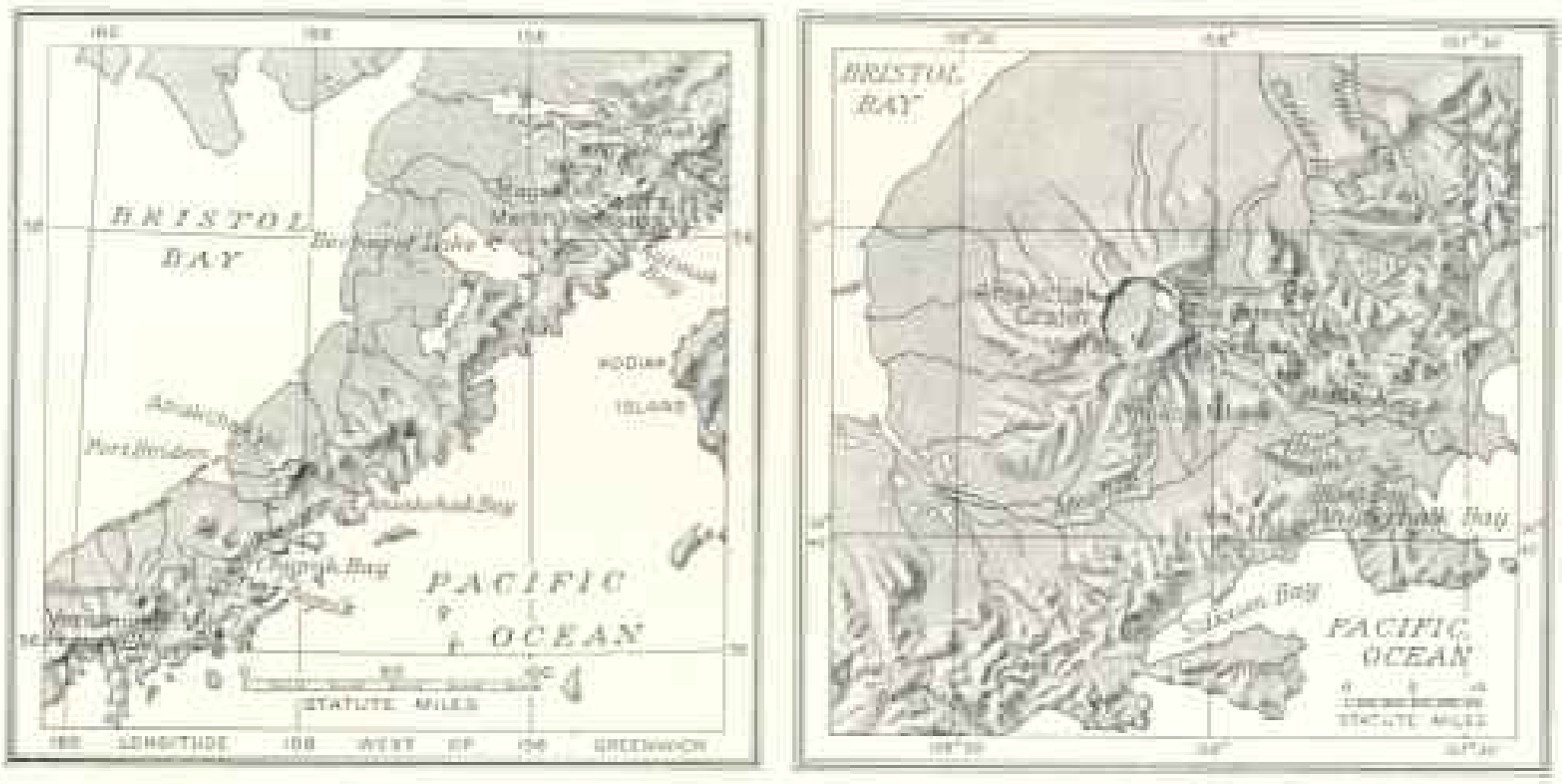


CHIGNIK THRIVES ON THE SPOIL OF THE OCEAN

One of the three salmon canneries operated on the bay is built on this spit of land thrust out toward Veniaminof (see, also, text, page 322).

WINTER HAS LEFT ITS MONUMENTS NEAR CHIGNIK

Along the lagoon and river stand rock columns cut by tide-borne ice. Veniaminof's snowy peak can be seen on the skyline at the extreme right.



Drawn by A. H. Bumstead

ANIAKCHAK LIES TO THE SOUTHWEST OF THE KATMAI VOLCANIC REGION, ON THE ALASKA PENINSULA

The sketch to the right shows in greater detail the mountains, lakes and streams in the vicinity of the great Aniakchak Crater, the floor of which covers 30 square miles (see text, page 329).

Chignik, which consists of three canneries, a native village, and a post office, has a crescent harbor surrounded by towering mountains—one of the most sheltered on the peninsula. A salmon trap at the end of Aniakchak Bay necessitates the trip of a cannery tender every few days, and the operating canneries can always be relied upon for transportation. Six hours suffice for the passage through scenic cliffs and islands (see page 320).

At the lower end of Aniakchak Bay is a sheltered harbor called Hook Bay (not to be confounded with a bay of the same name north of Chignik Bay), formed by opposing sand spits having a deep channel between them. This is the ideal entrance for explorers employing horses and a pack train. Since our party intended making the trip to the great crater as far as possible by boat up the Aniakchak River, and then packing in, we left the cannery tender at the mouth of the river, near some native huts, or *barabaras* (see pages 324, 338).

Our equipment was simple, but sufficient. It consisted of a 16-foot boat and outboard motor; regulation Alaska foodstuffs—bacon, beans, rice, coffee, and pancake flour, with powdered milk, sugar, and a few dehydrated fruits and vegetables thrown in as luxuries; a light silk tent; guns and ammunition, and photographic supplies.

Stowing everything carefully away in the boat, two of the party worried the craft along the bars of volcanic ash that choke the lower stretches of the river, dragged it across the shallows, and finally got it to a point where all could get aboard and where deep water allowed the engine to do the work.

To its lower tidal stretches the Aniakchak River emerges from its main valley through a gap locally known as Cape Horn, formed by two converging ridges. This valley is about four miles wide and 10 miles long and, though 20 miles from the Aniakchak Crater, which appears as a long, snowcapped ridge on the skyline, gives an inkling as to the nature of the country and the proximity of an exploded volcano.

Ashes fill the valley floor, above which a few buried hills appear as outliers, and the river curves in wide meanders. Bluffs, sometimes 100 feet high, form the concave sides of the meanders, which are so curved that often a few hundred yards of neck separate a mile of river. Oxbow lakes and cut-offs and oxbow swamps abound.

HALFWAY TO THE CRATER THE FOOT TREK BEGINS

Two days of river going brought us to the junction of the Aniakchak River and Albert Johnson Creek, halfway to the crater. There the trek began on foot. Though

we disliked carrying our 100-pound packs, every one made the best of it. Difficulties were expected; but, strange to say, the Aniakchak region is surprisingly free from the impediments to travel so common to the rest of the Alaska Peninsula. Instead of sinking into the tundra, we found firm footing on moss growing on a foundation of volcanic ash. Alders grew in clumps, and swamping was never necessary in picking a route through them. No long hours were spent in fording quicksand streams of icy water, for no streams of any size were encountered on the way to the crater.

Even the weather was extraordinary. Though a fellow scientist, Dr. Robert F. Griggs, leader of numerous National Geographic Society expeditions to the Katmai region,* was handicapped by almost constant rain in the Katmai National Monument, we had only three days of storm and rain in the month spent on the Aniakchak trip.

Both in 1922 and 1925 the Geological Survey parties under Mr. R. H. Sargent reported the Aniakchak region comparatively free from rain. The few people living therabout make the same comment. From several points on the crater's rim we noted the rain and lowering clouds far north of us, as well as far south, while we had long periods of uninterrupted sunshine. So many confirmations seem to make this good weather more than a matter of coincidence, and it seems reasonable to surmise that the region lies in a calm area between storm-breeding centers.

Only one storm actually hit us. That was quite enough. At the Gates of Aniakchak, made by a rent in the walls of the volcano, we struggled forward, almost spent under the heavy packs, in an effort to gain, by forced marching, some sheltered spot in which to camp for the night. A heavy wind had risen, and peculiar, disk-shaped clouds came rolling in from Bering Sea.

THE ALASKAN BALD EAGLE MENACES OTHER BIRDS

With his lethal talons he can strike down even the largest of the wild fowl and snatch salmon from the water. The United States Navy Alaskan Aerial Survey in 1926 found it impossible to use carrier pigeons because of the depredations of these pirates of the air.

* See in the National Geographic Magazine for January, 1917; February, 1918; and September, 1921, and the National Geographic Society's publication, "The Valley of Ten Thousand Smokes," by Robert F. Griggs.

FROM THE DESOLATE SHORES OF ANIAKCHAK BAY THE TREK TO THE CRATER STARTED

The mounds in the foreground are native *barabaras*, half huts and half caves (see text, page 322, and illustration, page 338).

ANIAKCHAK CRATER PRESENTS A VISTA OF STRANGE CONTRASTS

From the desolate floor of the volcano at the left to ice-covered Vent Mountain; thence down to fields of grass and flowers and Surprise Lake at the right, the explorer passes through miniatures of the zones of earth (see, also, pages 326, 327, and 330).

VOLCANIC EJECTA IN THE BLUFFS AT THE CHIGNIK CANNERY

Many miles from either Veniaminof or Aniakchak are found evidences of their activity. The straws indicate distinct layers of rock flung at some remote time from the craters.

FOLLOWING WHERE PREVIOUSLY ONLY BEARS HAD TROD

Kenneth Chisholm compares his own and his friends' tracks on the floor of Aniakchak Crater with those of a mother brum and her cub (see text, page 328, and illustration, page 337).

EVEN WITH 100-POUND PACKS THE ANIAKCHAK TREK PROVED EASY

The way led over fairly smooth ground that afforded firm footing, and no serious difficulties were encountered (see text, page 323). Here the explorers are passing Pinnacle Mountain.

IRON-SODA SPRINGS POUR INTO SURPRISE LAKE

Emulating the bears, the explorers drank freely of the mineral waters (see text, page 341). The lake is a spawning bed for salmon (see text, page 332).

DEEP MEANDERS RENDER NAVIGATION OF THE ANIAKCHAK RIVER DIFFICULT

Bluffs, some of them 100 feet high, wall these winding channels, and often a few hundred yards of neck separate a mile of the stream (see text, page 322).

FROM THE RIM, PART OF ANIAKCHAK CRATER SEEMS AN AVERNIAN COBWEB

The cinder cone in the midst of radiating lava flows, all linked together, resembles a giant spider lying in wait for prey (see text, page 339).

BELOW AN OBSIDIAN CLIFF, ANIAKCHAK BREATHES SMOKILY

Bear tracks, which led the explorers into the crater, showed them the way to an area of fumaroles. Tufts of fur about the vents prove that the animals use these natural Turkish baths to help them shed their winter fur (see text, page 340).

We tied our little tent in the lee of a volcanic breccia bomb and passed the night piling rocks around its edges in an effort to keep it from blowing away. Sleep was out of the question; but morning brought a cessation of violence in the battling elements.

Leaving two of the party in camp, I went with Chisholm and Bartlett toward the titanic gash in the crater walls to reconnoiter. A river from a source within the crater came tumbling out of a splendidly colored canyon. The tracks of a mother bear and cub led toward the Gates and, with the assurance that a man can go where a bear can go, we followed the tracks along the sliding talus and rocks at the river's edge (see illustration, page 325).

CALM OUTSIDE; A TEMPEST WITHIN

The storm had ceased outside the crater; consequently we were totally unprepared for the sight that greeted our eyes. Emerging from the mighty cleft, into a widening opening, where a huge rim circling above and away from us lost itself in distance, we found a terrific storm raging inside the great crater world.

A dark, lowering mass of cloud covered something immediately in front of us. Cloud Niagaras flowed over the 3,000-foot rim to fill the floor of the crater, while the

CASTLE CRAGS LOOM UNDER THE FROWNING CLIFFS OF BLACK NOSE

This rugged, glacier-cleft barrier is a prominent point on the rim of Aniakchak near the Gates. The dark area at the foot of the declivity, reported by earlier explorers as a lake, proved to be an explosion pit below the main crater floor (see text, page 341).

wind tore the vapor billows to pieces and sent them hurtling across the crater floor to swoop up to the rim on the farther side, more than six miles away. It was truly an awesome sight.

Finding it useless to advance into the crater under such conditions, we returned to our bomb shelter until the following day, when, with clear skies and a genial sun heralding the breaking of camp, we roped ourselves together for safety and packed our equipment along the loose falling rocks of the Gates into the crater.

How different it was from the previous day! Where a dark mass of cloud had hung before, we now saw a majestic Vent Mountain, with snow-covered truncated top, rising 2,200 feet from the 30-square-mile floor of the crater—a volcano within a volcano!

Contorted lava flows, pushed up into fantastic shapes of welded rocks, covered the area to the left of the Vent Mountain, and a sizable river of underground source rushed from a cave in the lava to join the main river at the Gates. Volcanic ejecta washed from the slopes of Vent Mountain formed a long alluvial fan.

A similar deposit opposite made a natural dam that impounded the seepage waters of the crater into a lake 2½ miles long, which nestled under the northern rim. We followed the shore of the lake until we came to its head, where basaltic flows of lava, hardening in blunt noses, made several beautiful coves, sheltered and ideal for camping.

The yellow grass was sending up new shoots of life, the alders were greening, and catkins appeared on the willows. We

FROM THE RIM OF ANIAKCHAK ONE LOOKS DOWN UPON A WORLD IN MINIATURE

Though the largest river flowing to the Pacific Ocean from the Alaska Peninsula has its rise within the crater (see page 333), the volcano remained undiscovered until 1922 (see text, page 319). The peak in the center background is Vent Mountain (see text, page 329).

FOR EVERY STEP UP VENT MOUNTAIN A FOOTHOLD HAD TO BE CHOPPED IN THE ICE (SEE TEXT, PAGE 333)

THE AUTHOR MAKES A MOTION-PICTURE RECORD OF ANIAKCHAK CRATER IN ACTION

COLUMNS OF VOLCANIC GLASS FORM GIGANTIC CLIFFS

What a primitive Eden Aniakchak Crater might have been! Here material for knives and arrowheads abounds in a region rich in all manner of game.

had to watch our step to keep from treading on the cleverly hidden nests of ptarmigan and grouse that rose continually from almost underneath our feet.

THE CRATER TEEMS WITH WILD LIFE

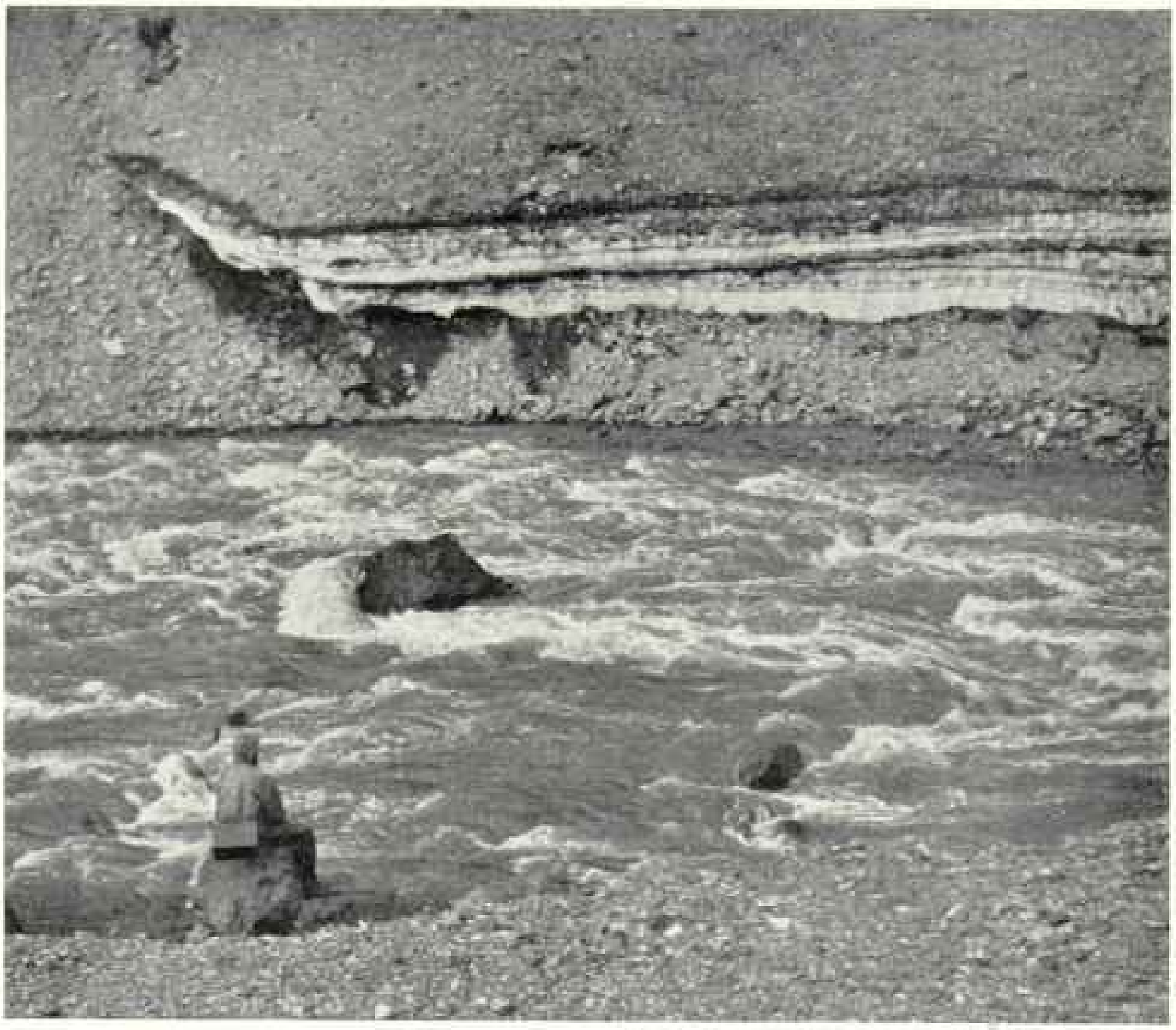
We had expected to find nothing but sterile wastes inside the volcano, and the amount and variety of life astonished us. On the first day we saw, in addition to the game birds just mentioned, numberless smaller birds flying about, eagles soaring overhead, a lone raven squawking raucously, ducks whirring past, and bos'n birds and sea gulls circling over the lake. Ever and anon a bos'n bird would dive into the placid waters to emerge with a shining fingerling in its beak.

The lake, though inside a volcano, was a spawning bed for salmon; and piratical trout fed on the millions of fingerlings. Foxes, which had turned a lava cone near the lake into an apartment house, watched us curiously whenever we approached, yapping at our intrusion.

A trail around the margin of the lake was deeply indented where great brown bears, stepping characteristically in the same tracks for generations, had made holes almost a foot deep. Subsequent findings showed that bears were always in and around the crater, and that many hibernated in the lava caves.

The fish, game, and bird life was even surpassed by the variety and profusion of flowers, particularly orchids. The more we observed, the more fully were we convinced that Aniakchak was a world complete in itself inside an exploded volcano!

Selecting one of the several ideal coves as a camp spot, we passed the next two weeks examining in detail phenomena in



ANIAKCHAK RIVER RUSHES THROUGH THE CLEFT IN THE CRATER RIM

A rift that can be traced from Bering Sea to the blocked mountains of the river canyon has rent the walls of the volcano to form the Gates that permit the torrent to escape.

the area of 30 square miles within the encircling 21-mile rim. First we climbed the rim to a castled buttress that thrust out more than 2,500 feet above the lake. Photographs from this point pieced the whole panorama together for us, and we were able to pick out spots that offered incentive for closer study.

THOUGH STILL HOT, VENT MOUNTAIN IS INACTIVE

The day after our survey from this aerie we scaled Vent Mountain in a laborious ascent that necessitated cutting steps all the way in the icy snow surface. Several layers of orange-red lava welded together formed at the top a circular, exploded rim more than 1,000 feet in diameter and 600 feet deep. Dark exposures of lava in the bottom of the vent indicated heat, but noticeable activity was lacking.

From this elevation we had an excellent view of a subcrater below the northwestern rim of the main volcano. It was crescentic in shape, gradually declining toward its horns from its central point of 1,000 feet elevation to a level with the main floor.

At its base, which is about two miles in diameter, appeared one of the strangest sights I ever beheld. A cinder cone, in size and shape like a football coliseum, stood dark and gaunt above the general level. From it as a center, lava flows had exuded in every direction, each one distinct in itself and welded to its neighbors. The dark-red basalts were crevassed in concentric arcs vividly etched into relief by the snows that filled them and exhibiting a movement in lava remarkably similar to the motion of glacier ice where the center moves faster than the sides. It did not require much imagination to picture the

SHELTERED COVES MADE GOOD CAMP SITES

Firewood was plentiful, the waters of Surprise Lake teemed with salmon and trout, and an abundance of wild game was available (see text, page 332).

SURPRISE LAKE TEEMS WITH WONDERS OF NATURE

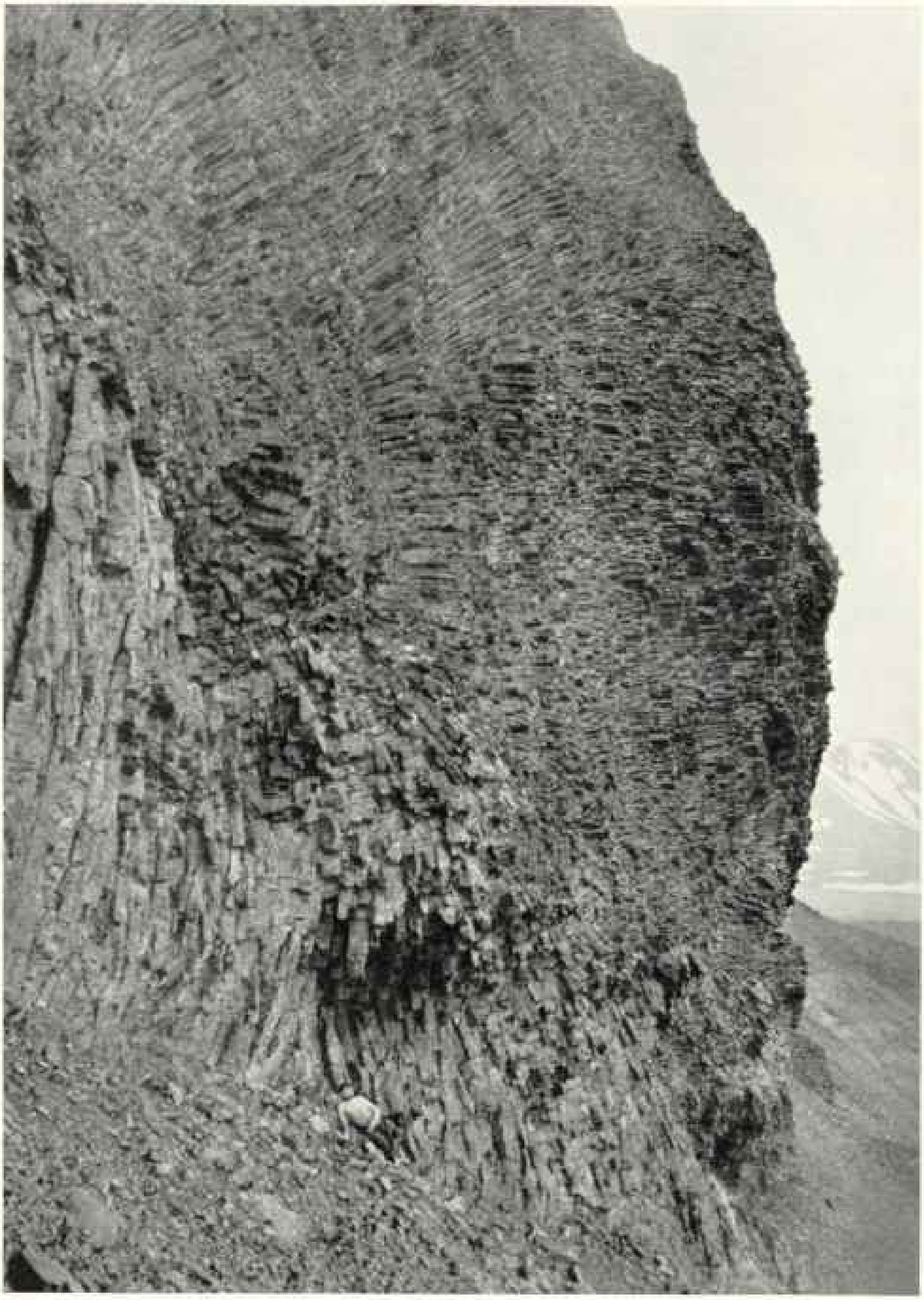
Iron springs have tinted the rocks on the shores until they look like scattered oranges. Soda welling up from the depths of the water gives to Aniakchak salmon a flavor that is recognized wherever they are caught (see text, page 341).

CONTORTED LAVA ROCKS AFFORD SHELTER FROM SUDDEN WINDS

Storms are frequent and violent in Aniakchak Crater (see text, page 328). Chisholm and Bartlett, caught in a gale, are glad for even slight protection.

"RED" CHISHOLM PROVED AN ADMIRABLE FERRY

The big football tackle played Friar Tuck to his companions' Robin Hoods when shallow streams were to be crossed, refraining, however, from giving his passengers a ducking, as did the doughty friar of Sherwood Forest.



NATURE'S PIPE ORGAN PLAYS ITS PART IN THE SYMPHONY OF ANIAKCHAK

Black obsidian in columnar crystals like the tubes of a giant instrument forms portions of the shining glass wall of the crater (see text, page 340, and illustration, page 332). Columnar formations in Alaska were also found by the National Geographic Society's Pavlof Volcano Expedition (see "Mapping the Home of the Great Brown Bear," by Dr. Thomas A. Jaggar, in the NATIONAL GEOGRAPHIC MAGAZINE for January, 1929).

BEAR TRACKS ARE THICK ON THE RIM OF ANIAKCHAK (SEE TEXT, PAGE 328)

ALEXI, CHIEF OF THE CHIGNIK ALEUTS, CAUGHT VENIAMINOP SMOKING

His information, "Black Peak, she smoke," spurred the author's party to climb the 8,400-foot volcano to prove its activity (see text, page 343). On the rack behind him and his children a part of their winter supply of salmon is drying.

CARIBOU ON VENIAMINOF SUPPLIED THE PARTY WITH MEAT

Herds of the Northland penetrate to fastnesses unknown to men, and the natives call them ghosts from nowhere.

PRIMITIVE HUTS HOUSE THE ALEUTS OF CHIGNIK

Homes in the native village remain unchanged, despite the three canneries near by. Children and their elders showed marked interest in the young athletes of the exploring party.

TROPICAL ORCHIDS BLOOM IN ICE-RIMMED ANIAKCHAK

Cypripedium brings a suggestion of equatorial jungles to the amazing natural wonderland within the crater (see text, page 332).

whole phenomenon as a huge spider in the center of an enormous web.

Each tour of inspection in the crater required a full day, since it was necessary to cover from 10 to 15 miles in going from our camp on the lake to any spot on the opposite side. The diameter of the great bowl measured 6¾ miles by air line. As yet we had found no volcanic activity, and the real discovery of the summer was still to come.

The chaos of broken lava flows that looked so much like a huge Avernian cobweb lured us, and we soon covered the few miles of grassy meadows and cinder ridges that lay between us and the dark masses of lava flow held in the multicolored crescent subcrater. On the way we shot a snowshoe rabbit and a few ptarmigan to supplement our evening meal.

Travel was not so easy, however, when we started on the lava flows. We had to crawl through natural bridges of welded rocks, work precariously around yawning chasms, and step with extreme caution on the snow packed into the crevassed lavas. The snow always melts away from projecting rocks, and, despite our care, many a break through the thin crust required hapless members of the party to be pulled out amid the good-natured jests of the others.

The cinder cone proved to be highly colored from previous fumarolic activity. Climbing down its sloping side, we came to an area of soft, muddy clay, pumice, and volcanic ejecta, very similar to the floor of the Valley of Ten Thousand Smokes.* Fresh bear tracks honeycombed the surface and led over a hummocky mound that hid what lay beyond.

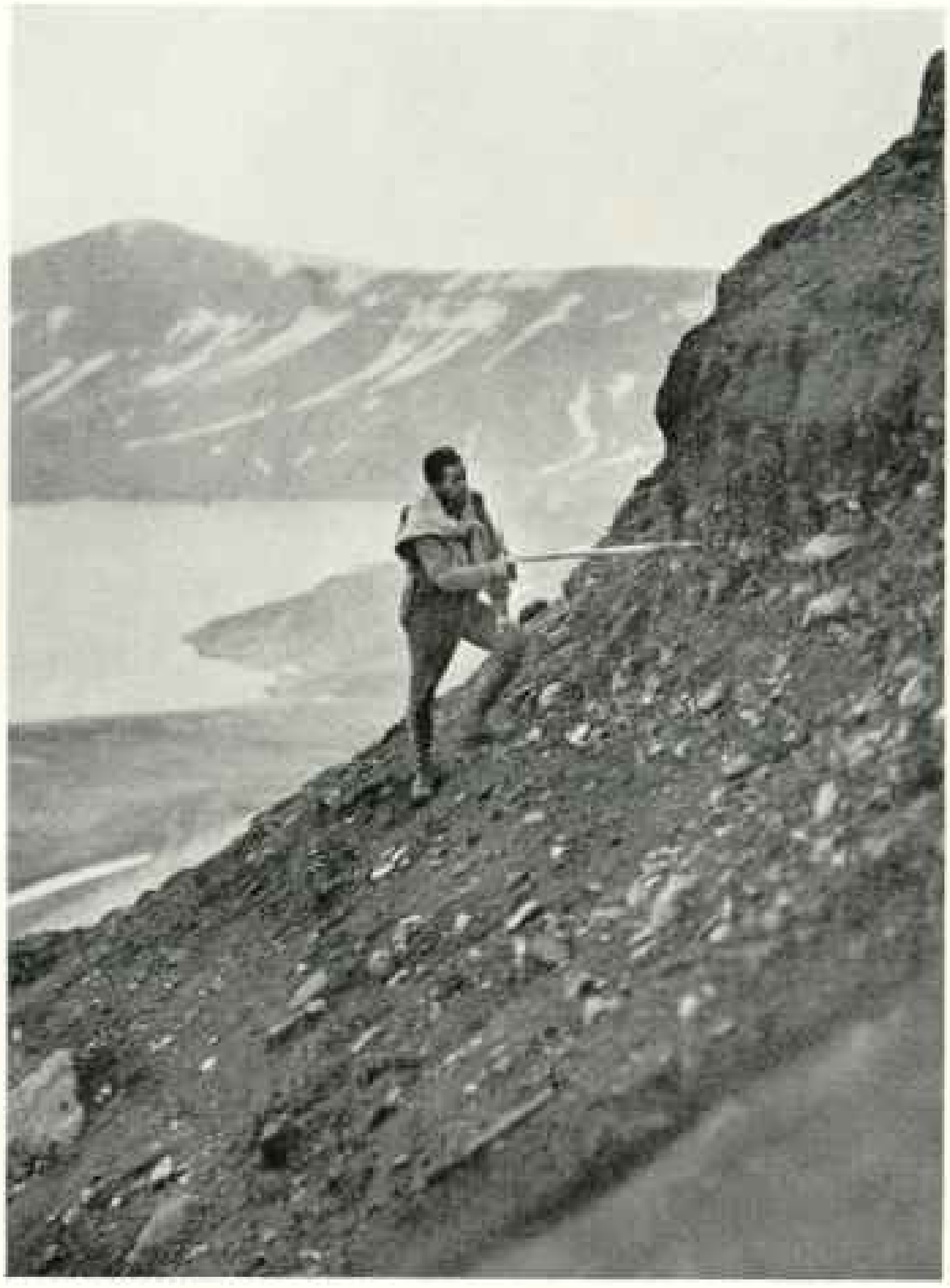
ANIAKCHAK STILL BREATHES SMOKE

Gaining the top of the mound, I noticed a thin column of white vapor curling into the air. I thought at first that this was the effect of melting snow under the warm sun's rays, and I was startled to see the same white column assume definite volume at the mouth of an aperture in the varicolored mud. Soon several similar phenomena came into view.

With a glad shout, we scrambled forward, and there, sure enough, was the throaty breathing of Aniakchak from dozens of steaming vents. There, inside the great crater, was a little Valley of a Hundred Smokes, a miniature of its famous counterpart some 150 miles to the northward.

Bears had led us into the great crater through the Gates and bears had now shown us the way to our chief discovery.

* See the National Geographic Magazine for January, 1917; February, 1918; April, 1919; September, 1921.



FOSSILS UNDERLIE THE LAVA OF EXPLODED WALLS

More than 1,000 feet above Aniakchak Crater's floor, near Black Nose, Bartlett looks for the relics of prehistoric life which abound in sedimentary strata just beneath the surface (see text, page 341)

the activity of a supposedly dead volcano. The huge animals had a reason for congregating around the fumaroles. Large bathtub-shaped depressions were dug into the steaming mud and bits of shaggy hair clung to their reddish sides. It was the bears' Turkish bath that helped them shed their winter fur! (See, also, page 328.)

Multicolored crystals and fumarolic incrustations surrounded the vents, and here and there gaseous odors could be detected. Crossing from the fumaroles to the lava beds again, we came up under the precipitous walls of the great subcrater. Layers of terra cotta, black, and vivid red were brought out in great intensity by the packed snow that lay between them.

Most remarkable were several huge cliffs of obsidian, or natural glass, in columnar structure, at one point horizontal, like a giant pile of wood with its hexagons pointed outward, in some places radiating in long vertical columns somewhat fan-shaped, and in others extending like the pipes of a huge organ. For more than a mile and in heights of some 600 feet, these obsidian cliffs debouched from the sides of the crescent crater.

BEANS COOK TO A TURN IN A FUMAROLE

The obsidian cliffs inside of Aniakchak Crater were not like the mossy lichen-covered columns of the Yellowstone National Park obsidian. In Alaska's largest crater the glass was freshly formed and shiny, with an iridescent play of colors like the sheen of a raven's wing. When the sun hit it, it glinted with the colors of a peacock's tail.

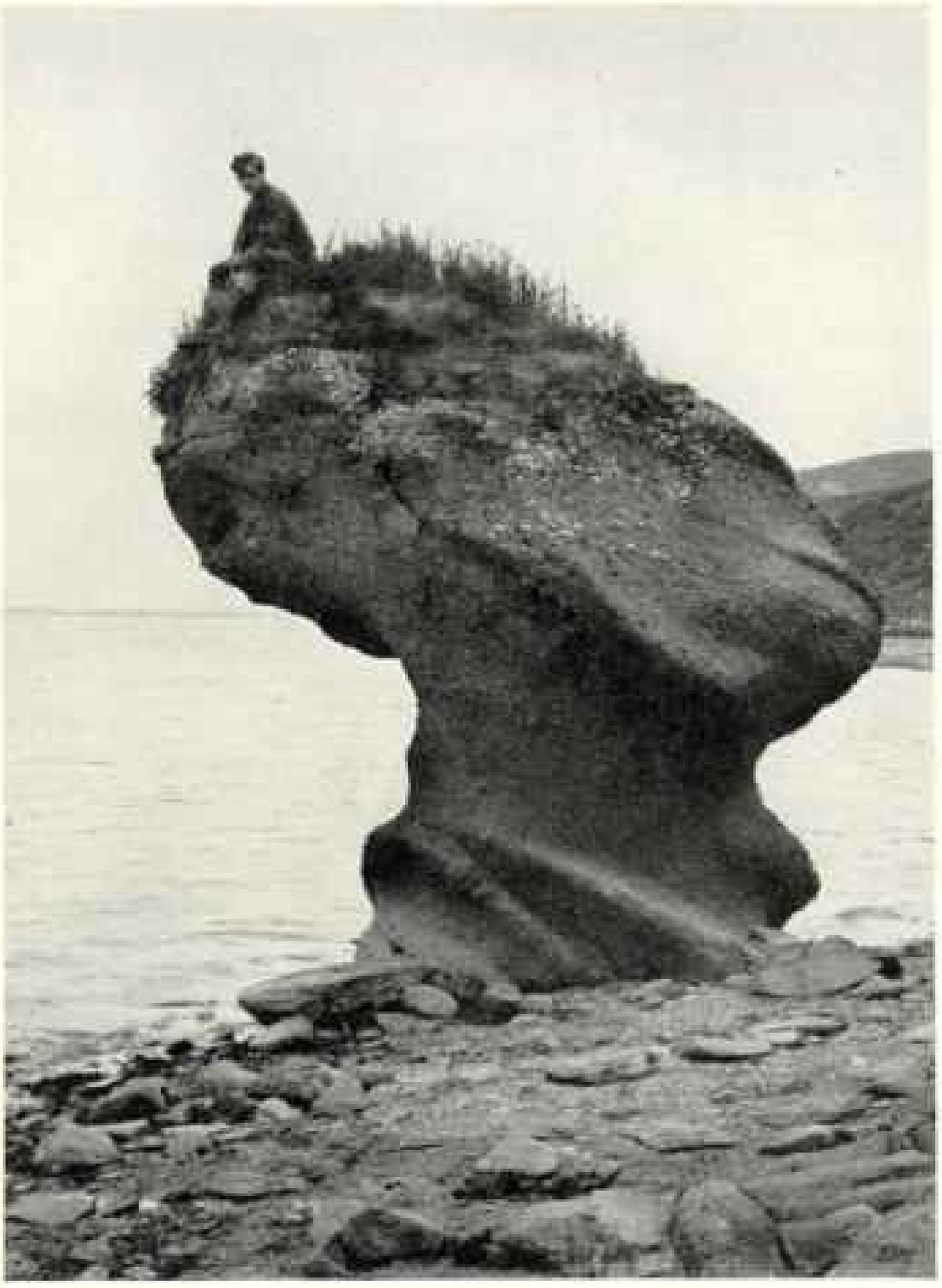
Near by, a line of fumaroles, coming out under pressure, followed a fissure up the sides of a cliff. We had no instruments to measure their exact degree of heat, but a practical means was at hand, inasmuch as it took only a few hours for a pot of beans placed in a steaming vent to be cooked palatably.

Naturally we were enthusiastic over our latest find. Following a brief exploration by its discoverers, Aniakchak had been pronounced dead. Our finding of activity not only changed its classification, but identifies it as the largest explosive active crater in the world.

Minor forms of volcanic forces were found near the lake camp. Just a hundred yards from our cove, giant springs gushed from the base of the larger of the two cones of lava near the head of the lake.

The stream bed and rocks are colored a deep orange by the iron-soda-bicarbonate water of the springs, and the near-by shores of the lake look as if strewn with a barge-load of oranges. The mineral springs tasted like the finest quality of table mineral water, and, following the example of our bear friends, we drank freely from them whenever we passed by (see page 326).

A fissure extends across the lake, and the high coloring of the rocks that indicate its path shows that iron-soda springs issue from the lake bottom. Wading out into the water and tasting it, we found almost pure soda water in one spot gradually diffusing into mountain lake water in another.



ICE GRINDS SHORE ROCKS TO QUEER SHAPES

Many such fantastic figures are found along Chignik Lagoon and Chignik River.

Salmon caught in Aniakchak Bay can always be recognized by cannerymen. The reason lies within Aniakchak Crater. Surprise Lake, nestling within the frowning volcanic walls, is a spawning bed for salmon that make the long run up the Aniakchak River—and the baby salmon are raised on soda water!

Other interesting features abound inside the crater; in fact, several summers of exploration would be necessary to exhaust their possibilities. Under the frowning, glaciered cliff of Black Nose, a prominent point on the crater's rim near the Gates, what had been reported previously as a lake and the source of the stream that joins the main river at the crater exit was found to be an explosion pit or blown-out crater below the level of the main crater floor. It was about 800 feet across and surrounded by ruptured walls of lava. A half mile away another explosion pit similar to the first offered evidence of the series of cataclysms that gave birth to the wondrous variety of Aniakchak. A huge oval cinder cone, a lava mound, and, near by, a deep explosion pit near the Eastern Gates of the crater were not studied in detail.

A GREAT RIFT RUNS FROM MOUNTAINS TO SEA

Not the least remarkable geologic feature of the crater is the presence of fossil-

EIGHT HOURS OF STRUGGLE UP ISLAND GLACIER LED TO VENIAMINOF'S RIM

Like the glass mountain of the fairy story, the volcano baffled the climbers until they found this approach on the Bering Sea side (see text, page 344).

iferous sedimentary strata forming the lower thousand feet of cliff from the Gates and Black Nose along to the Eastern Gates, on the opposite side of the great circle. Both gates seem to have been rent asunder by a huge seismic rift that can be traced from Bering Sea across the Aniakchak Crater and on into the blocked mountains of the Aniakchak River canyon, outside the volcano.

Vent Mountain, which lies on the rift, was probably a live area released by the earthquake to well out and form an up-built volcano inside the main one. The presence of sedimentary strata can be explained by the assumption that the huge mountain, in blowing off its top and sending some 19 cubic miles of ejecta over the surrounding country, had blown up its very foundations, leaving them as exposed walls under the built-up lava.

After living two weeks inside its protecting walls, we were loath to leave our volcanic wonder world.

Breaking camp and loading up our packboards, we skirted the lake and threaded our way through the Gates to see Crucifix Mountain, a remarkable landmark facing the great crater, loom up before us. Two days' going brought us past Pinnacle Mountain, to the junction of the rivers, where we had cached our boat. With the current helping the motor, we reached Aniakchak Bay in a day. Here a piece of good

CRAB GLACIER'S CLAWS GRIP AN UNSCALABLE WALL OF VENIAMINOF

For more than a week the author and his companions struggled up the steep pitch of ice only to reach a naked, 1,000-foot cliff that defied them. They had to go to the Bering Sea side to find a negotiable approach to the volcano (see text, page 344, and illustration on opposite page).

fortune awaited us, for a Columbia River cannery tender was just ready to return to Chignik Bay.

NEWS OF A SECOND VOLCANO EXCITES THE EXPLORERS

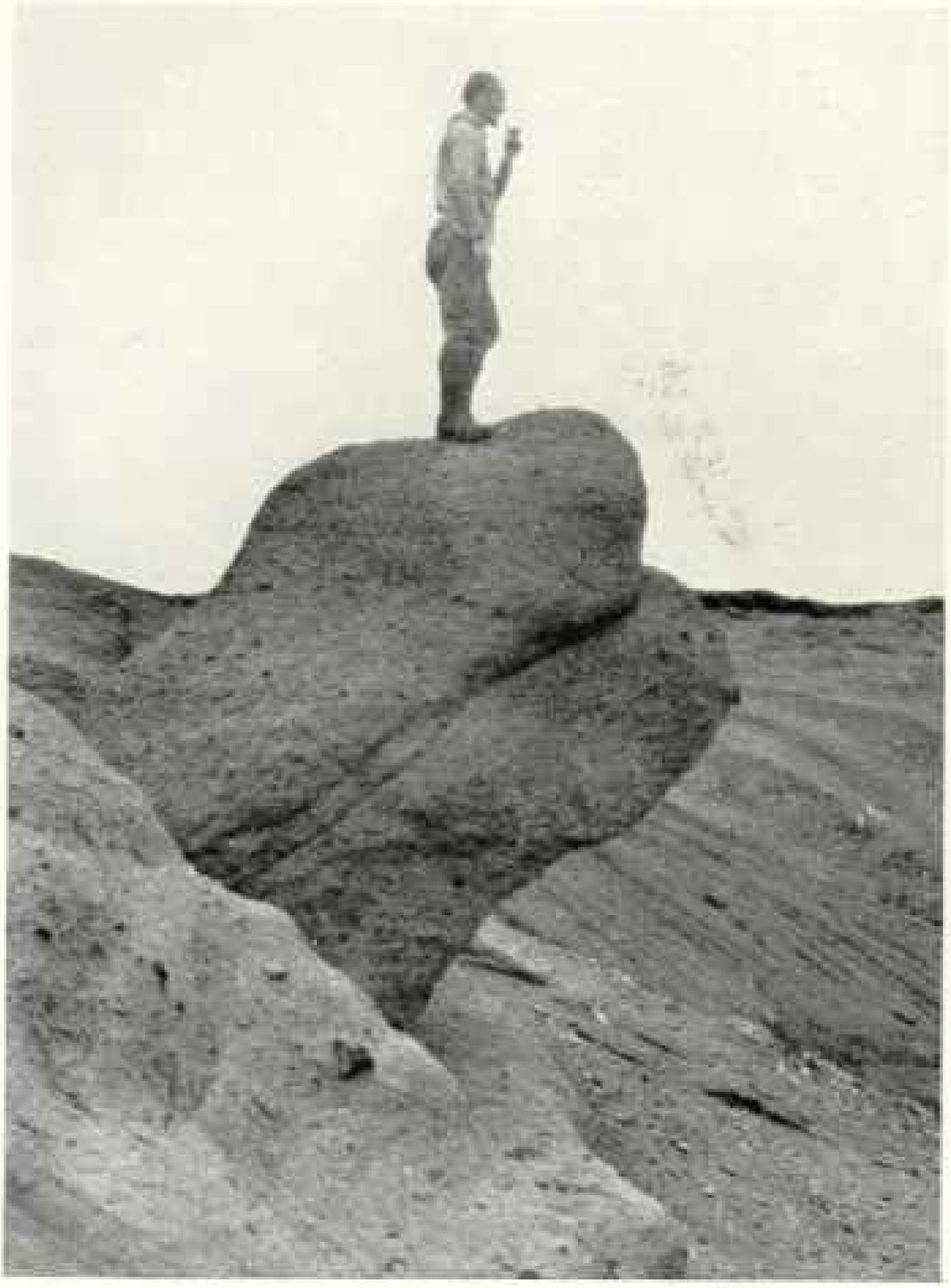
"Black Peak, she smoke!" said Alexi, chief of the native village at Chignik, when we returned from our conquest of Aniakchak. Alexi had been at Katmai village at the time of the greatest eruption of modern times, when Katmai blew its top off, in 1912,* and certainly he should know whether a volcano was active or not. Black Peak was the local name for the great Veniaminof Volcano, whose snowy rim, hanging in a crescent, towered 8,400 feet high on the distant skyline.

This news surprised us. Were we to find the huge mountain likewise active and in one summer discover activity in the two largest explosive craters in the world? With a fresh store of films and provisions, we got into our boat again and started up the Chignik Lagoon.

Our combined weight was a little more than 1,000 pounds, and, with equipment that weighed some 500 pounds more, we were packed so tightly into our boat that we almost had to take turns drawing a deep breath. However, we negotiated Chignik Lagoon and Chignik River easily and made a pleasant stop at the mouth of the river, at the Government fish weir.

Chignik Lake proved a different proposition. With imposing mountains rising

* See "Volcanoes of Alaska" and "The Recent Eruption of Katmai Volcano in Alaska," in the NATIONAL GEOGRAPHIC MAGAZINE for August, 1912, and February, 1913, respectively.



WINDS PLAY WEIRD TRICKS ON VENIAMINOF

These monoliths, carved out of lava by the gales that sweep the volcano, are known in the Northwest as *hoodoos*.

from its luxuriantly clad shores, it is truly beautiful; but, exposed to the full sweep of the Bering Sea, it can become lashed to fury almost in a moment and is exceedingly treacherous. We encountered storms on its surface, one of them in a midnight crossing, and were fortunate indeed to beach our half-filled boat and find shelter in a deserted native baraburа.

Veniaminof Volcano is a storm breeder and seldom emerges from the clouds. Days of swamping through dense alders; of slushing through tundra where rotating niggerheads often pitched us waist-deep into black mire; of enduring the incessant torment of mosquitoes and black gnats, and fording swollen rivers of glacier water, made life miserable until, ragged and beaten, we made our final camp under the frowning walls of the great mountain.

THE PARTY CONQUERS VENIAMINOF

Crab Glacier defied our assaults for more than a week, as we tried to chop our way up its ice tentacles that embraced a naked 1,000-foot cliff. Finally, in a desperate night-and-day trek to the Bering Sea side, we gained the rim in an eight-hour climb up the Island Glacier and, bruised and staggering from want of sleep, gained the reward of a perfect day on top.

Here again was a blown-out rim 20 miles in circumference inclosing a crater glacier 25 square miles in area. Like the tentacles of a huge octopus, the ice ground through rifts in the rim to grip the mountain sides for miles. The southern rim was lower and allowed the crater glacier to flow out of the great stone cup toward Perryville in a field miles wide.

Here and there, at the base of the 2,000-foot cliffs on which we stood, the ice yawned away in impressive chasms, where the heat of the mountain melted the encroaching glacier. Strangest of all was the cone in the center, packed in ice and smoking on two sides of its upbuilt rim from slag heaps of lava, and now and then coughing out black ashes over the surrounding white snows.

Descending its sides and examining vertical exposures of ice in broken ice falls, we noted layers of black volcanic ash and sand a few feet thick alternating with glacier ice a score or more feet thick. An

SHARPENED APPETITES WELCOMED MEALTIME ON VENIAMINOF

The party shot a caribou and buried the meat in a convenient snowbank for use when needed. The warmth of the campfire and the odor of cooking food banished memories of the arduous day-and-night trek from Crab Glacier (see text, page 344, and illustration, page 338).

interesting study of Veniaminof's eruptions could be made in these exposures.

KATMAI, VENIAMINOF, AND ANIAKCHAK COMPARED

With Veniaminof successfully scaled, we made our way back to our camp at its foot. Our assault on the mountain had taken its toll in strength and spirits, and the necessity of hurrying back to Chignik in time to catch the last outgoing steamer left us no time to rest. Fortunately, we had food in abundance, for caribou roam the flanks of both great craters.

Later on, amid the comforts of civilization, as we checked over our three seasons of exploration on the Alaska Peninsula our convictions as to the accessibility of the regions covered settled overwhelmingly in favor of Aniakchak.

Katmai and the Valley of Ten Thousand Smokes form a scientifically significant region, but difficult to approach and its active phenomena are waning. Veniaminof, likewise difficult of access, is geologically important, but aside from its big game has little to hold popular interest.

Aniakchak is near the general run of steamship traffic to southwestern Alaska, has a natural harbor at its point of nearest approach, and presents few of the difficulties of travel experienced elsewhere on the peninsula. Its greatest asset is its extraordinary variety. Its immensity inspires one with awe and its activity excites one to wonder; its scenic and scientific features, its profusion of plant and animal life augment immeasurably its appeal as the largest active crater in the world—a world within a mountain.

Notice of change of address of your NATIONAL GEOGRAPHIC MAGAZINE *should be received in the office of the National Geographic Society by the first of the month to affect the following month's issue. For instance, if you desire the address changed for your November number, The Society should be notified of your new address not later than October first.*

THE KOALA, OR AUSTRALIAN TEDDY BEAR

By F. Lewis

Chief Inspector of Fisheries and Game for Victoria, Australia

With Illustrations from Photographs by the Author

IF AN imaginative child could be transported from a visit to an American toy shop to the midst of an Australian eucalyptus forest, and there shown for the first time the Australian native bear, or Koala, climbing among the branches and nibbling the leaves, he would be hard to convince that the teddy bears he had been inspecting had not been brought magically to life; for the Koala, with his round, roly-poly body, short arms and legs, and pointed nose, is the living prototype of the jolly toy bear that helps make Christmas morning merry in many an American nursery.

Koalas are found in eastern and southeastern Australia, but do not occur on any of the neighboring islands or in the western half of the continent. They were probably once the most common animals in the Australian bush, but about 40 years ago a widespread epidemic overtook them and they died by thousands.

They also were hunted extensively for the sake of their warm, thick fur, and as a result are now extinct in New South Wales. A few hundred are still to be found in Victoria, in carefully protected localities, and a fair number remain in Queensland. Little is known of the nature of the disease that so nearly exterminated them, but study is being given the subject now, with a view to preserving the remnants of this formerly numerous species.

The Koala is one of the most interesting of Australian animals. He has a thick, grayish-colored fur, a prominent black nose, and stands about two feet high. A good specimen weighs about 30 pounds. He is one of the most inoffensive animals imaginable, doing no harm or damage to anyone or anything.

Essentially an arboreal and mainly nocturnal animal, he spends his time in the branches of certain species of eucalyptus trees, where he feeds at night upon the tender young leaves. If approached, he will sit and stare at the intruder with a surprised expression, and only if danger threatens will he climb to the topmost branches. He is rather inactive, especially in summer, and often sits in the fork of a tree, sleeping the daylight hours away. The adult males are fond of perching themselves on a dead limb at the top of a tall tree, from which they appear to enjoy their survey of the surrounding landscape (see page 354).

They have five toes on each foot, and each toe is armed with a curved, needle-sharp claw. The toes are in groups of twos and threes, the two claws being in the form of a double thumb. They are thus enabled to climb easily and also to grasp the branches of a tree and pull them down for the purpose of feeding on the leaves.

Even an iron telegraph post offers no obstacle to their climbing powers, and I have seen them sitting among the wires on top of one, although it is difficult to say what motive took them into such a position. A tall flagstaff seems to present an irresistible temptation, and even on the windiest of days they climb such posts to perch on the top.

The leaves of certain kinds of the Australian eucalyptus (gum trees) form their staple diet, although occasionally they feed on the barks of certain trees and on sphagnum moss, perhaps as a tonic or medicine. They never drink water in a state of nature, but are apparently able to obtain enough moisture from feeding on the juicy gum shoots from which the commercial eucalyptus oil is extracted.

LIVE TEDDY BEARS ARE POPULAR WITH AUSTRALIAN CHILDREN

Koalas are such quaint and attractive little creatures that they are much in demand as household pets. They are very easily tamed, but as they grow older they are careless of the fact that their claws have a needlelike sharpness, which will easily penetrate the thickest and strongest cloth.

Although when living in the bush they take no liquid, in captivity they quickly acquire a taste for weak sweetened tea and starchy foods. This depravity is the cause of their undoing, for if given such things in mistaken kindness they soon begin to lose condition and in a few months die

AUSTRALIA'S REAL-LIFE COUNTERPART OF THE AMERICAN "TEDDY BEAR"

Koalas are slothlike creatures about two feet tall, tailless, and dressed in a coat of thick, grayish fur. They were once present on the Australian Continent in millions, but are now limited in range to the southern and eastern parts.

"TEDDY" REGARDS THE PHOTOGRAPHER'S ACTIVITIES WITH FRIENDLY CURIOSITY

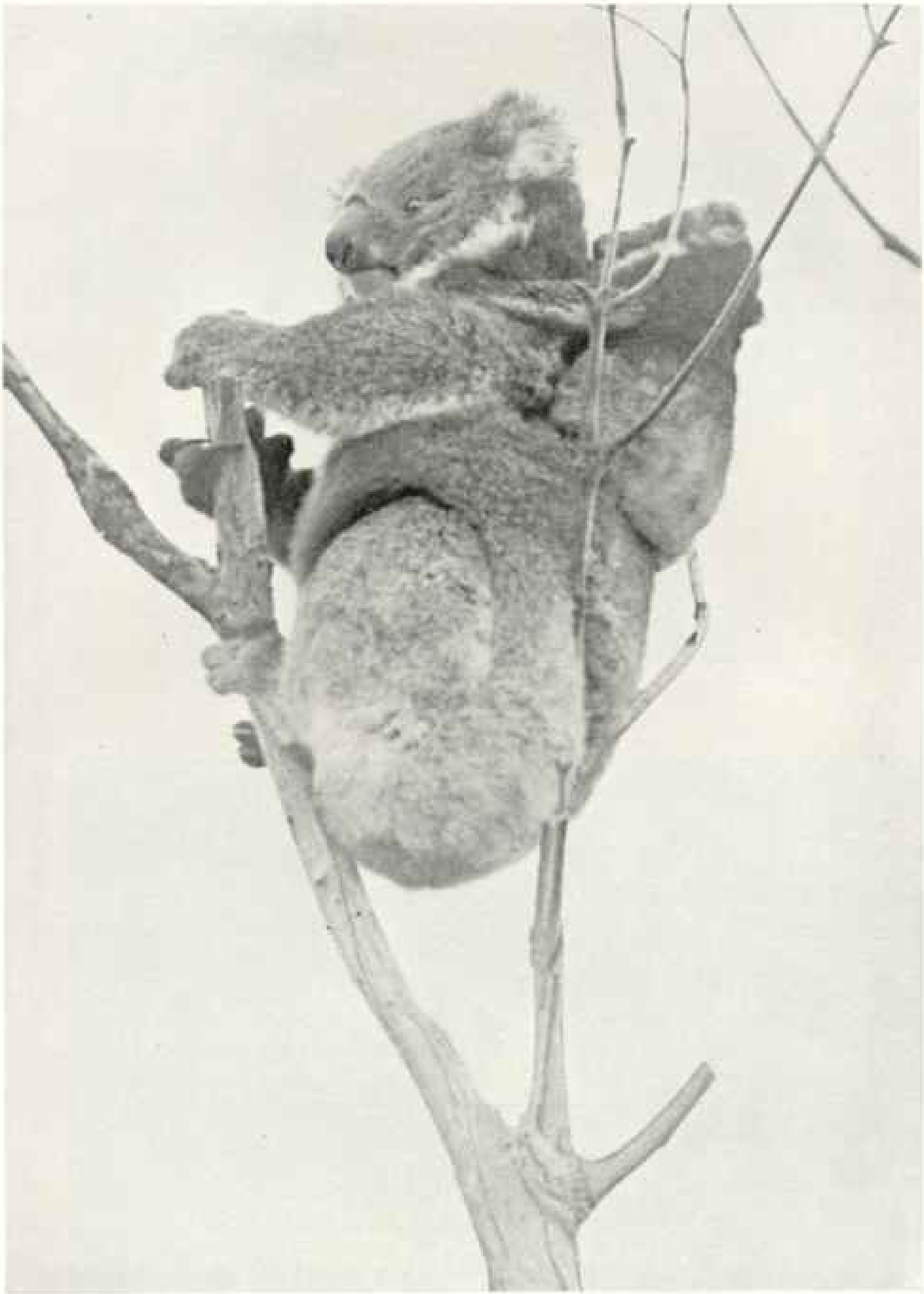
There is no sport in hunting Koalas, for they make no serious effort to escape. If approached too closely, they may climb a bit higher in the tree (left) or may just sit and watch (right). If injured, they give a plaintive cry and hold on to the branch with all their strength. The Commonwealth authorities now protect these interesting creatures from hunters who formerly took advantage of their amiable dispositions to slaughter them for their fur.

MRS. KOALA TAKES EXCELLENT CARE OF HER SINGLE CUB

The diminutive Australian bear is a marsupial and carries her young in a pouch until it has developed sufficiently to cling to its mother's long, thick fur. When from six to ten months old, it leaves the parent and starts climbing for itself. Young Koalas are very shy, and the one at the left has interposed his mother's body between himself and the photographer.

GRANDPA ENJOYS AN AFTERNOON SNOOZE AMONG THE BRANCHES

Koalas spend practically all of their time in eucalyptus trees, where they find comparative safety from most of their natural enemies and an abundant supply of their favorite gum leaves. They sleep through most of the day, often perched between two forking branches. This old fellow has even found himself a chin rest.



MOTHER WENT UP IN THE AIR WHEN APPROACHED FOR A PICTURE

Because they seem unable to thrive on any other diet than the leaves of certain Australian gum trees, Koalas are rarely seen in zoos outside of their native land. Several American cities have tried to keep them, but only the zoological garden at San Diego, California, has met with much success. There the food they require is available.

YOUNG KOALAS MAKE INTERESTING PETS FOR ANIMAL LOVERS OF THE ANTIPODES

They are very easily tamed, and when captured as cubs speedily become attached to their owners and follow them about much as a puppy would. A more amiably inclined creature than the Koala would be hard to imagine. Occasionally, though, he may fly into a rage, for the duration of which one does well to keep beyond reach of his sharp claws. These exhibitions of temper, which are short-lived and infrequent, occur only among the older bears.

LIFE AMONG THE TREE TOPS HAS DEVELOPED A POWERFUL SET OF "CLIMBING IRONS"

Long and curved, the claws of a Koala are remarkably well adapted to its mode of life. The two innermost toes of the forefeet oppose the three outer ones, thus enabling him to get a firm grip on the branches which serve as his highways. The same features that make him a good climber cause an awkward gait on the ground, and he rarely descends from the trees.

THE ORIGINAL TREE-SITTING CHAMPION MAY WELL HAVE BEEN A KOALA

These queer animals seem to enjoy surveying the landscape for hours at a time from a vantage point atop some tall tree or flagpole. Although normally quiet, in mating season the males sometimes rouse the echoes with their discordant love song, and usually choose some lofty perch from which to vocalize.

Photograph from William J. Buzacott

TAKING A KOALA'S FOOTPRINTS BEFORE RELEASING IT IN ONE OF AUSTRALIA'S WILD-LIFE SANCTUARIES

from indigestion. Even when fed only on eucalyptus leaves, they are difficult to keep alive in captivity.

Because of their unique interest and the difficulty of keeping them alive in confinement, and because of their now decreased numbers, the Victorian Government strictly forbids their capture. But, in order that they may be seen under normal conditions, they are gradually being established in suitable places, where there is an abundance and variety of their natural foods.

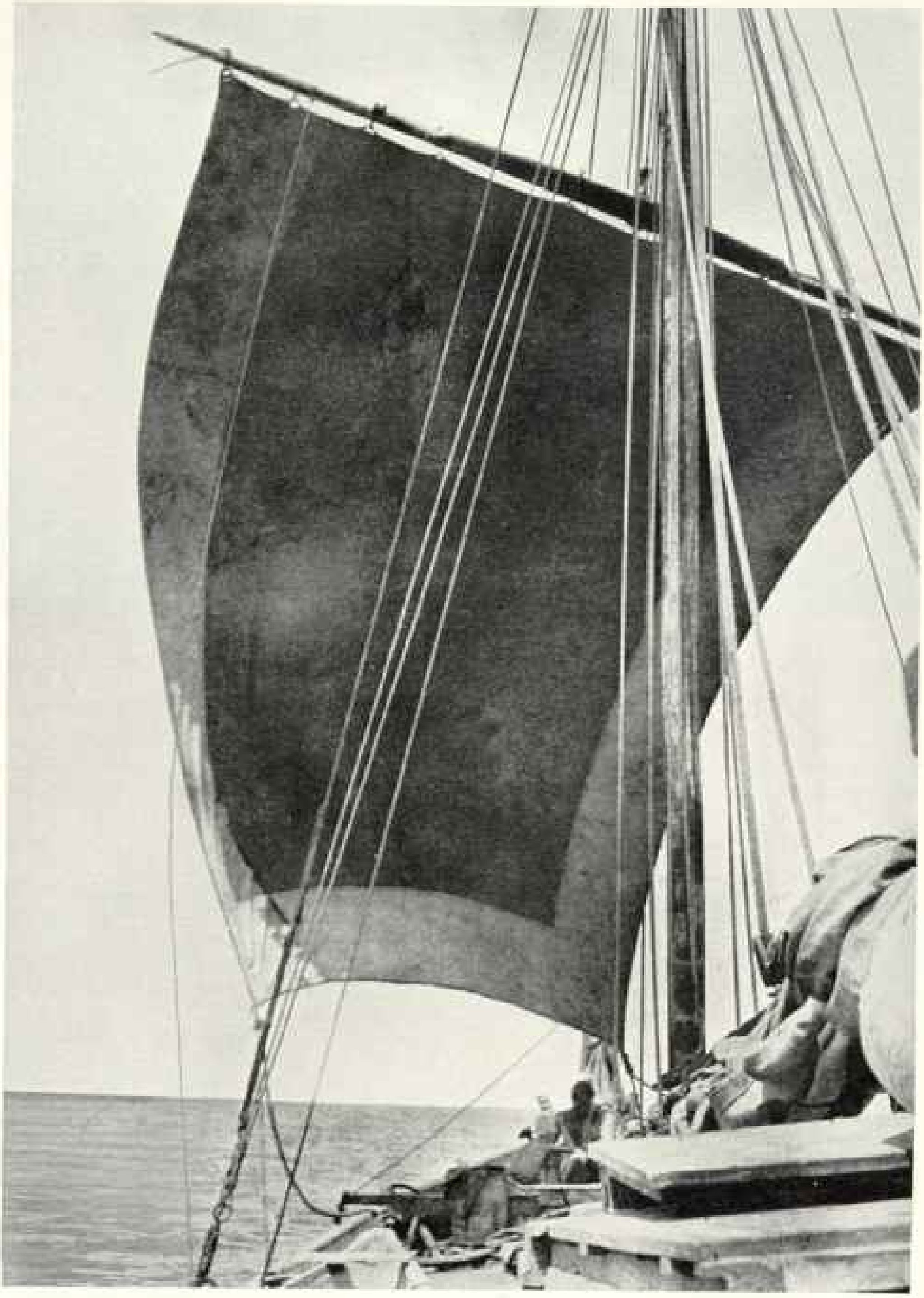
It is now possible, within a two-hour run of Melbourne, with its more than a million inhabitants, to see the Koala in his native gum trees, and it is hoped, through the exercise of strict protective measures, to preserve this interesting little animal for posterity.

The Koala is a marsupial, having a pouch in which the single cub—"Joey," in the language of the bush—after birth in a very immature state, is sheltered and fed for some months. When about six inches in length, it gradually leaves the pouch and spends its time in its mother's arms, not clasped by the mother, because she needs all her toes for hanging onto the trees, but clinging to her thick fur by means of its own sharp little claws. This is the usual position of the young until it is big enough to look after itself; but if danger threatens, necessitating active climbing on the part of the mother, the youngster quickly clambers around upon her back, so as not to hamper her movements. There it hangs on securely while she climbs to safety.

Koalas are, as a rule, silent, but when frightened or annoyed will cry very much like a child. In some of their habits they closely resemble human beings. I have seen a mother bear cuff her little one, probably for some transgression of bush law, until it cried as if broken-hearted.

Contrary to what one might think, the bears are very unsociable among themselves. It is extremely rare to find more than one in a tree, unless it be a very large tree. Even where they are fairly abundant they seem to prefer a solitary life.

Months ago a number were placed on an island for their better protection, and when visited later had scattered over the whole extent of the place, none being closer than 200 or 300 yards to another.



WITH WIND ASTERN, THE "ALTAÏR" PLUNGES AHEAD UNDER SQUARE SAIL.

When the wind is less favorable, the cutter rigging is employed (see illustration, page 377). Besides the captain and a Somali mate, the crew of the *Altaïr* consisted of seven Danakil and one Sudanese—all expert seamen (see text, page 367), and all deferential and courteous to the American woman and author, their guest.

SAILING FORBIDDEN COASTS

By Ida Treat

Author of "Pearls, Arms, and Harlots"

With Illustrations from Photographs by the Author

"YOU will never get permission to touch anywhere on the Dankali coast. With the exception of Obock, perhaps, it has been taboo for years."

"But that is where I want to go," I protested.

The master of the *Altaïr* smiled quizzically.

"And that is where I intend to take you. Only you will have to travel as contraband. If you were a man, it would not be so easy. Already here in Djibouti you would have had several large-footed and mustached gentlemen prying into your affairs. But they are not used to ladies embarking on any such wild cruise. For the comforts of the *Altaïr*—!" He grinned. "It is no private yacht! So don't worry. You will slip through the hands of my official countrymen like a letter in the mail."

As he spoke, the little car chugged sturdily south over the hard red earth of the desert. We had left the lights of Djibouti behind us—the European town with its white façades and empty avenues, and the crowded Bender Djeddid, humming with life in the stagnant heat and smelling of incense, wood smoke, and goats.

WHY THE DANKALI COAST IS TABOO

Before us, the Somali coast stretched south and east along the Indian Ocean, and rose to the right in a long incline toward the heights of Ethiopia. At the "oasis," with its burnt gardens among spiky palms, we had left the trail leading to Zeila, and for an hour we had rolled through the bush, zigzagging among stones and scrub mimosa, tilting across waves of hard-packed sand, and all the while following the sea that glowed dimly in the blackness at our left under a sky spangled with stars.

"Why is the Dankali coast taboo?" I asked.

"Oh, for a lot of reasons. Chiefly because the Danakil have a deep-rooted aversion to white skins. And a nervous hand on the trigger. They have never taken kindly to colonizing. And, given the climate and the country—a sizzling desert, if ever there was one—the French have never made a very serious attempt to turn them into docile colonials.

"Djibouti is important merely as the terminus of the Franco-Ethiopian Railway and the only seaport for Ethiopia. As for the Dankali country, it serves as a convenient hinterland; it keeps the Italians out of harm's way up in Eritrea.

"The Residence at Djibouti maintains a species of armed truce with the Danakil—a you-leave-me-alone-and-I-won't-bother-you sort of agreement. That's why the Government at Djibouti isn't keen on letting any white man wander off into the Dankali bush. In case he should meet with a stray bullet, there would have to be reprisals, punitive measures, and a lot of unnecessary trouble stirred up all around."

"But you? After all, you have a white skin."

"*Si peu.*" The master of the *Altaïr* gave a short laugh. "I am one of the dark family, so to speak. I have sailed with the Danakil for years. For that matter—" He broke off abruptly as the car, with a grinding shock and a whir of tires, settled to a standstill, sunk to the hubs in wet sand. My companion swore lustily.

"Any idiot would have kept off that crust of salt. Well, we're stuck and no mistake."

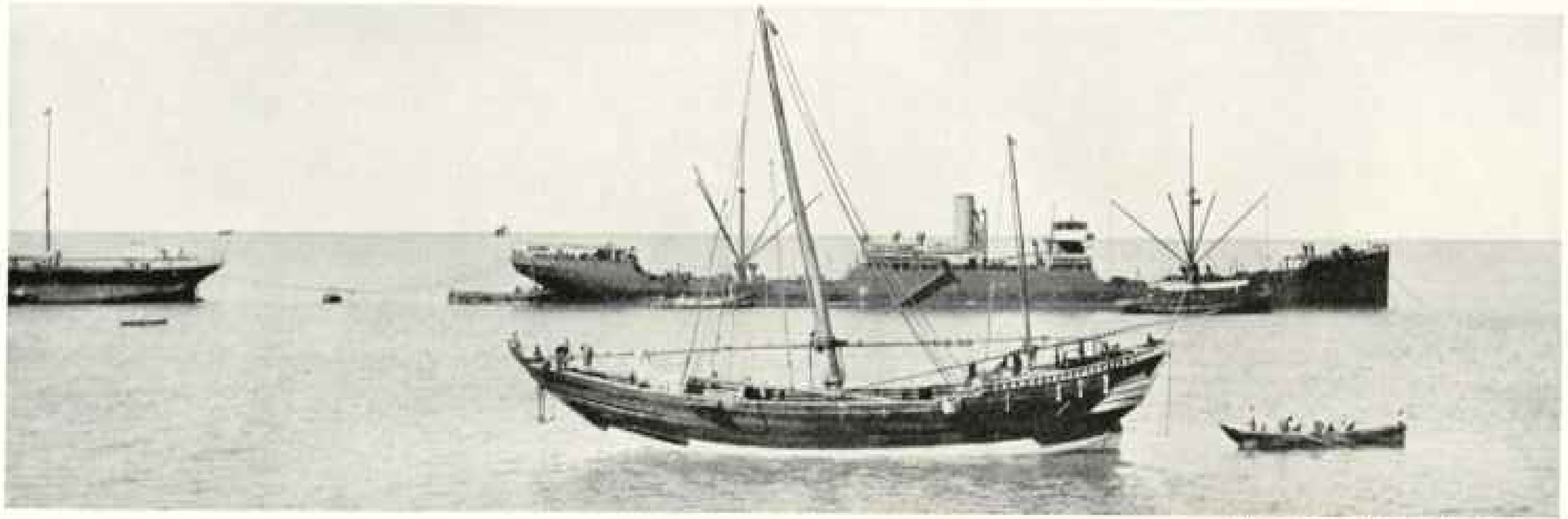
"And we were to sail at midnight," I murmured.

"We *are* to sail," the Frenchman corrected. "It is only 10 o'clock. Come on, we'll find some one."

THIRTY STRAINING BLACKS TO RESCUE

He strode confidently through the darkness while I floundered after, wondering where in that black desert we were to find the aid he evoked with such assurance. We walked on and on, turning in circles I would have said, among bushes, all of which looked alike, and rocks which seemed identical. Suddenly my companion stopped.

"Voices," he said, lifting his hand. A light chatter drifted out of the night and a moment later thirty black forms



Photograph by Thomas Heyler, Jr.

THE ARAB DHOW HOLDS ITS OWN AS A CARGO CARRIER WITH THE MODERN FREIGHTER

The type of vessel which handles much of the coastal trade of the Red Sea and the Gulf of Aden usually has one mast with a lateen sail.

Photograph by Holmes from Galloway

AT DJIBOUTI THE FRENCH HAVE TRANSFORMED SANDY DESOLATION INTO A FULLY EQUIPPED MODERN PORT

Sea walls, harbor lights, wharves, warehouses, and machinery bear tribute to French energy and skill throughout the forty-odd years of the city's existence. The harbor is landlocked and capacious. A scene along the mole.

Photograph by Holmes from Galloway

FRENCH SOMALILAND'S CAPITAL IS POETICALLY TERMED "THE QUEEN OF THE SANDS"

From offshore Djibouti's whitewashed stone and mud buildings, piles of salt, blue sea water, and snowy beach sands sparkling in the sunlight make an attractive picture, but on shore the heat, flies, and fleas vie at times in creating human discomfort. The square before Hotel Continental, a modern hostelry, built to resist the intense heat.

Photograph by Holmes from Galloway

THE AMERICAN SEWING MACHINE MAKES SOME OF DJIBOUTI'S CLOTHES

This product, particularly the portable variety, has found its way all over the East, both in cities and in villages, and sometimes in nomad tents.

surrounded us, naked but for loin cloths and here and there a white rag draped over a shoulder. To my surprise, they greeted the Frenchman by name.

"Abd el Hai, salaam!"

They were wood-gatherers, out to cut firewood in the undevastated bush. Would they help us out of our predicament? *Marhaba!* And we set off again through the dark, Abd el Hai leading the way with an assured step. He brought us straight to the buried machine, by a miracle of land navigation.

Aya lá há!

Aya lá!

Thirty straining forms. One heave, two, and the little car rose out of its muddy bed. Then came an incident I shall not soon forget. In the light of the auto lamps, while the black men crowded about, the Frenchman took out his wallet. It was a fat wallet, padded with bank notes that showed blue and lavender in the hard light. Remember, we were miles from "civilization," unarmed, and ringed about with what any white observer would probably have called "half-naked savages."

From among the folded bills my companion selected three bits of blue paper and slipped the wallet back into his pocket. Would thirty francs suffice? Well, rather! Chorusing thanks and farewells, our rescuers trotted off in the darkness while my friend set the motor chugging again.

"One of the dark family," he had said. Already I understood.

BOUND FOR THE DANKALI COAST IN SAILOR DISGUISE

Djibouti to Obock, across the Gulf of Tadjoura, takes a night's sail, if the wind holds. Our boat, an 18-foot boutre, the little sister of the *Altaïr*, spread its lateen sail full overhead and slid out of the black harbor. We were loaded to the gunwales with provisions for the bigger boat, coils of rope, and tanikas of oil for the auxiliary Diesel, and we carried one passenger, neatly disguised in a sailor's outfit of rusty-red sailcloth topped incongruously by a turban. Somewhat superfluous, that disguise, I thought, as we had met only a handful of black men on the pier—fishers from the *sambuks* moored along the mole. However, it was well to be prudent, it appeared.

Photograph by Holmes from Galloway

BAGGAGE TRANSFER IN DJIBOUTI

The capital of French Somaliland is the only French port on the Suez Canal route to the Far East; it is also the base of the French railway to the capital of Ethiopia, over which most of the kingdom's exports and imports pass. Djibouti is likewise a coaling port and regular place of call for ships.

We had papers for Obock. Afterward, destination uncertain. Abd el Hai, when I inquired, gave a vague gesture that swept the horizon from Tadjoura Gulf to the eastern limits of Bab-el-Mandeb. It depended chiefly on the wind. For the moment it held.

Behind us, the lights of the coast disappeared. All about us, the wave crests rose and fell, tipped with phosphorescence. A hand dipped in the sea let fall a shower of silver drops. Beneath the rudder, a slanting ray of green light streamed down into the blackness below. The three Danakil—our crew—had stripped off their "city clothes" (the shirt worn flapping outside the close-wrapped *fouta*), and their bare torsos made dark triangles against the sail.

"*Djoch!*" (Luff!) The big yard climbed the mast, rotated around it, and we veered northeast. The lights of the twin islands, Maskali and Moucha, slid past to starboard; and ahead, the long white beam of the Ras Bir Light swept the horizon at regular intervals. Not a sound but the hiss of water along the keel and now and then a mighty splash, as a big skate flopped in the darkness off our bows.

At dawn we were in sight of the Dankali coast, a silvery white line, and behind it the lavender shadows of the Mabla Mountains. The wind dropped and we floated aimlessly, the sail hanging in lifeless folds from the yards. Our Danakil got out the oars, timing their stroke to a litanylike chant:

Benat' al Bérbera . . . Benat' al Bérbera.
Reh chamálo . . . Reh chamálo.
Reh halbár . . . Reh halbár.
(The girls of Berbera.
A north wind.
A land wind.)

To the rhythm of the song, we moved slowly over the glassy water. By 8 o'clock we rounded the reef at Obock and entered the little bay where the *Altaïr*, a 15-ton sailboat, built like an Arab and rigged like a cutter, rode at anchor (see page 377).

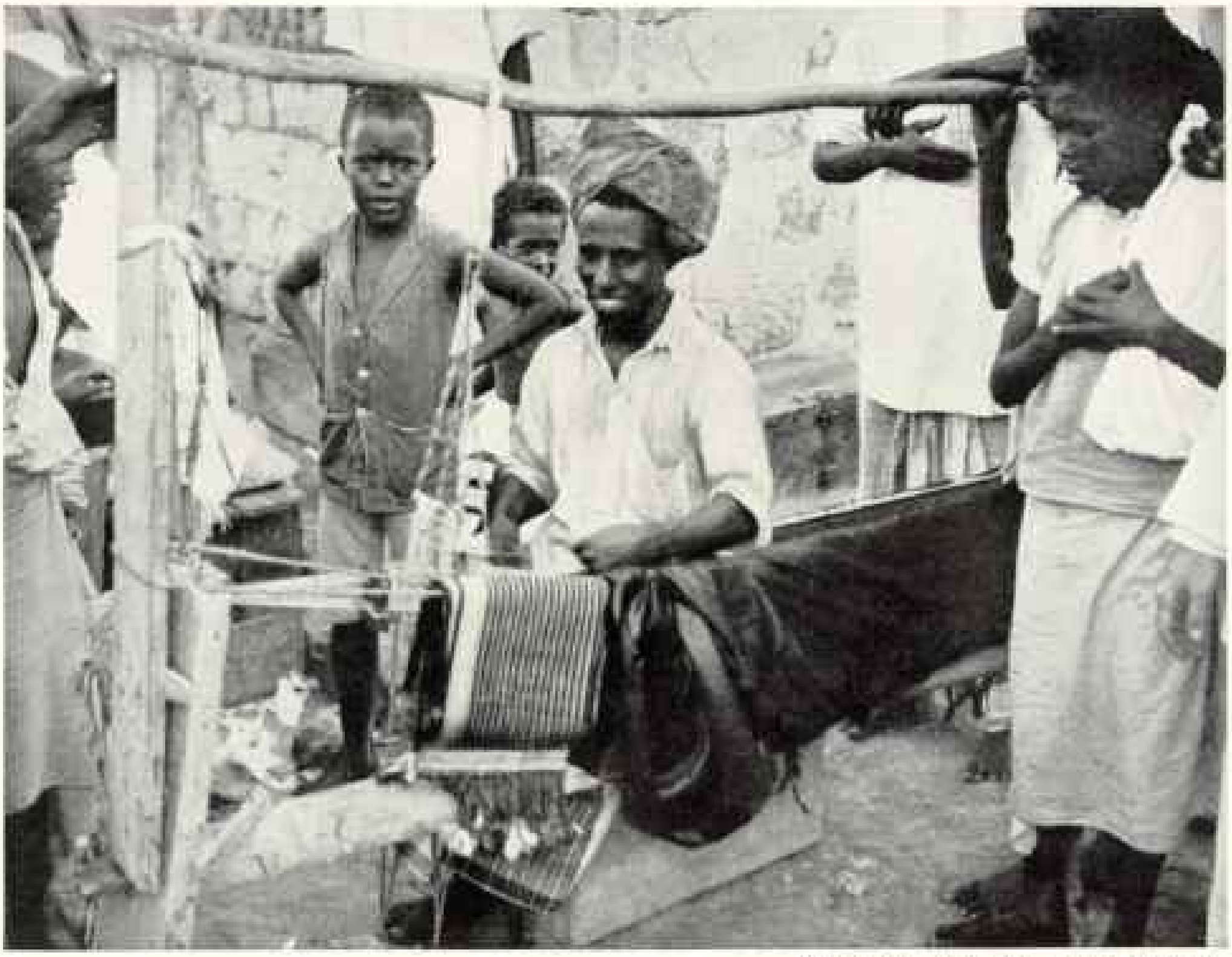
OBOCK, ONCE A CAPITAL, TO-DAY A RUIN

Obock, formerly the capital of French Somaliland (the capital shifted to Djibouti

Photograph by Ewing Galloway

MAKING MUSIC WHEREVER HE GOES

A native harp, part of a street orchestra in Djibouti. In this region most of the natives associate music and song with every emotion and task.



Photograph by Holmes from Galloway

THE WEAVER IS BOTH MANUFACTURER AND MERCHANT

His wool scarfs are evidently made for foreign consumption, because in Djibouti, which is near the Equator, the resident does not need anything calculated to keep him warm.

when the Franco-Ethiopian Railway was built), is to-day a ruin—the European part of it, at least, with only two buildings still intact, the house of the master of the *Attaïr* and a bare white cube that shelters a French sergeant and a handful of Somali soldiers, sole representatives of colonial France.

But the native village still stands—clustering huts of woven branches covered with palm-fiber mats and, dotting the sand in the near distance, the domelike shelters of the people of the bush, rusty with smoke, very similar in form and color to the termite mounds of the desert.

The beach that morning was peopled with brown bodies; prostrate figures engaged in prayers and ablutions; others cleaning the night's catch of fish; and still others washing their foutas—a simple operation which consisted in slapping the water energetically with that simple garment. A stone diver and his helper were loading a sambuk with rocks from the bottom, accompanying their work to the inevitable chant, monotonous and melancholy:

El láy a din; el-lay-a-din!
El láy a din; el-lay-a-din!

Close to the water's edge a group of ship's carpenters hammered away at the skeleton of a boat. Over by the busy fishers several dogs sat on their haunches waiting for the feast of offal, but keeping prudently out of range, well aware that to approach a man means death for a dog, in a Mohammedan country.

Fish, I learned later, forms the chief article of diet at Obock and the other coast villages, for in the burnt desert nothing grows. Fish and occasionally rice and dates, the first cargoes of the season, had begun to arrive from the Persian Gulf. In the bush the fare is even simpler—goat's milk and, on feast days, a broiled gazelle brought down by a sling shot or a dart.

Drawn by Newman Bumstead

A MAP OF FRENCH SOMALILAND

Of the 3,290,260 square miles of territory held by France in Africa, French Somaliland has an area of about 5,800 square miles and a population of 86,000. Its position at the entrance to the Red Sea gives it strategic importance.

Cartridges, I was told, were reserved for more important uses.

DANAKIL SUGGEST DESCENT FROM DWELLERS OF ANCIENT EGYPT

Lean almost to the point of emaciation (and no wonder), were the Danakil from the bush, whom I first saw striding through the streets of Obock, a curved knife buckled at the waist, carrying staff and *guerba*—the leather water jar—and wearing sandals of the bush, thick leather soles curved up at the side and tip and held in place by a thong over the second toe and another about the ankle. Tall fellows, splendidly built, with finely cut features and long, curling hair. "Black Semites" they have been called; and surely the general appearance of the Danakil, in whom little if anything recalls the negroid, might well indicate a close relationship with the dwellers of ancient Egypt. In their manner, a proud reserve and a dignity that made me think of the "noble redskins" of America as pictured by James Fenimore Cooper (see, also, pages 360, 383).

As we left the dugout in which we had paddled ashore, a tall Dankali, white-bearded, draped in a spotless *chamma*, and wearing about his neck a string of Mohammedan prayer beads, strode toward us across the sand. He offered his hand first to the master of the *Altair* and afterward to our crew of three, who kissed it with every appearance of respect.

"Sheik Issa, one of the great men of the coast," Abd el Hai told me. We were to meet him again later (see pages 385-6).

As in Djibouti, at that time rigorously quarantined, the black smallpox was ravaging Obock. Daily it counted new cases, though no one seemed particularly perturbed. "If Allah wills you to die, you will die. *Inshallah!*" seemed to be the general attitude. When anyone came down with the disease, he was hustled off to one of a group of huts half a mile distant from the town and left there to die or recover, as Allah had intended.

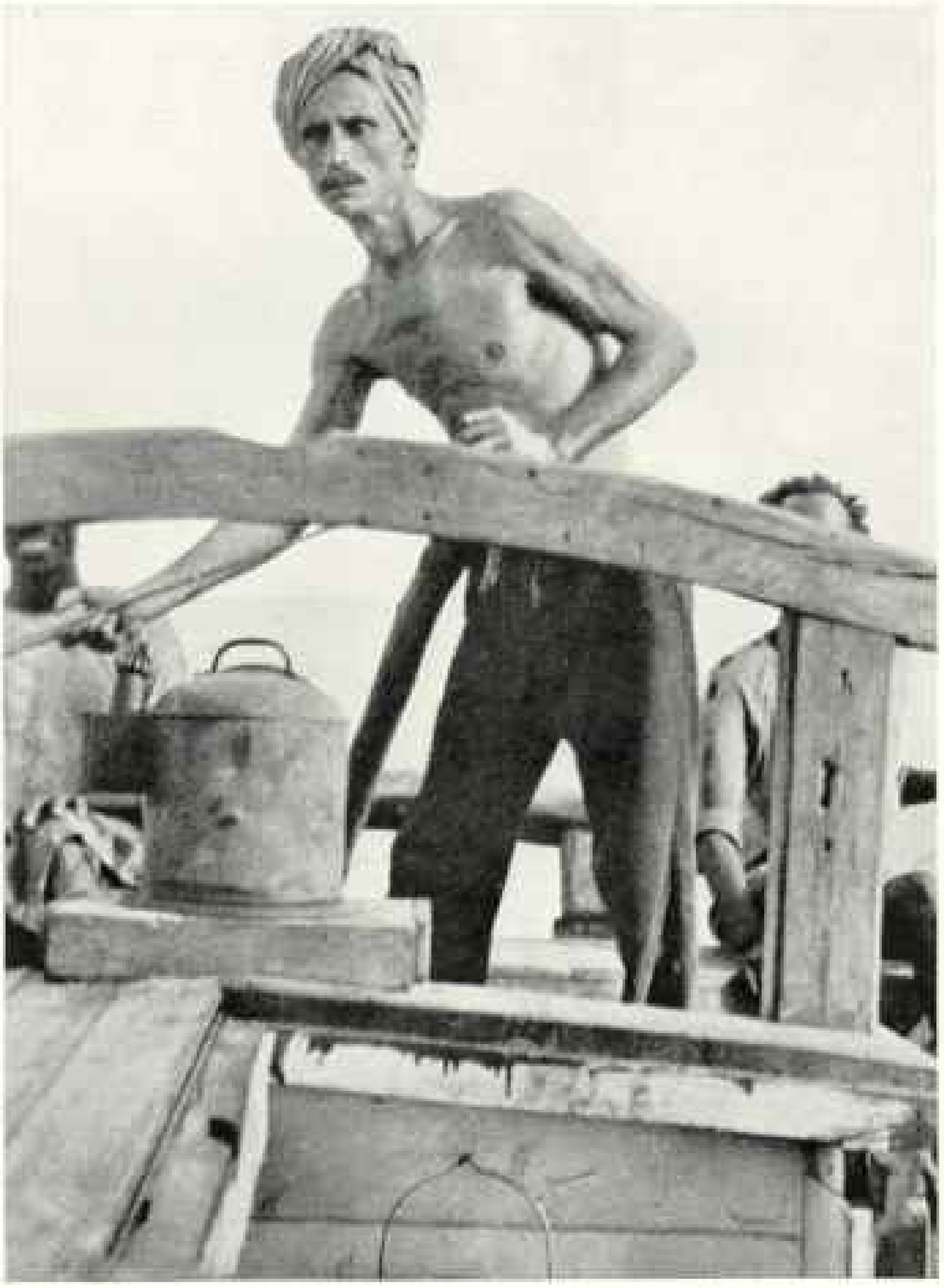
An old woman supplied the sufferers with food and gave them proper (!) care, which consisted in scraping their sores with a piece of glass, which the aged nurse afterward wiped on a rag—with appropriate prayers—and threw into the sea.

All day long the dugout traveled back and forth from the beach, carrying provisions for the *Altair*—sugar, rice, coffee, and dates; dourah for the crew; and one precious item, a case of leeks, our only green vegetable, brought down from the Ethiopian plateau, carefully bedded in damp sand. For meat, we would rely on fisherman's luck and our five rifles. The latter, I was assured, were destined solely for game-shooting. We would have no other use for them, not on the Dankali coast at least; though if we pushed our cruise as far as Arabia, they might come in handy. . . .

A HENNA MANICURE FOR TOE AND FINGER NAILS

By evening all was ready. There remained only one errand, and that concerned myself. Oudini, the Dankali caretaker of the house at Obock, after a mysterious conversation with the master of the *Altaïr*, signified with gestures and grins that I was to accompany him.

We crossed the town, following the main street, past open-air cafés and dark little shops that sold spices, dourah, and tobacco. Old women squatted on the sand



THE MASTER OF THE "ALTAÏR"

For years this adventurous Frenchman came and went among the Danakil. They accepted him as one of themselves, chiefly because he respected their ways and dealt with them scrupulously. Although a convert to Mohammedanism, he did not always wear the turban, for, like the natives, he rubbed butter in his hair as a protection against the sun and therefore was enabled to go about bareheaded without danger of being blistered (see text, page 381).

weaving baskets, and young girls stared at us through a cloud of hair and squealed and rushed indoors like startled wild things.

Beyond the town, we crossed the sand to a group of huts perched on a dune. The Dankali pushed open a door in a high wall and we entered a little court occupied by a goat, a fire of driftwood, and a bed-frame corded with ropes of palm fiber.

A woman greeted us from the doorway of the hut. A close-fitting Arab shirt fell to her ankles, but her headdress was that of the Dankali women—a square of dark-blue cotton folded in a rectangle and worn like a plate or a hinged board flat on her closely braided hair. She invited me to sit on the bed-frame, offered us a spicy beverage in handleless cups of thick green pottery; and while I sipped this, Cadiguetta—for that was her name—knelt at my feet and painted toe and finger nails and the palms of my hands a deep henna red. That done, she brought from the dark interior of the hut an Arab dress—beaded headband, scarf of silky-stiff blue linen shot with gold, and a sack-like gown heavily embroidered with silver thread. The two Danakil were for my trying the effect at once and parading my splendor back through Obock, but I declined, thinking it might be unwise to take the entire town into the secret of the metamorphosis (see page 368).

"That is in case we go ashore at Tadjoura," the master of the *Altaïr* explained. "Not even I would care to land there with a European. In that costume you will shock no one. They will take you for an Arab, a fitting companion for a Mohammedan of my importance."

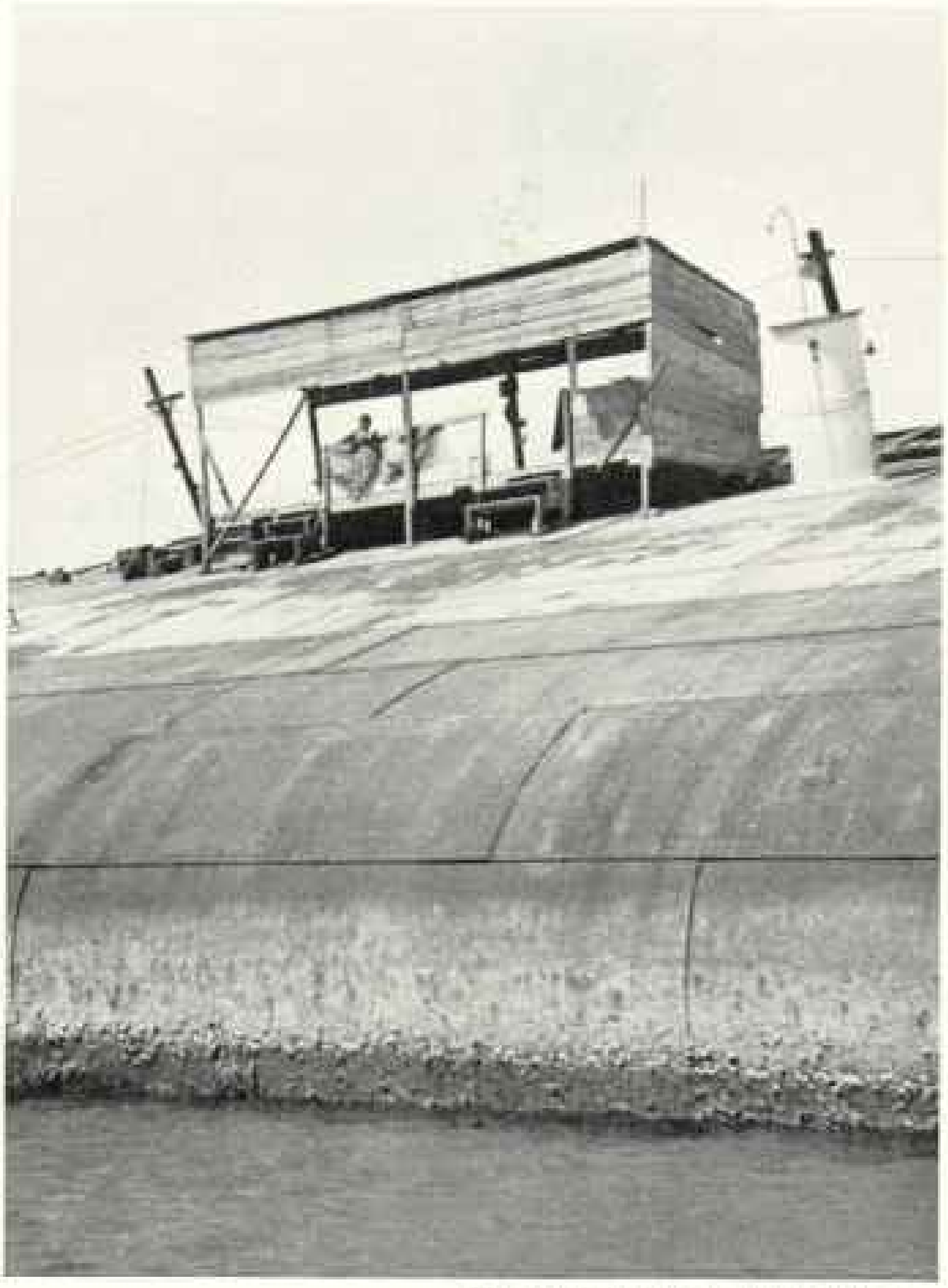
"But I won't have to wear it on the *Altaïr?*"

The captain gave a short laugh.

"Wait until you see the *Altaïr,*" he prophesied.

ON BOARD THE "ALTAÏR"

After nightfall I went aboard in the last dugout, piled with all the things that had



Photograph by Holmes from Galloway

A WATER "SQUATTER" AT DJIBOUTI

This native has built his shack on the side of a wrecked steamship in the harbor.

been forgotten—a pottery water jar, an extra anchor chain, a grass mattress, and a roll of blankets. At the last minute Chódo, the cook, contributed a big tin tanika—the oven for baking our bread—another use for the convenient 5-gallon oil tin, as indispensable as food and water to life in the Near East.

Chódo climbed atop the mattress and we balanced ourselves as best we could in the unsteady craft, while the stroke of two paddles carried us out toward the *Altaïr*, its rigging black against the luminous night sky.

As we bumped gently alongside, six black arms lifted me bodily on board; and the dugout, emptied of its freight, was hoisted after. On deck there was plenty of animation. A dozen dark shapes padded about, busy with the sail; the boy Aden, like a naked black imp, hovered about the *monfa*—the barrel-like oven for baking dourah bread (see page 385); the cook's fire crackled in a kennel-like fireplace attached by cables to the bulwarks; and a yellow glow streamed from the hatch amidships, where the master of the *Altaïr* and the Somali mate—in the roar of two blowtorches and a swirl of strong language—were heating the cylinders of the Diesel. That convenient engine served merely to swing us about the reef reaching across the harbor of Obock like a breakwater. It performed its task efficiently enough, sending up clouds of evil-smelling smoke and filling the night with shocks and thumpings.

Beyond the reef, the motor gave an expiring cough. The two engineers, white and black, streaked with oil and streaming with sweat, clambered out of the suffocating hold; Chódo distributed refreshing cups of coffee; the sail spread its big square overhead; and we lay rocking in the swell, waiting for the wind.

DAYBREAK ON THE GULF OF ADEN

"Not much hope for a breeze before dawn. In the meantime, I'm going to turn in." The master of the ship disappeared down the ladder into his cubbylike cabin. A sailor spread a grass mattress for me aft, in the narrow deck space between the cabin roof and the bulwarks. Above my head a second figure crouched on the steer-

ing bench, the tiller between his knees—a turbaned statue black against the stars.

The creaking of the boom and a familiar voice giving sharp commands in Arabic wakened me. We were under way. In the half light, I made out the master of the *Altaïr*, one foot on the steering bench, his body braced against the bar. He had discarded European clothes and was wearing the costume of the coast—torso bare and a fouta wrapped tight about the loins (see page 365). In the bow, the cook's fire flamed yellow. Beside it, Aden, the boy, was preparing the day's provision of firewood, accompanying each crash of splintering wood with the customary cry, to show that it was not the rigging that had given way.

Over in the east the sky grew gold. A disk of metal slid up from the horizon. The lines of the *Altaïr* lost their vagueness and stood out distinct against the blue overhead and the paler blue of the morning sea. As its master had said, the *Altaïr* was no yacht, but a 40-foot sambuk, sturdily built of Indian teak, with the after-deck—the skipper's quarters—raised a foot or two above the rest. Nothing gleaming white about that deck—a coating of fish oil, spread to protect the planks from the blistering sun, had in time formed a dark crust, gummy in spots, but for the most part so slippery that only bare feet could cling to it in safety. Prudently I discarded my sandals.

Abdi, the Somali mate, lean and black, with shrewd, fine features always puckered in a smile, seven sailors, and the boy formed the crew. Seven Danakil and one Sudanese, expert seamen all of them, from Kassem, the slender Arabian Nights' prince I had seen the evening before at the tiller, to stalwart Hamid Baket, the Sudanese.

Photograph by Ewing Galloway

LIVELY STEPPING IN BLAZING SUNSHINE

These street dancers, going into action at Djibouti, pay little attention to the heat, though French colonials consider the town one of the hottest spots on the globe.

CAPTURING A PORPOISE

Every man of them had begun his career on the sea as pearl diver. All were of the coast with the exception of Moussa, a young Dankali from the Mabla, whose front teeth were filed in sharp points—an effect not so ugly as one might imagine, but which made one remember the legend current among Europeans, that the Dana-

THE AUTHOR'S SHORE-GOING COSTUME AT TADJOURA

She wore a sacklike gown, beaded headband, and linen scarf, an Arab costume being deemed necessary in order not to arouse the suspicions of the Danakil, who have a deep-rooted aversion to whites (see, also, text, pages 357, 365, and 385).

kil formerly (and perhaps even now in secret) had a predilection for human flesh!

Her canvas taut, the *Altaïr* skimmed through the morning wind toward the Gulf of Tadjoura. Out by the horizon, a host of triangular black fins pricked the surface and dozens of dark bodies flashed in gleaming arcs above the water. *Abou Salaam* (He-who-says-good-morning)—the porpoises. They headed toward us in an immense triangle, leaping and splashing. In a few minutes they were all about us, darting past, swift as torpedoes, diving under the keel, dashing ahead just where the prow cut the wave.

A rifle gleamed at my elbow. "Watch Abdi," came the voice of the *Altaïr's* captain. The Somali crouched on the low bulwarks, the end of a rope in his hand. There was a sharp report. In a flash Abdi dived overboard, carrying the rope. An instant later, while the steersman brought the boat about, I made out his dark body thrown here and there, alongside a threshing, struggling mass in a circle of pinkish foam.

"Pull!" he shouted from the water. "*Obess!*" (Harder still!) The men then dragged the porpoise, still quivering, a rope about its body, to the deck, while Abdi clambered after.

"That is the only way to bring one aboard. Otherwise they sink like stones," the Frenchman explained.

A red pool spread on the deck. Abdi dipped his hands in the blood, rubbed his breast, arms, and legs with it, and dived overboard again.

"The blood of Abou Salaam makes you young. Abdi is getting old." (He was perhaps forty.) This from Ibrahim, a Danakil sailor, already at work slitting the tough hide of the porpoise.

An hour later the forward deck was festooned with strips of dark-red flesh hung to dry in the sun. The death of the porpoise had not been, as I first thought, merely for sport. It meant meat for the crew. Ibrahim cut open the animal's stomach, hoping to find freshly swallowed calamaries, a great delicacy, he assured me. But we had killed Abou Salaam too late in the morning. The squid were already partially digested. They could only be used for bait.

As we approached Ras Ali, the cape at the northern entrance of the gulf, the *Altaïr* set in close to the coast reef, marked by a vivid streak of apple-green. The best fishing grounds always lie near a reef, the open water being the hunting ground for bigger monsters than we might hope to catch.

DANAKIL SPRING OVERBOARD TO LAND A CATCH

Belil, the oldest member of the crew, got out the tackle—a steel hook a foot

long, of the thickness of heavy wire, with a four-inch barb, and a stout cord nearly as big as a little finger. This we trailed from the stern of the *Altaïr*, baited with a strip of squid. Barely a minute after Belil had thrown it overboard, the line strained taut. A yell from the fisherman, and two Danakil sprang to aid him.

Hauling with all their might, they brought in a big silvery fish nearly four feet long, thick as the body of a boy, with an enormous mouth studded with savage teeth. It flopped dangerously about the deck until one of the men dispatched it with a blow from an iron bar. While Ibrahim cut the fish in chunks to be boiled with rice for our lunch, Belil put away the tackle. Fishing in these waters is poor sport; it lacks the element of uncertainty, as banal as going to the butcher's.

Leaving the north shore of the gulf, we took a long tack toward the opposite coast that rose out of the sea, a long black wall powdered over with scrub mimosa like a fine green dust. By that time the sun had climbed the sky and blazed down straight overhead. The sail gave no more shade. The men spread strips of sailcloth across the boom, beneath which we sat and panted. The wind had dropped. The *Altaïr* lay as if at anchor on a lake of metal. I suggested a swim, but the ship's master advised against it.

"Too many sharks. The gulf here is larded with them."

As a compromise, Ibrahim emptied a 5-gallon tanika of sea water over my head. A warm bath but refreshing. In ten minutes or so, when my sailcloth costume was completely dried through, he repeated the operation.

THE LEGEND OF THE STUPID SUDANESE

Suddenly Abdi, who sat stoically at the tiller, ripped off his turban and plunged overboard.

"*F'in lokham?*" ("Where is the shark?"), I called to him as he swam to the surface.

"I'm going down to see!" Abdi grinned and dived out of sight.

Ibrahim, who stood beside me, muttered a phrase in the Dankali tongue, which the master translated.

"He says the lokham is in the shadow of the boat, keeping cool. As in one of the stories of the 'stupid Sudanese' that the Danakil like to tell. One day a sambuk of fishers, all Sudanese but one, lay becalmed in such heat as we have to-day. The cook, being the fattest, complained the most. 'Why don't you go down where it is cool?' the Dankali asked him, pointing down to the shadow of the boat. 'Only you'll have to tie something heavy about you, or you will float right up in the sun again.'

"So the cook tied the *metana* (the stone for grinding dourah) about his neck and jumped overboard. Naturally he didn't come up. 'You see,' said the Dankali, 'I

A DANKALI OF THE BUSH

He wears a curved knife buckled at the waist and sandals with thick leather soles curved up at the side and tip (see text, page 364).

THE "ALTAÏR" APPROACHES THE FORBIDDEN COASTS

French Somaliland's 180-mile coastline runs around the Gulf of Tadjoura, from the southern shore of the Gulf of Aden to the dangerous Strait of Bab-el-Mandeb, the Arabs' "Gate of Tears." The north shore of the Gulf of Tadjoura, where the hostile Danakil live, is mountainous in places, with cliffs from 100 to 400 feet high.

was right. It is so nice and cool down there, the cook is in no hurry to come back again.' *'He-ep! He-ep!'* admired the Sudanese. 'What a clever fellow you are!' And all hastened to follow the cook's example. Probably they found it pleasant down below, for none of them took the trouble to come back to the sambuk!"

Abdi, however, was no "stupid Sudanese." In two or three minutes his cropped head showed at the surface and he swung himself up the rope to the deck. In one hand he carried what looked like a spidery bush, black and bare of leaves—black coral. He had gone down to take a look at the bottom, he explained. The younger members of the crew seized the pliant black twigs with enthusiasm and set to work making bracelets, fastening coils of the coral together with bits of brass wire unwound from the hilts of their curved Dankali knives.

All at once Ibrahim, who all the time had squatted on the low rail, his eyes fixed on the water below, gave a sharp cry.

"Lokham!" he called triumphantly. A pale shadow flashed past along the keel. Another and another. Torpedolike things, nine feet long perhaps, though in the water they appeared much bigger. That sight removed my last shred of enthusiasm for sea bathing.

CREW IS INDIFFERENT TO SHARK MENACE

"Us the lokham cannot see," Abdi remarked maliciously. "But *you*, so white, you would be like the Ras Bir under water!" And he went off into peals of laughter.

With the exception of Ibrahim, who was temporarily shark-shy (his fellow diver only a few weeks before had been snapped up by a big man-eater), the whole crew showed a marked indifference to sharks. They swam in all waters whenever the chance offered, Abdi insisting that the lokham was a timid and cowardly creature, not to be feared by a vigorous swimmer.

"He turns round and round you and never dares come near. But if you float too long or if you are tired—oop! He snaps off an arm or a leg to see how you take it. And *if you don't mind*, he comes back for more!"

I limited my swims to shallows, nine feet or less of water, where the crew assured me the lokham never came. And even there I took care to swim where I could see a bottom of white sand. In black water, in spite of a protecting guard of Danakil splashing in a circle about me, I never could avoid the dread that there might come a swift rush from below, and every time I climbed safely back to the deck of the *Altaïr* it was with a feeling of thankfulness that this time the lokham had not got me!

The first night out from Obock, we moored in the lee of a cape on the south shore of the gulf. The men slid the dugout into the sea and Kassem paddled me across to a strip of glistening sand that bordered the cliff. One of the rifles went with us, for this was Issa country and the Issas and the Danakil have quarreled for centuries along the vague frontier that separates the tribes. When an Issa meets a Dankali unarmed, he kills him on sight, Kassem told me, adding a precise and shocking description of the type of mutilation that follows the killing. Dankali women meet the same fate, he assured me, with special refinements if the victim happens to be pregnant.

"And you, if you met an Issa?" I inquired. Gentle Kassem, the Arabian Nights' prince, gave a savage smile and flourished his big curved knife significantly.

"The Issas are all devils," he replied succinctly.

ADDI, IBRAHIM, AND "ABOU SALAAM"

The Somali mate (left) first shot the porpoise, "He-who-says-good-morning," then dived overboard with a rope to put around its body and bring it on board. Otherwise, it would have sunk like a stone (see text, page 368). The capture of the porpoise meant meat for the crew.

While Kassem and his rifle dodged among the mimosa bushes hunting for sea birds' eggs on the sand, I strolled along the beach strewn with rainbow-colored shells—big pink conchs, pearly sea snails, and twigs of red and white coral.

Armies of hermit crabs, like shoals of moving pebbles, slid along the hard sand by the water's edge; and little spirit crabs—green, yellow, and rose pink—pattered sidewise on absurdly long legs. A shout from Kassem brought me back to the dugout. He had gathered a dozen eggs in a fold of his fouta. When we had covered half the distance out toward the *Altaïr*,

A STREET IN TADJOURA, CAPITAL OF THE DANAKIL

The town lies at the foot of the Mabla Mountains, on the northern side of the Gulf of Tadjoura, an inlet which penetrates deeply into the French Somaliland coast. White cubes and arcades of the Arab-style houses rub elbows with brush huts (see, also, text, page 375). Europeans are, as a rule, unwelcome here, having incurred the hatred of the Danakil, who have been slave merchants from time immemorial, and who resented interference with that trade. Formerly Tadjoura was one of the main shipping ports for slaves destined for Arabia and Persia.

he laid the paddle across his knees and pointed back toward the cliff. Two little figures showed black against the sky, Issas armed with the customary lance and round shield of hippopotamus hide.

"You ran no danger, of course," the master of the *Altaïr* reassured me, "though it is just as well to avoid such encounters. Had you not been there, Kassem might have felt tempted to try out the range of his rifle."

DIVERS GO DOWN WITH THE ANCHOR TO FASTEN IT

At its western end, the Gulf of Tadjoura finishes in a craterlike basin—Ghubbet Kharab (Hell's Mouth)—that lies like a mountain lake in a circle of black peaks. Two islands rise out of it, immense cones, yellow as sulphur—the only color in the black landscape—their flanks of hardened lava and volcanic mud cut in a thousand fantastic shapes. A desolate spot, chaotic, as if it had been cast up only yesterday by some gigantic cataclysm; and, according to our Danakil, infested with evil jinn.

Jinn may have been responsible for the violent gust that caught us as we swung about the larger of the islands (appropriately named the Ile du Diable). It swamped the dugout which we trailed in tow and jammed the yard of the auxiliary square sail against the mainmast, with a crash of splintered wood and a sharp rip of torn canvas.

For a moment, the deck of the *Altaïr* hummed: black bodies flashed here and there, arms pulled and strained, and the commands shouted from the stern, where the master, one foot against the bar, gripped the tiller rope, echoed from the rock, magnified as by a giant megaphone.

In a moment it was all over, the dugout rescued, the square sail brought safely to the deck, while Kassem, who had gone aloft to examine the mainsail yard, brought down the reassuring news that the damage was slight and easily repaired. Half an hour later, we lay at anchor at the far end of the Ghubbet.

Placing the anchor was an odd bit of business, which I was to see repeated more than once, when we lay over a sandy bottom where the anchor risked dragging. Abdi and Kassem accompanied the anchor overboard. From the deck we could see

DANAKIL KEEP THEIR HUTS AND COURTYARDS CLEAN AS A BEACH

Inside or outside, there is none of the litter and refuse to be seen in many towns and cities of the Near and Far East. Surrounding each hut is a fence, or *zareba*.

them *walking* below, held to the bottom by the weight of the iron. When the anchor was securely in place, they swam up to the surface.

But the jinn of the Ghubbet were not yet satisfied. In the middle of the night the anchor dragged, and it took nearly an hour's work before it was wedged firmly between the rocks—so firmly, in fact, that in the morning our two amphibians had to go below again with a crowbar to pry it loose.

AN EXCURSION ASHORE

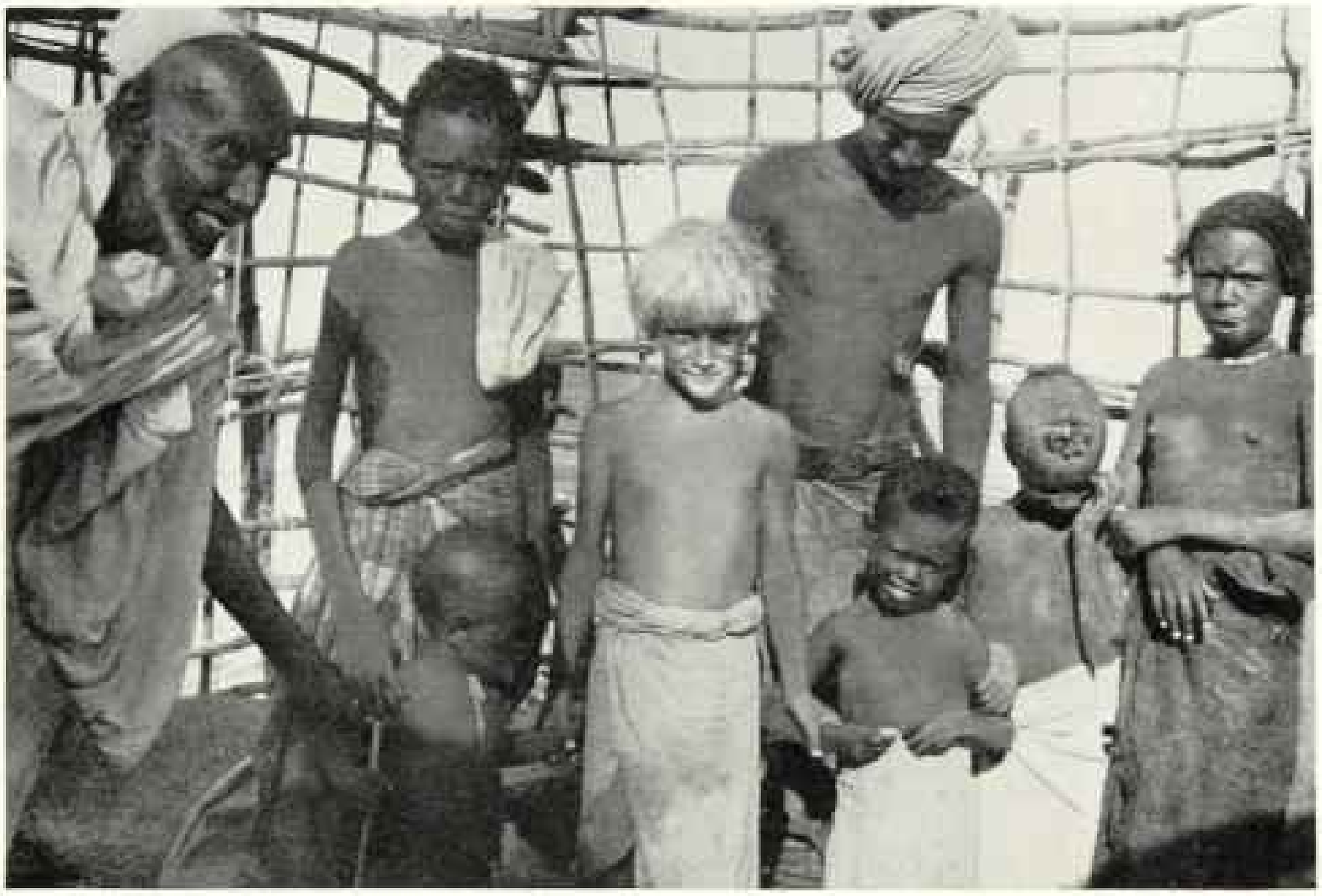
We lay off a strip of sand, the only beach of the Ghubbet. Everywhere else its shore was bordered by what looked like crusts of black asphalt, cracked into slabs and standing at all angles, as if an immense floor had been blown up by a subterranean explosion. Here and there, on level ledges by the water, piles of iridescent small pearl oyster shells marked the spot where pearl divers had landed to open their catch.

I tried fishing of a humbler sort, with casting rod and line, from one of those same ledges, and brought up a few butterfly fish, marvelously hued, but for the most part I succeeded merely in catching my tackle in the sharp rocks under water. Each time, Kassem obligingly dived to dislodge the hook. A precious aid for the amateur fisherman, a Dankali diver, and tremendously saving of tackle!

Long before sun-up the next morning, four of us went ashore—the master of the *Altaïr*, Abdi with the rifle, Kassem carrying the water jar, and I wearing a mammoth turban (Abd el Hai refused categorically to land with anyone topped by a sun helmet) and a big, curved knife called a *djambia* buckled horizontally at the waist, so long that its brass hilt and sheath interfered with my arms as I walked.

We climbed a sandy trail along the flank of one of the peaks and soon the *Altaïr* lay far below us, like a fly on a black-rimmed mirror.

The droppings of camel and gazelle dotted the sand, but of the animals themselves, tame and wild, we saw no sign. But a strange smell hung about the mimosa clumps and oozed from between the rocks, a smell I had always associated before with zoos and circuses—the smell of the bush and the jackal and the panther, its unseen inhabitants.



INSIDE THE FRAMEWORK OF A NATIVE HUT

On the "Eastern Horn of Africa," under the French tricolor, live Danakil, Somalis, Gallas, Arabs, East Indians, and other races. Since the French avoid interference whenever possible in tribal customs and religion, relations between Europeans and natives are usually peaceful. Note the rosettelike topknot of the second child from the right (see, also, illustration on opposite page).

Climbing steadily, we reached a bare region of sand and rock where even the mimosa no longer found a foothold. To the left, hundreds of feet below, in a deep pocket, lay a curiously crackled plain—a lake of dried volcanic mud—and all about us, heaped in chaotic masses, lava, rock, and ash—a congealed eruption. Instinctively one looked for the active crater, but the only flame visible blazed down from the sky overhead, and the hot blast that stung and suffocated was the desert wind sweeping over the dead landscape.

"THE FIRST WHITE WOMAN TO LOOK DOWN ON LAKE ASSAL."

Stopping every few yards for breath, we reached the pass. Before the horizon that opened inland, one had the feeling of looking down on an uninhabited world, another planet seared with fire, or the earth after the final cataclysm. Peak and plateau and, far below, a stretch of blue water, the great salt lake Assal, with its beaches of glistening crystals, lying in a ring of black cones like a jewel guarded by dragons.

"You are doubtless the first white woman to look down on that." The voice of Abd el Haï came like a shock in the tremendous silence. It was as if a jinni had spoken.

But there were other creatures besides ourselves in that rocky wilderness. A gun-barrel gleamed as Abdi lifted the rifle to his shoulder. Following his aim, I discovered, not more than a hundred yards away, two gazelles—tawny, graceful animals—poised motionless. Abdi's finger pressed the trigger. A dull click followed. The Somali lowered the rifle with a shamefaced grin. It was not loaded and he had forgotten the cartridges.

But something had startled the gazelles. A bound into the air and they soared away. No other word could adequately describe that flight, for their swift limbs were invisible and their bodies seemed to float. At the same time Kassem pointed a slim arm to a distant slope on which his keen eyes had made out a group of pale

MEMBERS OF FRANCE'S AFRICAN EMPIRE

Geographies of the future may have much more to tell about the natives and the country of French Somaliland. The coastal region and its people are fairly well known, as is that around the Franco-Ethiopian Railway and Lake Assal; but there is a great deal yet to be learned about the interesting groups in other sections of the colony.

lumps—camels; a caravan from the hills, on the way to Tadjoura, was camping there for the day.

WE ENTER TADJOURA, THE DANKALI CAPITAL

We, too, were on our way to Tadjoura. From the Ghubbet we followed the Dankali shore of the gulf, less forbidding than the Issa side. A broad plain, dotted with mimosas, big as olive trees, led up toward the distant Mabla.

From time to time we made out among the green a glistening jet dot in a cluster of white ones—Dankali shepherds with flocks of goats. Here and there along the shore, a bouquet of palms shaded an oasis, with groups of young camels crouched, cooling their bellies in the water.

Long before we reached it, the Dankali capital showed a distant white strip along the gulf. We dropped anchor at sunset. A row of sambuks, their bows painted with stripes of green, black, and white, lay beached on the sand. Beyond them the white cubes and arcades of houses built in the Arab style rose against the hill, and to our right the ogival roofs of brush huts crowded close together, each with its high fence of branches and palm mats.

The master of the *Allair* draped his bare shoulders in a channma, I put on a stiff Arab gown, and Abdi and Kassem paddled us ashore.

"La Illaha illa Allah!" The call of the muezzin from the mosque echoed across the water. Crossing the beach, we entered a narrow street, the Frenchman striding

NAVIGATING BY SIGHT IN A TICKLISH SPOT

The boat is advancing with shortened sails, for some of the coast is lined with reefs. The best fishing grounds always lie near the reefs.

ahead, I at his heels, and Abdi and Kassem with their rifles—for purely ornamental purposes—bringing up the rear. We passed groups of Danakil who greeted my companion with courteous salaams, women carrying water from the oasis in goatskins, little boys, their heads shaven except for a scalp lock, and girls whose dozens of tiny braids stood out stiffly, smeared with butter and yellow earth. The children trotted at our heels until a word from Abdi sent them tumbling and giggling to the shelter of a gate.

Here none of the cluttered filth of European towns. The sand between the two rows of fences, stirred into choppy waves by passing feet, was clean as a beach, and smelled of incense, sheep dung, and wood smoke that filtered blue through the roofs overhead. Toward the outskirts of the town we turned into a gate that opened on a courtyard vaster than any I had yet seen and white with a layer of tiny shells. Two women were milking a dozen shaggy goats and a third ground dourah. All three wore the costume of the bush—a fouta of goat hide leaving breast and shoulders bare, the folded headdress of dark blue, and heavy brass bracelets at wrist and elbow. By the doorway of the hut a bearded Dankali sat cross-legged on a mat, smoking a water pipe.

While the women brought other mats for us, Tadjoura mats of woven palm leaf, bearing stripes and lozenges of black, brown, and purple, I ventured into the hut. It was clean as the courtyard, the floor covered with the same layer of white shells. For all furniture, a roll of mats, and standing against the wall a row of Dankali jars covered with braided leather and decorated with beads and cowrie shells. Like the whole town, it smelled of incense. Spirals of fragrant smoke arose from a pierced earthen pot, and a shallow hole by the wall sent up the same sweet-smelling smoke wreaths.

INCENSE USED IN WAR ON JINN

Incense plays an important part in the daily life of the Dankali, who uses it as an arm to ward off the dread jinn, those children of the devil. It is they who are responsible for all the ills and misfortunes in this world. They have given the white

THE "ALTAÏR," BUILT LIKE AN ARAB, RIGGED LIKE A CUTTER

This 40-foot *sambuk*, on which the author cruised, is sturdily built of Indian teak and is provided with a Diesel engine as well as sails (see, also, page 356, and text, page 367). The deck is coated with fish oil to protect the planks from the blistering sun.

man his power; they bring the smallpox, the famine, and the pest; they alone are responsible for the curse of sterility, that saddens so many Dankali marriages and is slowly but surely reducing the numbers of the tribe.

Women, because of the fear of sterility, have particular dread of the jinn. Morning and evening, they light the incense pot to rid the air of unseen abominations, and the incense hole in the floor of every Dankali hut is destined for internal fumigations.

Fear of the jinn makes the Dankali women endure without a murmur the barbarous practice of infibulation, in which the sharp thorns of the mimosa become surgical clasps in the hands of the local sorceress. The Dankali girl submits to it at the age of seven to safeguard her eventual marriage; the wife, to protect her unborn child; and the old woman, as a guarantee of a serene old age.

But even incense and mimosa thorns may not always avail. As we sat that evening in Tadjoura, munching dates and sipping syrupy coffee, as the guests of Máki, a Dankali chief, the quiet of the night was broken by the hollow beat of drums accompanied by a chorus of frenzied cries.

"ZAR," THE MYSTERIOUS RITE OF WOMEN

It was a *zar*, Máki explained, the mysterious rite of women. I had already seen a zar among the Gallas of Ethiopia. But there it was limited to old women and widows and represented a species of mystic compensation for their unattached state. The local sheik, the holy man, presided; and the participants, drunk with *kat*,* whirled and chanted for hours on end to the music of the drum, dancing themselves into an ecstasy that left them at last collapsed like dead things on the beaten earth of the hut.

Among the Danakil the zar is for the young married women, a closed and secret rite to propitiate the jinn and assure fecundity. The sorceress shuts herself up with the women in a dark hut—no man is admitted—and the drums, the dancing, and the hysterical shrieking continue for interminable hours.

* See, also, "The Flower of Paradise," in the NATIONAL GEOGRAPHIC MAGAZINE for August, 1917.

The men of the tribe consider the zar with no friendly eye, for often the young wife is brought home in a state of nervous collapse that borders on madness. But, like infibulation, the zar represents an established tradition—every Dankali wife must have her zar once a year—and no husband would dare to raise a serious objection for fear of supernatural reprisals.

To us, seated in Māki's courtyard, with the white goats massed in the shadow, the light voices of the men squatting beside us, the smell of incense, and the drums of the zar, Europe seemed far away. And yet Europe was there—a garrison of native troops and two or three French officers, in barracks perched above the town.

"And there they stay," Māki told us. "When a white soldier walks in the streets of Tadjoura there is trouble." Just what that "trouble" was he explained with a sly smile. The appearance of a sun helmet served as rallying signal for a horde of children, who trooped after the white man, screaming laughter and abuse, holding their noses as all Moslems feel inclined to do when approached by an Unbeliever, and perhaps flinging dust and stones. If the victim protested, if he committed the supreme imprudence of distributing a cuff or two, the band of children was replaced magically by armed and threatening parents and the incident might have a tragic ending. At best, it meant fresh complications for the Colonial Government.

I began to understand why French officials preferred that no white man, unless escorted by colonial troops, should land on the coast of the Dankali country.

"But the Sultan?" I inquired. "Surely he is a friend of the white man."

Māki smiled disdainfully.

"He has been bought with money, like a Sudanese slave. His command might arm a hundred men; no more. But there are others," he laid his hand on the hilt of his djembia, "whose word can put five thousand Danakil in arms."

THE DEPARTURE FROM TADJOURA

We left Tadjoura that night, and at sunrise put into a little bay—Khor Ali, at the entrance of the gulf—for the horizon showed an ugly white line that meant wind.

As we floated over the reef that bars the entrance at low tide, the oblique rays of the sun, striking through the transparent water, revealed a marvelous submarine garden—corals in clusters and knobs, white, rose, brown, and purple; blue-black sea slugs crawling among them; and the iridescent disks of rock fish that flashed rainbow colors as their flanks caught the light.

In the water about the *Altaïr* hundreds of blue sparks twinkled and went out—microscopic creatures like submarine fireflies, visible only at sunrise.

On either shore a steep bank rose a hundred feet or more to a plateau, and straight ahead tufts of mangroves, vivid green, masked the end of the inlet. A sambuk lay beached on a strip of sand at our right, with a group of Dankali fishers squatting about a fire. To the left, in the shadow of the bank, a family of pelicans paddled sedately, engaged in their morning's fishing.

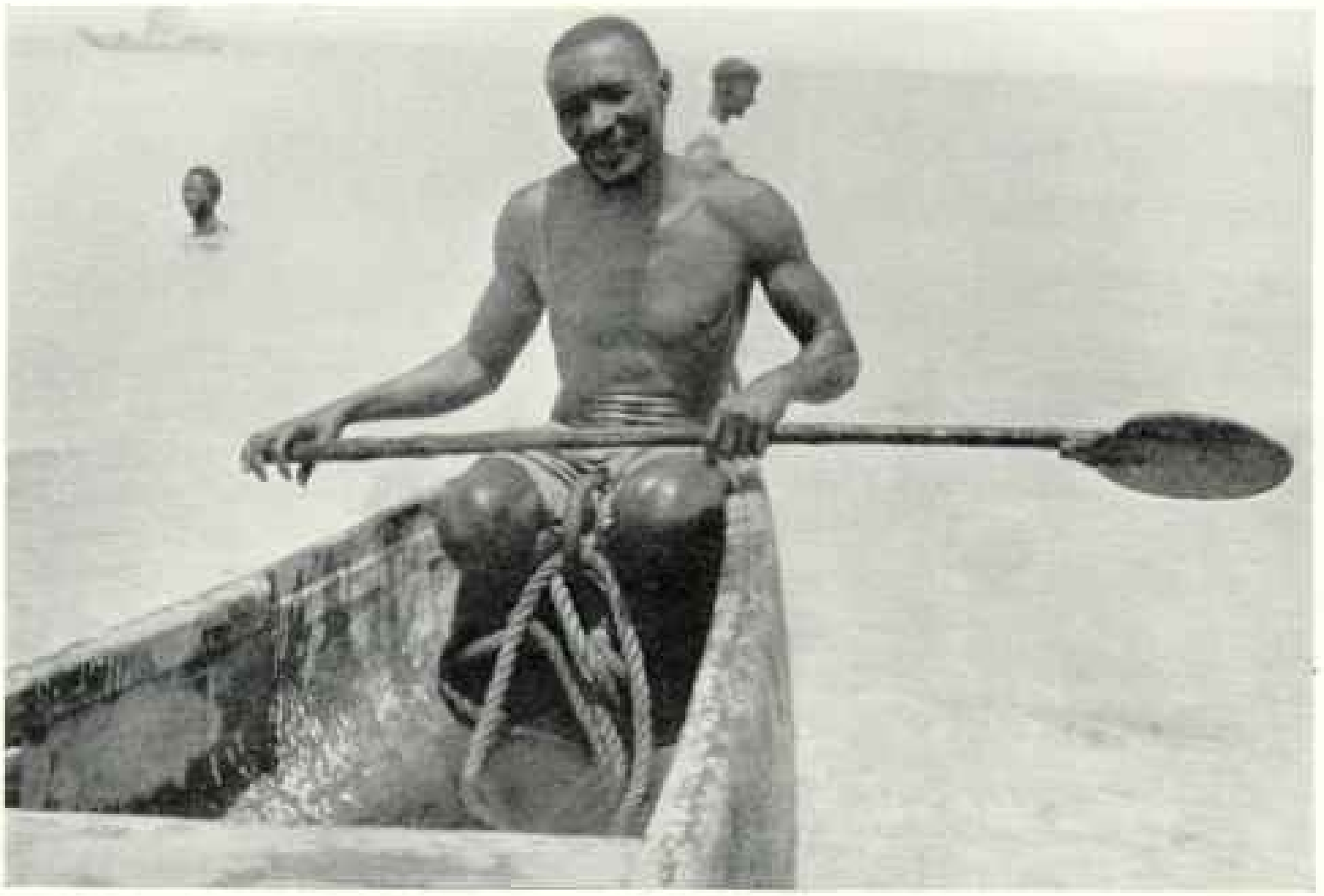
After an exchange of friendly hails, the Dankali fishers paddled out to the *Altaïr*, bringing fish and goat's milk in exchange for tea and sugar. With the exception of their skipper, grave and white-bearded, they were all young, handsome fellows, splendidly built, and one of them of exceptional beauty—a second Arabian Nights' prince, like our own Kassem.

THE FRIEND OF THE "ALTAÏR'S" MASTER RECEIVES EVERY COURTESY

Khor Ali was the point we had chosen for another excursion inland. That day the master of the *Altaïr* did not accompany us. He chose to remain on board to supervise repairs. Kassem and four of the fishers of Khor Ali formed my escort. No rifle this time, merely the big curved knife which with the fouta makes up the entire native costume.

We swam ashore, Kassem carrying my shore-going trousers neatly folded on his head. He warned me not to touch the sandy bottom until the water was knee-deep, to avoid the poisonous sea urchins, of which there were many in the inlet, in shallows never uncovered at low tide, and which at high tide lay beneath three or four feet of water.

We climbed to the plateau, crossing first a strange strip of fossilized sea bottom, rich with all manner of sea creatures, very like those I had seen under water at the entrance of the inlet, but of marble whiteness. The Danakil formed a close circle about me, not so much for protection as to be sure



IBRAHIM IN HIS DUGOUT

This Dankali sailor was temporarily shark-shy, for his fellow diver, a few weeks before, had been snapped up by a big man-eater (see text, page 370).

that nothing of interest escaped me—the rusty red earth used for dyeing palm fiber and cloth, the bush whose green twigs make efficient toothbrushes, and the other wiry one whose dried twigs serve to kindle fires without matches.

Their careful explanations, which Kassem translated into sailor-Arab for my benefit, were a source of much laughter. I could not help thinking, as I climbed with the gay group among the rocks, of the hair-raising tales I had heard in Djibouti concerning the ferocious and dreadful Danakil. Had I been a native princess I could not have been cared for more tenderly, like something fragile and precious that risked getting broken or lost. There was always a dark arm extended to brush aside the mimosa branches, to help me over rocks and across slippery slopes, and once I had all I could do to avoid being carried bodily.

Yet all this attention, I realized, was not given me because of any merit of my own; I was merely the friend of the *Altair's* master, the one white man who travels freely and unarmed through the Danakil's country because he is "one of the family."

The plateau, when we reached it, extended flat and bare as a table top, with the Indian Ocean blue on the farther side and the mountains rising straight before us—hard earth, sun-baked and pale, strewn with a multitude of tiny stones.

A DISCOVERY—TINY TOOLS OF STONE WORKERS

As I knelt to examine these stones, I made a discovery. Their forms were not accidental. Among the bits of flint and obsidian lay tiny stone tools, chipped with care—scrapers, blades, and burins—evidence that for centuries, perhaps, men had camped there, men who did not know the use of metal. How long ago? Centuries, tens of centuries? It was impossible to tell. Only by comparing them with other finds made elsewhere might there be hope of dating that surface crop of chipped obsidian.

That afternoon we gathered hundreds of the little tools, the Danakil showing surprising acuteness in distinguishing the tool from the useless chip. What puzzled them, however, was why I should think the stones worth picking up. That evening,

KASSEM AT THE TILLER

"The slender Arabian Nights' prince" was one of the *Altaïr's* crew of expert seamen, and, like all of them, he had begun his career on the sea as a pearl diver (see text, page 367).

PREPARING HIS STAFF OF LIFE

The boy of the fishing sambuk at Khor Ali is grinding dourah grain between two stones to make bread (see text, opposite page, and illustration, page 385).

when we returned to the *Altaïr*, laden with flints and fossils, Kassem drew me aside mysteriously.

"Dini has brought you something," he confided; whereupon Dini, one of the young fishers who had gone with us that afternoon, untied a knot in his fouta and held his palm toward me. On it lay three agate pebbles, smooth and round.

"These, too, are *magic stones*," he explained. "They are healing stones, good for swelling in the neck and pains in the belly. You carry them with you always and the jinn will leave you in peace."

His words and Kassem's manner made it clear that Dini had offered me a valuable gift. I could think of no better way of thanking him than to give him in return a handful of my own "wonder-working" stones, accompanying the present with a package of Algerian cigarettes, as the Danakil are all enthusiastic tobacco-users. (Generally they chew powdered tobacco mixed with ashes, tucking their cud away behind the ear when not in use.)

A HAIR-COMBING PARTY

During our absence that afternoon there had been a general bath and hair-combing party on board the *Altaïr*. The young Dankali rarely crops his hair; he prefers to let it grow long, falling in curly waves about his neck. To keep it sleek and glistening, he uses butter and sometimes, to give it a russet tint, he bleaches it with lime. Before combing, he applies a cupful or so of liquid butter and an obliging comrade wields the wooden comb (page 381).

Butter is an essential to the Dankali toilet. It keeps the skin from blistering in the sun and on the rare rainy days it serves as a garment against the cold. The whole crew glistened with it, and, as the butter was rancid, the general odor was not altogether pleasing to white nostrils.

KASSEM HAS A SESSION WITH HIS HAIR-DRESSER

The young Dankali first applies a cupful of liquid butter to his head to keep the hair sleek; then an obliging comrade wields a wooden comb (see text, opposite page).

PEARL OYSTERS ARE FOUND IN THESE COASTAL WATERS

A pearl diver with his *mouraille* (see page 384). In the foreground is a *sadaf*, a species of oyster which produces few pearls, but they are of fine size and quality.

"Though you grow accustomed to it in time. In fact, you even learn to like it," the master of the *Altair* insisted. He himself used butter liberally, to keep the hair out of his eyes in the wind, he explained, and as a sure protection against the sun.

We distributed the twig toothbrushes, which were put instantly to work. Then, as constantly during the cruise, I was struck by the passion for personal cleanliness on the part of our Dankali crew. As all were Moslems, it was primarily a religious habit, though far from perfunctory. Not one of the men thought of eating without first washing his hands and arms; after the meal he repeated the operation, rinsing his mouth and washing his face. As for bathing, whenever the chance offered, the men spent almost as much time in the water as out of it.

Watching them at their meals, grouped about a common dish, I discovered that eating with the fingers may be neat and even elegant. The proper manner was to dip four fingers spoonwise in the dish and slip the food into one's mouth, the thumb aiding as pusher. Our own food, though we ate it with forks, differed from that of the crew merely in the matter of bread. Theirs, made from dourah meal, moistened and left to ferment over night before baking, was a soggy, sour paste. Our own hard slabs of unleavened dough that Chôdo baked daily in his tanika oven, were little better. All one could say for them was that they were less sour.

THE DANCE OF THE DANAKIL

When dinner was over that evening in Ras Ali, the crew of the Dankali sambuk came aboard. After coffee and tobacco there was dancing—two couples at a time, face to face, brandishing imaginary weap-

SOMALI PEARL DIVERS

They start their dangerous work as boys, but rarely prolong it after the age of 25, lest their health suffer. Divers are usually recognizable because of their well-developed chests.

ons and timing their stamping feet to the beat of a chant.

"When a hundred Danakil dance in the bush, the earth trembles," Kassem remarked. I could well believe it. It seemed a miracle that the deck of the *Altaïr* resisted the thumping cadence of those dancing feet. Songs improvised in our honor accompanied the dance. Toward 10 o'clock came the final couplet:

"And now you will permit us
To go ashore and eat."

With that by way of farewell, our guests climbed down into their dugout and paddled off through the night.

Toward dawn a storm broke over Khor Ali. Immense black clouds shot with lightning tumbled up from the horizon, blotting out Orion, and the morning star hung like a lantern above the rim of the plateau. With an explosion of thunder, the clouds burst, letting down the rain like a cascade. The deck ran with water. Part of the crew took refuge in the hold, the others in the captain's cubby, where we spent an uncomfortable hour, shivering in our wet clothes and dodging little waterfalls that dripped through the uncalked roof. In an hour it was all over and the rising tide floated the *Altaïr* over the reef into the gulf.

A last look toward the inlet revealed our guests of the evening before, stretched on the sand about the drenched ashes of their camp fire, each man covered from head to foot by his soaked fouta, motionless as sheeted corpses.

All day long we beat north against the wind, passing Obock and the tall column of the Ras Bir Light. Toward afternoon, the wind shifting, we set in close to shore, a low white cliff, eaten in hollows by the sea, with here and there a cave which the Danakil assured us were filled with bones of men the jinn had eaten. Beyond the cliff rose the flat highlands of the Table Mountains and the silhouette of the Djeb-

bel Ghin, a strange stone figure like a turbaned warrior.

Shoals of flying fish, shuttles of silver, fled in startled bounds from our bow. A swordfish shot into the air, lunging back into the sea as if the arc of its trajectory had snapped at the summit. Out by the horizon, what looked like a fleet of slender sails glistened and disappeared—a band of cachalots, *Soltan al Bahar*, the King of the Sea, were blowing water jets into the sun.

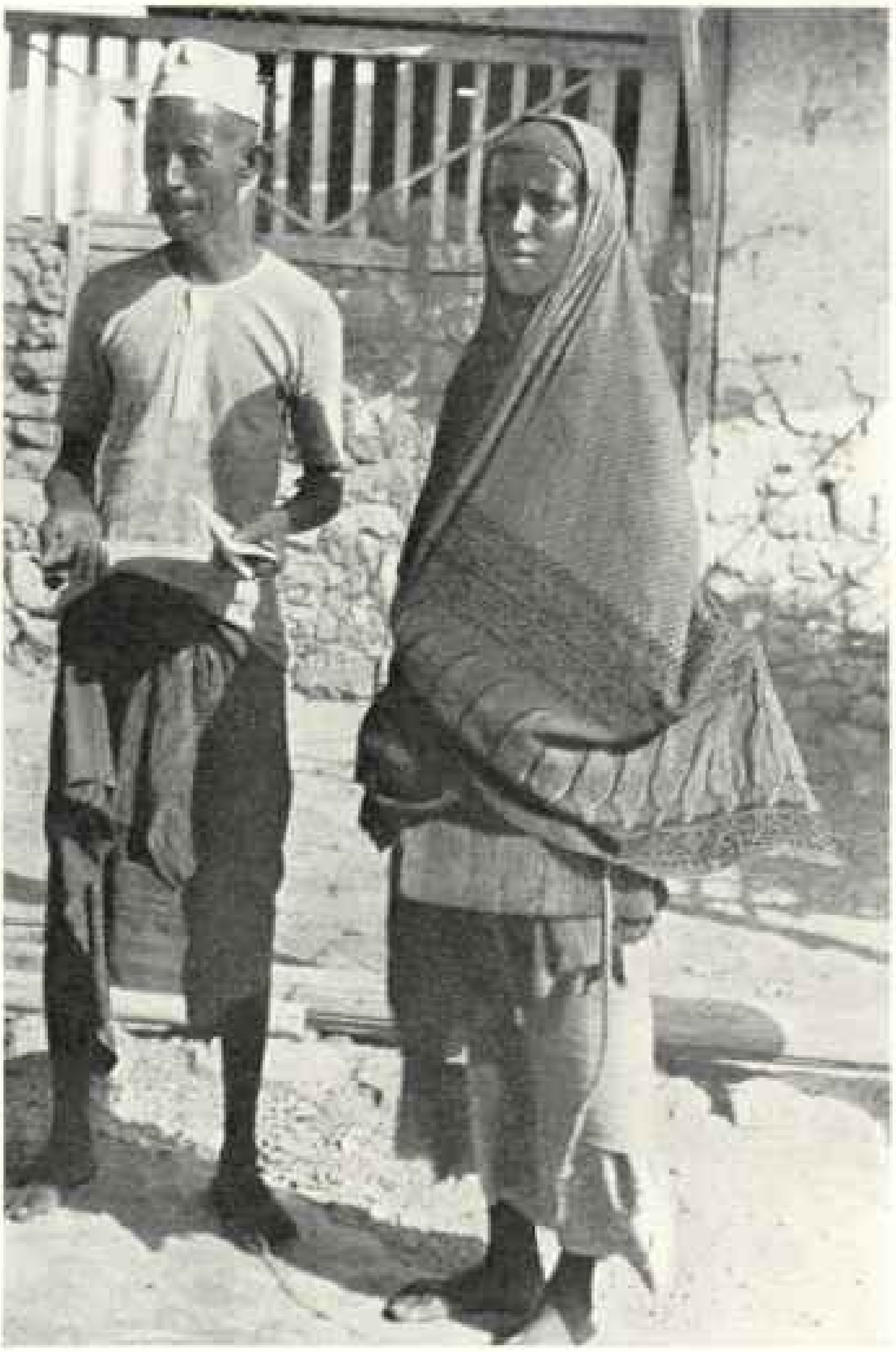
THE HELMSMAN CONTRIBUTES A YARN

Hamid Baket held the tiller. During the long tacks the crew, grouped at his feet, told stories—stories of the Arabian Nights, the loves of sultans' daughters and poor fishermen, of Abou Nomass the jester, and the inevitable stories of the "stupid Sudanese," to which Hamid Baket listened good-naturedly and even contributed one of his own.

"Two Sudanese in the bush killed a gazelle. But how roast it? They could find only two hearthstones and they needed three. At last one of the Sudanese proposed to the other: 'Let me use your head for a hearthstone and in return you can have a double share of the roast meat.' His comrade agreed. The fire was built and the gazelle roasted.

"'Come, Abou Kader, come and eat. I have cut the gazelle in three parts; two of them are yours.'

"But the Sudanese who had lent his head did not stir.



THE "BLACK SEMITES" ARE A HANDSOME FOLK

"The general appearance of the Damkil, in whom little if anything recalls the negroid, might well indicate a close relationship with the dwellers of ancient Egypt" (see text, page 364). They are a proud, courageous people, with a saying that "Guns are only useful to frighten cowards." On the coast the women wear Arab costume.

"'Come, Abou Kader, all is ready.'

"But the other Sudanese still lay, his head in the fire.

"'*He-ep! He-ep!*' cried his puzzled comrade. Then he grew angry.

"'Abou Kader, you are mocking me. You lie there and grin.'

"And he called the man's mother.

"'Come, Abou Kader, my son. The gazelle is cooked and your friend impatient. Come and eat.'

"But still Abou Kader did not stir.

SCANNING THE SEA FLOOR FOR PEARL-BEARING OYSTERS

Somali pearl divers work in shifts. One paddles the dugout, while the other examines the sea bottom through the *mouraille*, a large oil tin fitted with a glass bottom. If the sea is still, it is possible to see 60 feet under water.

"'Child of an evil jinni, you mock the mother who gave birth to you. See, I shall take your part of the gazelle and you will have nothing!'

"And the mother and the friend went off to feast together and left Abou Kader in the bush with his head in the fire."

CIGARETTES FOR PASSPORTS AT ANGAR

Night fell before we made the anchorage of Angar. We entered cautiously, feeling our way with the lead across the knife-like edges of the coast reef. A splashing whir—tock-tock-tock—the noise of many tiny motor boats. Hundreds of garfish, "needles," our men called them, scattered in all directions, bounding across the water as if shot from a gun. Some described a circle, striking the sides of the *Altaïr;* others banged against the dugout, flapped in and out again, and went soaring off into the night.

"That is a sound no sailor likes to hear at night. It means a reef," the *Altaïr's* captain remarked.

"The 'needle' cannot see at night," Kassem supplemented. "If one hits you here or here"—he pointed to throat and belly—"where men are soft like butter, it goes straight through!"

The harbor of Angar offered poor shelter in the wind. All night long we rolled and tossed, while Abdi and Kassem took turns watching the anchor chains. Daybreak brought the vision of a long sand bar separated from the shore by a lagoon, beyond which showed clusters of mangroves and four Dankali huts grouped together on the sand. At one end of the sand bar a cube of masonry meant a barrack, an outpost of Europe, oddly incongruous in that bare landscape.

The *Altaïr's* master and I had barely set foot on the sand bar when the "garrison" streamed out to meet us—six Somalis and a black corporal, wearing odds and ends of khaki uniforms and armed with rifles, bayonets, and cartridge belts. Who were we? Where did we come from? Where were we going? A lavish distribution of cigarettes proved a satisfactory substitute for the information and the barefoot soldiers retired to their quarters in dignified marching order.

PREPARING THE "MOUFA," A BARREL-LIKE OVEN FOR BAKING DOURAH BREAD

First build a fire, and when it is in embers, plaster dourah cakes on the sides of the mouña to bake (see, also, text, page 381).

Wading through the warm lagoon, breast deep, we crossed the damp sand among the mangroves, treading down the rubbery shoots among which lay quantities of black sea snails, for it was low tide. Beyond the mangroves, the beach stretched bare and white to the four huts, bleached as driftwood, and of so light a construction it seemed that a puff of wind would scatter them across the sand.

Two downy baby camels, in a narrow inclosure of mimosa thorns, darted snakelike necks through the branches as we passed. From the largest of the huts a man came toward us. I recognized Sheik Issa, whom I had seen in Obock, his lean torso bare, the wooden prayer beads about his neck, swinging across the sand with a vigorous, youthful stride, for all his sixty-odd years.

The day before he had seen the *Altair* from the heights of Djebbel Ghin and had walked all night to be at Angar to welcome us. Sheik Issa, the Damakil had told me, was one of the great men of the tribe, honored and respected as leader and saint, whose word sufficed to maintain peace among the tribesmen or set every man of them in arms. Rich with flocks in the Mabla, camels, and sambuks, he owned houses and wives in more than one Dankali town. But his hut at Angar differed in no respect from those of the three fisher families, his neighbors. It was bare except for a prayer mat, an empty packing box, and a crescent-shaped wooden head rest on which the Dankali sleeps.

CAMEL'S MILK SERVED IN WOODEN BOWLS

A handsome young woman brought us camel's milk in wooden bowls. Dressed in flaming Arab silks, her arms glittering with copper bracelets, and silver earrings tinkling against her dark cheeks, she was like a gorgeous bird in the colorless landscape. A naked child trotted at her heels, Sheik Issa's youngest, its plump little body glistening with butter and its dozens of tiny braids gay with ribbons and cowrie shells.

When she had served us, the young wife disappeared. Seated on the packing box while we crouched on the prayer mat at his feet, Sheik Issa told us stories of the not-too-distant past, of the great slave trade between Ethiopia and Arabia and its clandestine survival; of European opposition to the trade and the consequent deep

SHEIK ISSA EMBARKS ON THE "ALTAÏR" FOR ARABIA

He is honored and respected among the Danakil as a leader and saint. Not only was he a gracious host, but he offered to accompany the *Altair's* party from the Somali coast over to Arabia, in order to afford them protection from pirates (see text below).

hatred of the Danakil—slave merchants from time immemorial—for the interfering whites.

"I am an old man. I have traveled much," Sheik Issa concluded. "Perhaps among white men there is honor, but I have yet to see the European who will not betray his given word when he has pledged it to a Dankali."

The master of the *Altair* lifted a hand in protest.

"Not you, Abd el Hai." The sheik touched my companion's shoulder lightly with his fingers. "You are a Believer and your skin is almost as black as mine; and surely the blood of some dark woman runs in your veins, for Allah's curse does not lie upon you; you dare show your head uncovered to the sun!"

With an abrupt change of tone, Sheik Issa inquired where we were going.

"Across the Strait of Bab-el-Mandeb to Khor Omeira, in Arabia," the master of the *Altaïr* replied, with a gesture toward the open sea.

The sheik shook his head thoughtfully.

"It is not wise, my friend. Since the white man's war, the coast over there throngs with *arami* (pirates). Only last week they beached a sambuk of our Danakil and massacred the crew. They will not respect even the name of Abd el Hai. And with Madame on board—" He paused impressively. "There is only one man who can assure your safety."

"And he?"

"Myself. I will go with you."

Late that afternoon Sheik Issa came aboard, bringing with him a sheep, that the crew might feast in his honor. The sun dipped down behind the Mahla; the evening star hung above the horizon; silhouetted against the sky, a tall draped figure lifted its arms to heaven. The sheik was at his prayers. When night came we set sail. Sure in the protection of our Moslem saint, we headed east, in a calm sea, toward Arabia, its pirates, and the pearl-bearing waters of Khor Omeira, a hundred miles distant across the strait.

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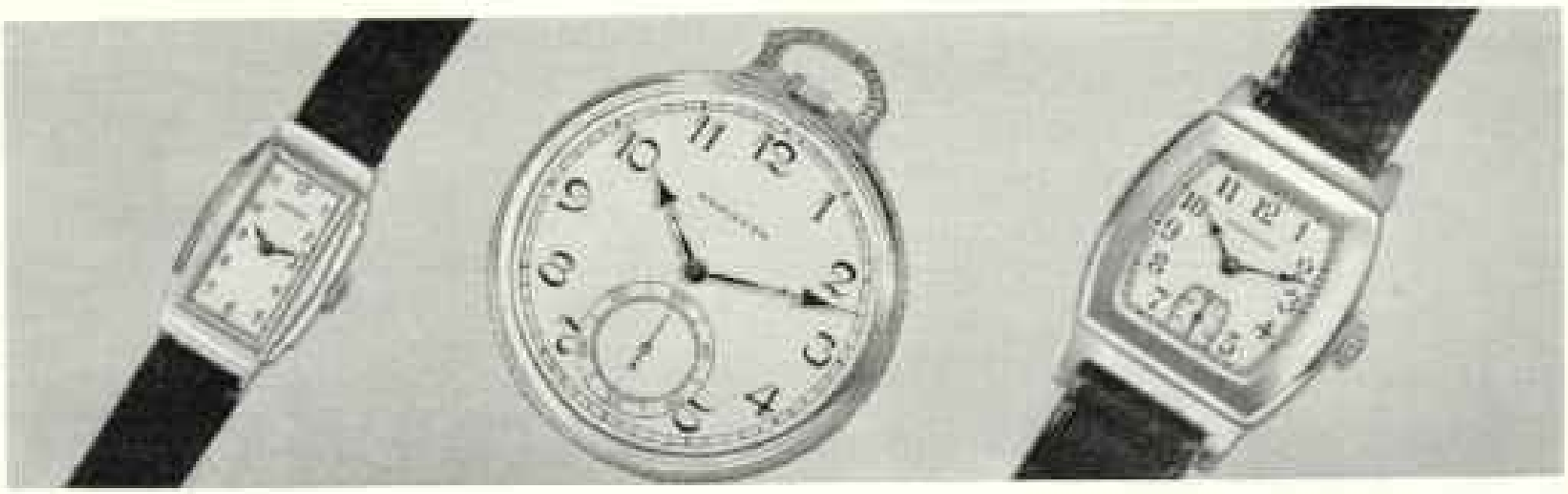

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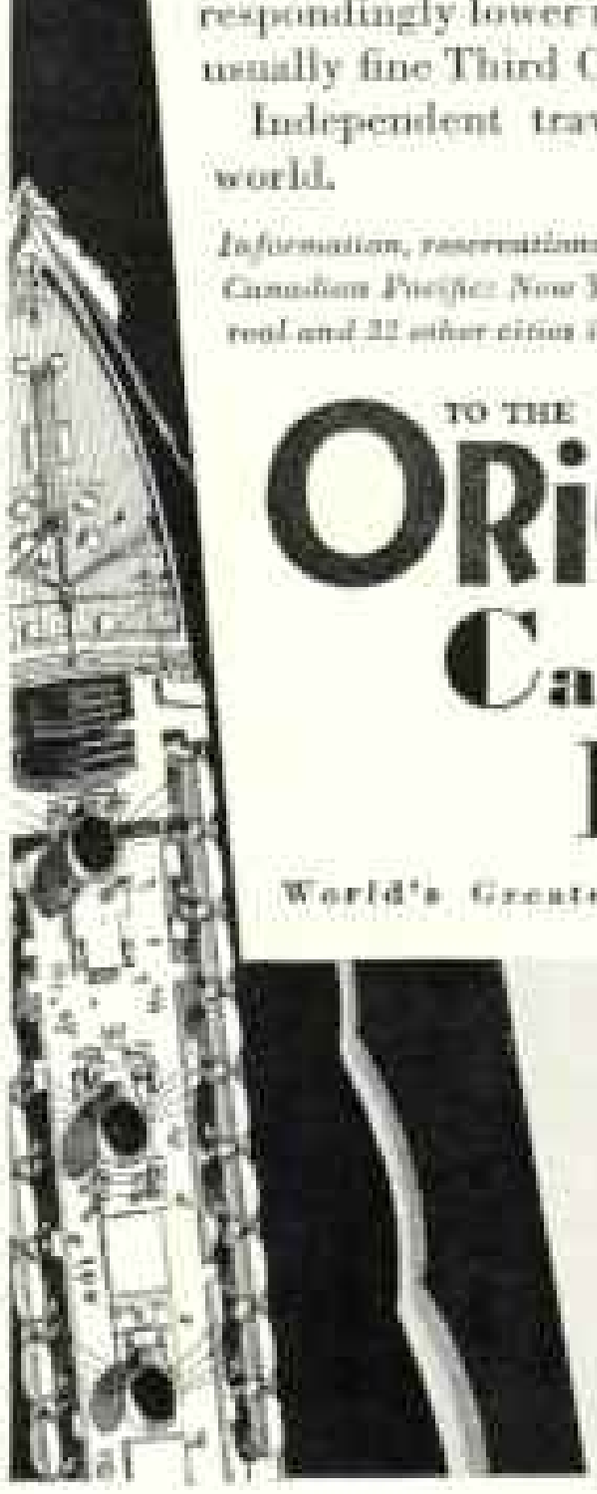

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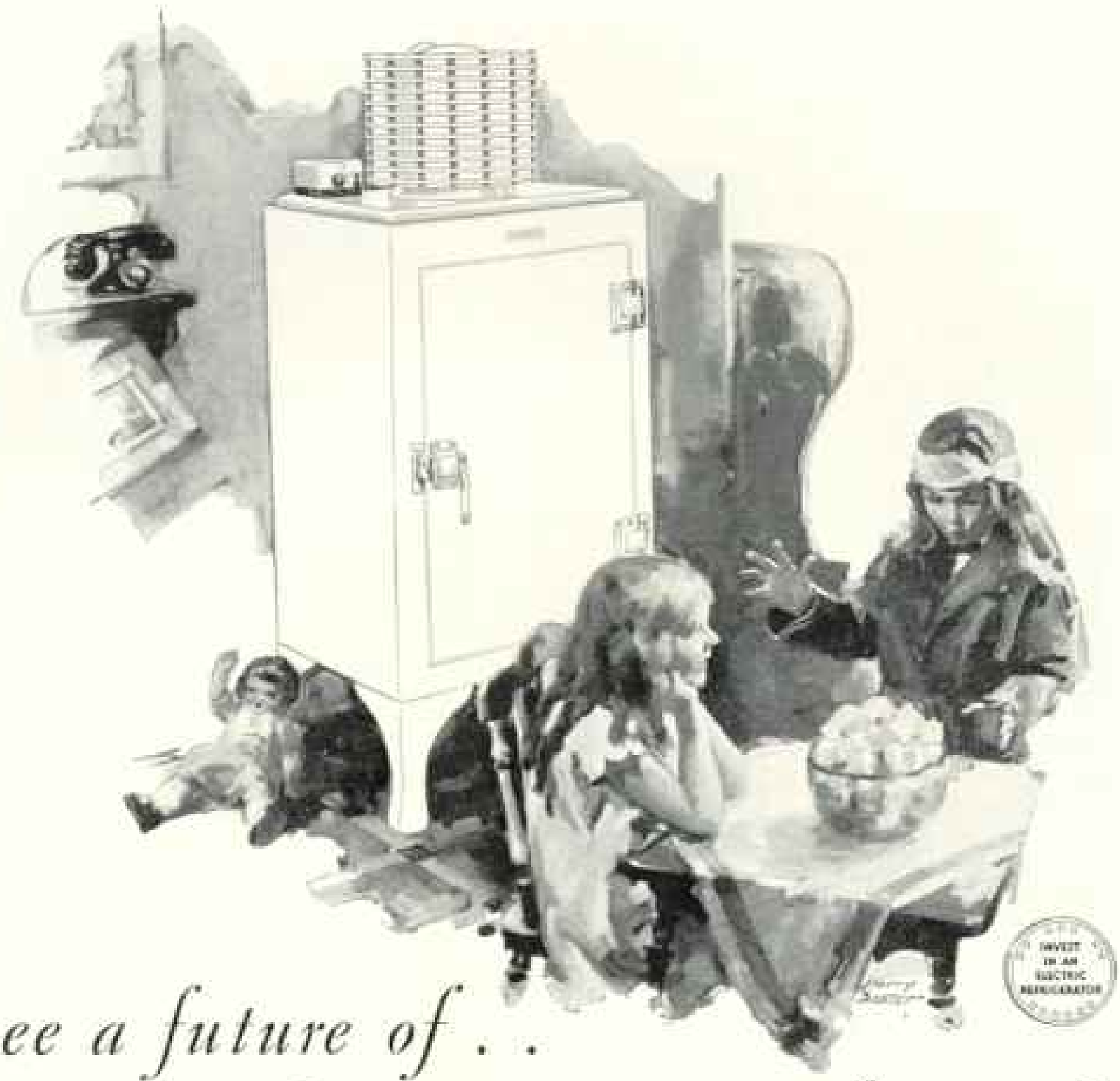

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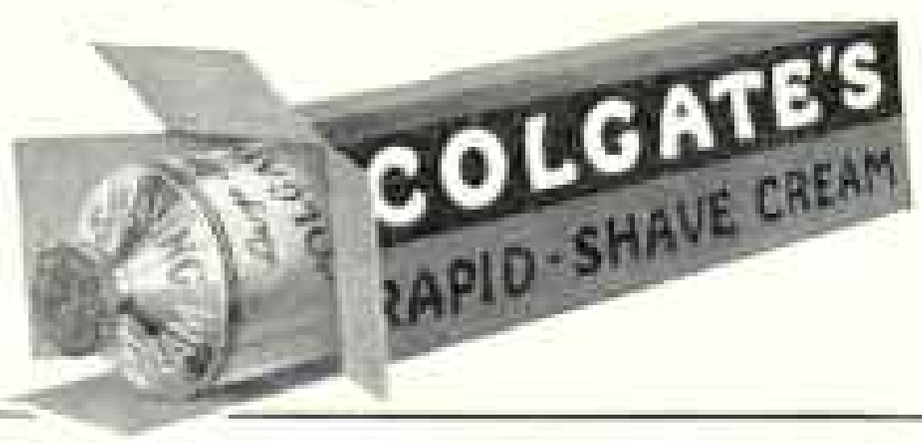

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There are several causes of pyorrhea. Overfeeding and improper diet are responsible for the majority of cases. A diet lacking milk, green vegetables, fruit and sufficient hard food to chew upon so as to bring a free circulation of blood through the gums, may lessen the resistance of the tissues to attacks by mouth bacteria.

Several other conditions cause pyorrhea. It may come from injury to the gum by the careless use of toothbrush or dental floss. An accumulation of tartar at the gum-line may be partly responsible. Crooked or missing teeth, ill-fitting crowns or bridge-work that cause extra strain and pressure on certain teeth may bring on pyorrhea.

Bleeding and tenderness of the gums are usually the first signs of pyorrhea and call for prompt action. But in some cases these warnings are absent and only X-rays can detect the destruction of the bony socket in which the teeth are held—a destruction that may proceed painlessly and relentlessly until the teeth are lost and invalidism results.

In its early stages pyorrhea can be cured by expert treatment, and can often be checked even when further developed. But if the disease has progressed too far for cure, the affected teeth should be removed in the interests of health.

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● **BOOK AT ONCE** to get choice accommodation. From $900. Secure itinerary-booklet and ship's plan from your own agent, or any Canadian Pacific office: New York, Buffalo, Cincinnati, Boston, Chicago, Philadelphia, Montreal and 28 other cities in U.S. and Canada.

Empress of Australia

CANADIAN PACIFIC

THE TELEPHONE HAS

LIVING IDEALS

The Bell System is chiefly people. There is four billion dollars' worth of telephone buildings and equipment but what makes these dead things live is the organization, the skill and the ideals of the people who operate this vast plant.

The System's ideals of service are reflected through the employees in 24 regional operating companies. Each company is adapted to the needs of its particular area. Each takes advantage of the improvements developed by the 5000 members of the Bell Laboratories staff. Each avails itself of the production economies of Western Electric, which manufactures equipment of the highest quality for the whole System. Each makes use of the general and technical staff work done by American Telephone and Telegraph.

The spirit of the people comprising this organization is also shown in the attitude of the System toward its business. Its policy is to pay a reasonable dividend to stockholders; to use all other earnings to improve and widen the service. There are more than 600,000 American Telephone and Telegraph Company stockholders . . . and no one person owns so much as one per cent of the stock.

The ideals of the Bell System are working in your interest every time you use the telephone. Through them, you get better and better service and constantly growing value for your money.

★ *AMERICAN TELEPHONE AND TELEGRAPH COMPANY* ★

A Native "Coiffure"

See the Picturesque and Marvelous Sights of

SOUTH AFRICA

Startling contrasts—infinite beauty and mystery—in sun-kissed South Africa!

Nature's masterpieces and man-made wonders—Victoria Falls, the glorious Drakensberg Mountains, the Cango Caves, the Valley of a Thousand Hills! Kimberley's famous diamond mines and the great gold workings of Johannesburg—open to your inspection.

Near Durban—"Pearl of the East African Coast"—native blacks in all their picturesque glory—chiefs, quaint kraals, witch doctors, and wild war dances!

Good golf, tennis, and fishing! Delightful surf sports at gay coast resorts. Modern trains, motor roads, and hotels—and a marvelous, health-giving climate!

Come to South Africa for an ideal sea voyage—and the soul-stirring sights of a lifetime!

A Tray of Diamonds from the Premier Mine near Pretoria

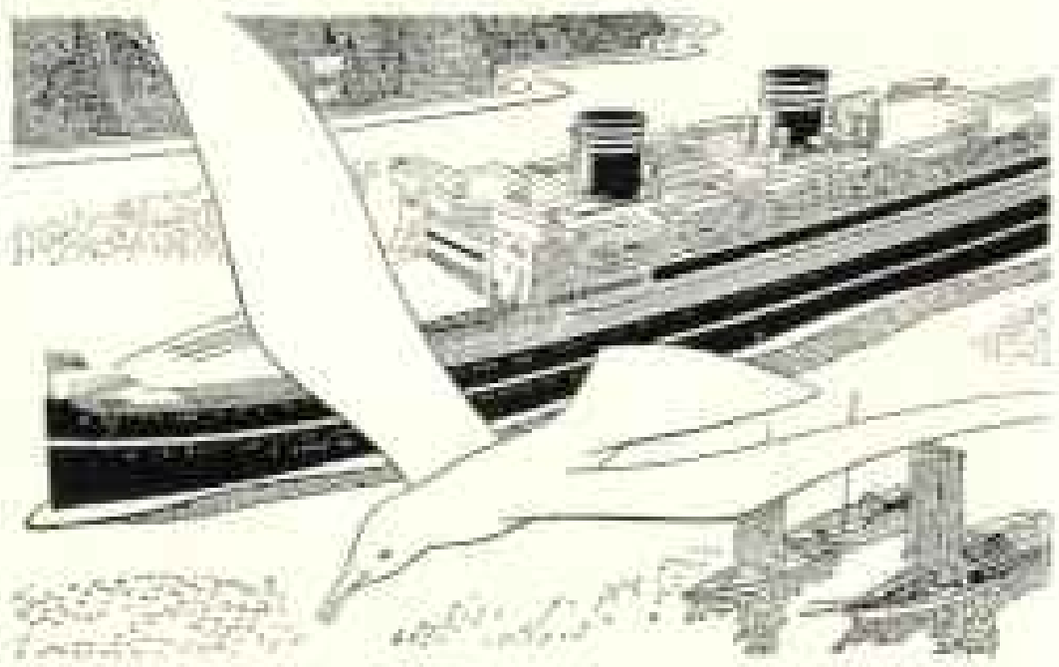
For full information, address
Thos. Cook & Son
587 Fifth Avenue, New York, N. Y.,
or
American Express Company
65 Broadway, New York, N. Y.,
or any office of Thos. Cook & Son, or the American Express Company

かんげい

KANGAY

Welcome

Courteous Japan crosses the Pacific to give you cordial greeting...at the gangplank of the magnificent new N. Y. K. motor liners ...the fastest and finest between the U. S. and the Orient. • As your ship heads for the broad Pacific you have already crossed the hospitable threshold of the Mikado's Empire...for N. Y. K. ships will give



you a running start for the complete enjoyment of your visit to the charming cherry blossom kingdom.

JAPAN, CHINA, PHILIPPINES...STOP-OVER AT HONOLULU

Magnificent staterooms and suites...swimming pools ...gymnasiums...and menu witcheries that lure the most jaded palate back to its lost youth. Deck sports...dancing, of course...and every kind of entertainment. English speaking stewards. • Regular sailings from San Francisco and Los Angeles, first-class $300, up. From Seattle and Vancouver direct to the Orient on new Cabin and Tourist-cabin motor liners or all Tourist-cabin ships; Cabin $250, up, Tourist-cabin $125...Call or write Dept. 9.

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(Japan Mail)

New York . . . 25 Broadway
545 Fifth Avenue
San Francisco . 551 Market Street
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Los Angeles . 605 South Grand Ave.

• Or Cunard Line, General Agents or at any local Tourist Agent

CHRYSLER
EIGHTS & SIXES

Enjoy Yourself More—Own a Chrysler

IF THERE is anything in motoring more enjoyable than owning a Chrysler it's to own *two* Chryslers.

Because *all* Chrysler models are so essentially and delightfully different from other cars. They have more style about them. They are so full of life and animation. They are so dashing in pick-up, so swift and smooth, so easy to control.

Today there is a Chrysler within the reach of practically every purse.

There's the new Chrysler Eight De Luxe—simply *magnificent*. America's truly luxurious car of moderate size and moderate price. It has a wheelbase of 124 inches and a 95-horsepower straight eight engine with down-draft carburetion—smooth and steady all the way up to eighty miles an hour.

There's the Chrysler Six, styled like the Chrysler Eights—an eminently fine Six with a 116-inch wheelbase; a sturdy double-drop frame and low center of gravity; quiet 78-horsepower engine; quick, easy gear shift; safety bodies of steel, rigidly welded into one piece; self-equalizing internal hydraulic brakes—and with Chrysler's highly perfected *Free Wheeling* optional at slight extra cost.

There's the Chrysler Imperial Eight—Chrysler's finest—the largest, fastest, richest car even Chrysler has ever achieved. A car of 145-inch wheelbase and 125-horsepower—a car holding *twelve* official A. A. A. Contest Board stock car speed records.

Both the Imperial Eight and the De Luxe Eight have the exclusive Chrysler Dual High 4-speed transmission. TWO high gears—and you can shift from either to the other *instantly*, at any car speed, without clashing. One high gear is for flashing leadership in traffic. Another still higher gear gives faster car speeds at *slower* engine speeds.

Drive a Chrysler and learn the difference.

•

CHRYSLER SIX	$885 to $935
CHRYSLER "70"	$1245 to $1295
CHRYSLER EIGHT DE LUXE . . .	$1525 to $1585
(Five wire wheels standard; six wire wheels $35 extra)	
CHRYSLER IMPERIAL EIGHT . . .	$2745 to $3145
(CUSTOM MODELS $3150 to $3575)	

All prices f. o. b. factory; special equipment extra

Take them to the Dentist before school starts!

Their future health, their school work, may well depend on the condition of young teeth. Make sure they're in good repair.

IN CHICAGO nine children in every ten need dental care! That is true in Cleveland, New York and other cities. Those are tragic facts brought out by surveys.

It's a wrong but common belief that baby teeth don't matter. First teeth diseased may ruin those to follow. Many systemic troubles of later years are the result. Watch them—guard them under your dentist's supervision.

Why we sponsor this advertisement

The Pepsodent Company publishes this advertisement because our business is built upon the vital principle of better teeth. We know that as people go to dentists they become "tooth conscious." They pay more attention to their teeth.

Hence our interest becomes partly selfish, for it's those who are most concerned about their teeth that eventually turn to Pepsodent—the film-removing tooth paste.

What film does

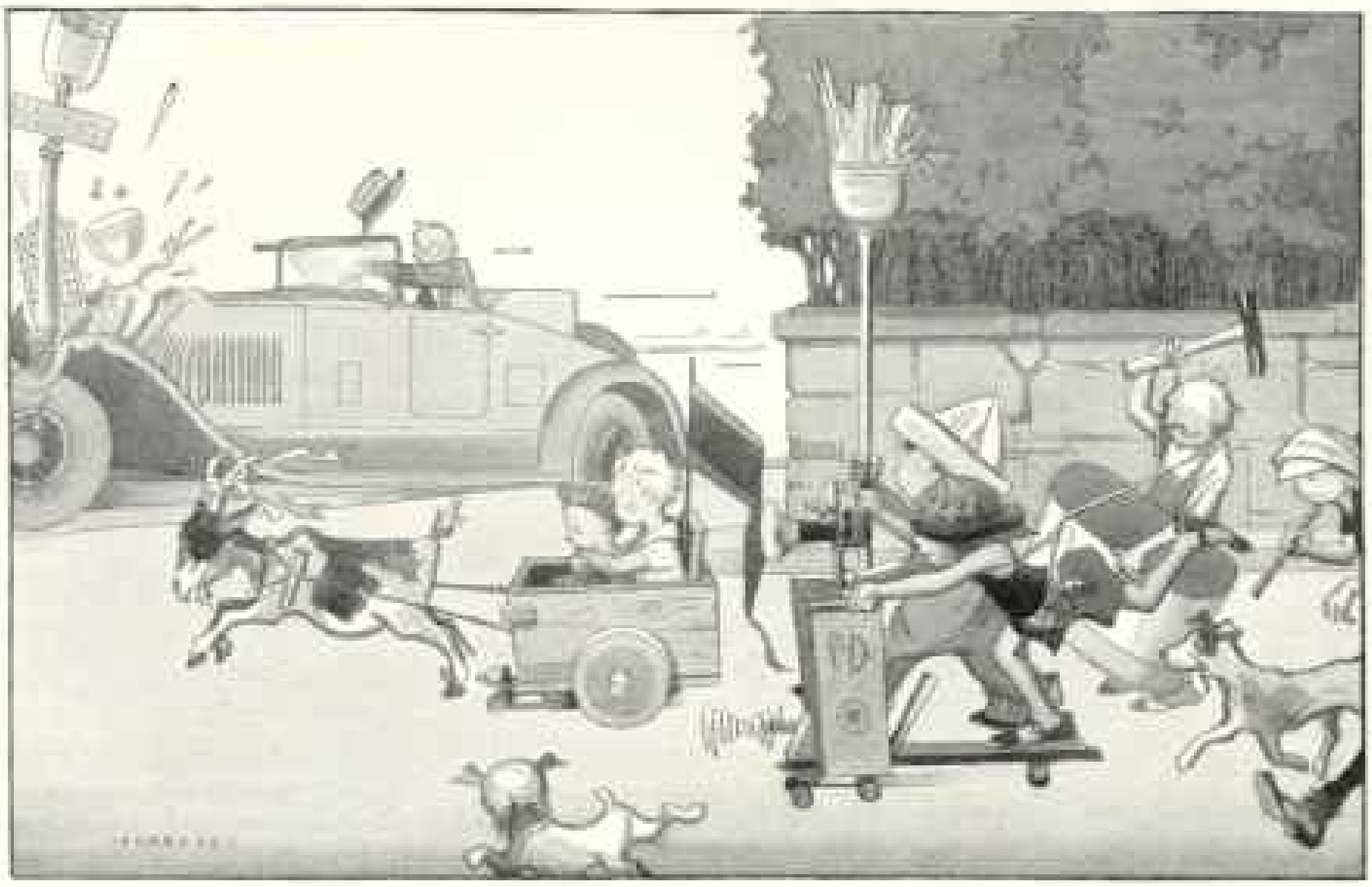
Your dentist will tell you about film on teeth. That it should be removed because it harbors destructive germs of tooth decay and other troubles.

Film glues germs to teeth so stubbornly ordinary ways cannot remove it. Film absorbs the stains from food and smoking and makes teeth unattractive.

Pepsodent tooth paste removes film—gently. It embodies the finest, softest polishing agent known. Pepsodent is safe, completely safe, to the softest children's teeth.

Pepsodent—*Use Pepsodent twice a day—see your dentist at least twice a year*

YOU NEVER KNOW
what's around the corner!



A QUICK yank at the wheel *may* make the best of a bad situation... and then again, it *may not!* Blind corners see plenty of accidents!

An Ætna Combination Automobile Policy may be written to cover *every* insurable motoring risk. Ætna's 25,000 representatives assure prompt, emergency service whether you're near home or clear across the continent. This Coast-to-Coast Service is one of the big advantages in being "Ætna-ized."

Nowadays, if you violate certain laws and cause an accident, many states may not even let you drive your car back home (if youstill have a car!)—*unless* youcan show *acceptable* evidence of your Financial Responsibility*—such as an Ætna Automobile Policy. See the Ætna-izer in your community. He is a man worth knowing.

*17 States and 3 Canadian Provinces now have Automobile Financial Responsibility Laws.

ÆTNA·IZE

25,000 Ætna Representatives from Coast to Coast to give you *friendly, personal* service.

The Ætna Casualty & Surety Company, The Ætna Life Insurance Company, The Automobile Insurance Company, The Standard Fire Insurance Company of Hartford, Connecticut write practically every form of Insurance and Fidelity and Surety Bonds.

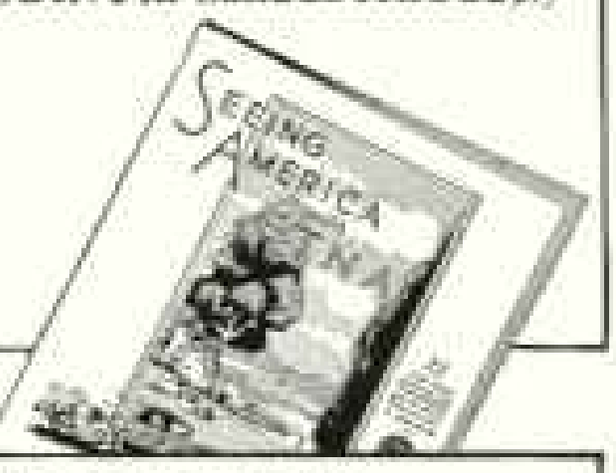
TOURING?

Then clip and mail the coupon below for a fascinating 48-page

Book of Motor Tours

"Seeing America with Ætna"

22 tours. Each illustrated with a large 2-color map. Each adaptable to the length of your vacation and the limits of your budget! A unique guide to America's most beautiful scenery and most interesting historic points! Your name and address on the coupon, plus 12¢ will bring your copy by return mail. (If you live in Canada send 22¢.)



MAIL THIS TODAY

The Ætna Casualty & Surety Co., Hartford, Conn.
Gentlemen: Send me your 48-page Tour Book, "Seeing America with Ætna". I enclose 12¢. (If you live in Canada send 22¢.)

Name _____

Address _____ G-9

Cadillac V-8 prices range from $2695, f. o. b. Detroit — with G.M.A.C. terms available on all body types. The model illustrated below is the V-8 5-passenger sedan, with coachwork by Fisher.

Until 1927, Cadillac's entire reputation as a master builder was based upon the Cadillac V-8. This fact has never been forgotten, and though the Cadillac line now includes three other distinguished cars—the La Salle, the V-12 and the V-16—the V-8 is built, to this day, as if it were the sole protector of Cadillac's good name. In fact, no eight-cylinder Cadillac ever produced could compare with the present V-8. Yet, due to a vastly enlarged manufacturing program, this finest of V-8 Cadillacs is priced as low as $2695, f. o. b. Detroit.

CADILLAC V 8 12 16

DO THEY PLAY ON RUGS CLEANED

. . . this way

ORDINARY VACUUM

Depends upon suction alone, or suction plus a scraping brush. It was found, in a recent investigation by Pittsburgh Testing Laboratory, that specimens of a popular cleaner of this type removed 36% as much dirt on the average as Hoover cleaners.

. . . this way

VACUUM + SWEEPING

Adds a motor-driven brush to suction—and removes more dirt. Yet Pittsburgh Testing Laboratory found that specimens of a popular make of cleaner of this type removed on the average only 75% of the dirt removed by Hoover cleaners.

. . . or this way?

HOOVER
VACUUM + SWEEPING + BEATING

Only The Hoover combines with suction and sweeping a beating principle, Positive Agitation. This exclusive Hoover method enables it to remove nearly three times as much dirt as suction alone and one-third more than suction plus sweeping.

Electric cleaners are of three different types.

One cleans by suction alone, or suction plus a scraping brush.

The second—and this was the best method known up to a few years ago when Hoover abandoned it—employs suction plus a motor-driven, sweeping brush.

Now there is a third method, found only in The Hoover—revolutionary in principle and in results. It is suction plus sweeping plus the beating action of Positive Agitation.

Positive Agitation is a separate and exclusive Hoover cleaning principle, developed to get out dirt which ordinary suction and sweeping cannot dislodge—the deeply embedded, germ-laden grit which inevitably destroys the life of floor coverings.

Positive Agitation, by gently tapping the rug two thousand times a minute with smooth-polished beater-bars, flutters out this deep-wedged and destructive grit. As a result, The Hoover removes 33⅓% more dirt than the *best* of other cleaners.

Why not send for a Hoover and compare it with other cleaners? Simply phone your local Hoover dealer for a Hoover Home Trial.

The Hoover is only $6.25 down; complete with Dusting Tools or Dustette. Balance monthly. Liberal allowance for your old electric cleaner. The Hoover representative who will call is a permanent member of your community, bonded and trustworthy.

THE HOOVER COMPANY
North Canton, Ohio

The oldest and largest maker of electric cleaners
The Hoover is also made in Canada, at Hamilton, Ont.

$ ONLY 6.25 DOWN

The HOOVER IT BEATS . . . AS IT SWEEPS . . . AS IT CLEANS . . . ON A CUSHION OF AIR

PRESS OF JUDD & DETWEILER, INC.
WASHINGTON, D. C.

Mother—

you simply must get him a pen! . . *Since he started to school mine is never about when I want it*

While Parker Duofold owners do not share the general aversion to lending (because no hand distorts this miracle point), yet to deprive them of their pet pens is carrying a good thing too far.

With school days here again, let's keep everybody happy—those who learn as well as those who earn—by assembling at the nearest Parker Pen counter.

Let's note especially that Parker Duofold Pens are all Guaranteed for Life, even the Duofold Jr. or Lady Duofold at $5. You'll find pens of other makes priced 50% higher that have 22% to 69% less ink capacity. And none has Parker's Pressureless Writing Point, Invisible Filler, and streamlined style—"America's shapeliest"—with Patented Clip that lets the Pen or Pencil set low in the pocket; without bulge in the bag.

Come on, School Days—Duofold's ready to go! Ask to try Parker's new Ball point—smooth as a bearing.

"HEAVEN-SENT INK"
is the name mother gives to Parker's
WASHABLE QUINK

because plain soap and water removes it completely from clothes and other fabrics. For home and school use, it is folly now to use ordinary ink.

For business, Parker's PERMANENT QUINK—the only ink we know that is permanent in all colors.

Parker's new Quink not only dries so quickly that few ever stop to blot, but it contains a solvent that actually KEEPS A PEN CLEAN!

Ask for "Quink" not "ink" at your dealer's, or write us for 30,000 word bottle free. Indicate washable or permanent.

Parker *Duofold*

PEN GUARANTEED FOR LIFE • $5 • $7 • $10

Other Parker Pens, $2.75 to $3.50; Pencils to match them all, $2 to $5

The Parker Pen Company, Janesville, Wisconsin. Offices and Subsidiaries: New York, Chicago, Atlanta, Buffalo, Dallas, San Francisco; Toronto, Canada; London, England; Berlin, Germany