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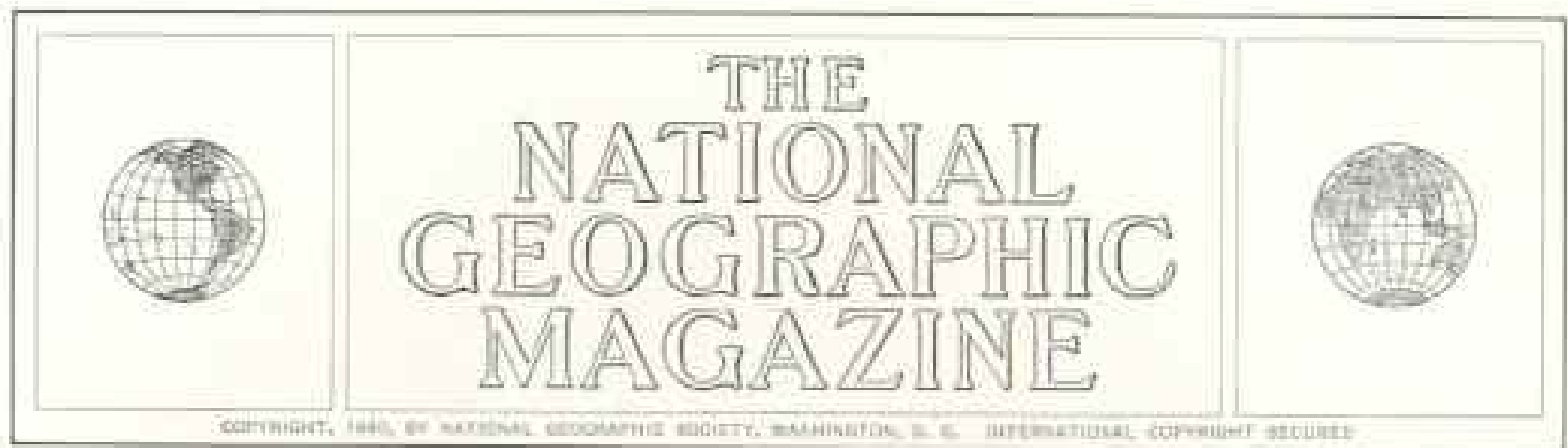
THOR HEYERDAHL

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British West Indian Interlude

BY ANNE RAINEY LANGLEY

With Illustrations from Photographs by Edwin L. Wisner

THE green cone of St. Christopher's, more familiarly known as "St. Kitts," stood starkly upon the blue Caribbean as we approached. After five days at sea land is a lovely sight.

The *Nerissa* dropped anchor, and the shrill song of the boat boys shattered the spell of the sun to welcome us to Britain's mother colony of the West Indies, founded in 1623.

Sweeping in a giant crescent around the northern and eastern boundary of the Caribbean lie these romantic West Indies. The Lesser Antilles include many of the smaller islands of this region, especially the Leeward and Windward groups, owned mostly by Great Britain.

British holdings are now divided into three administrative groups, each headed by a colonial service governor.

The Leewards include, among others, Antigua and its dependencies; the British Virgins, and Montserrat; St. Kitts and its dependencies.

The Windwards include Grenada, St. Vincent, St. Lucia, and Dominica. The last-named, though geographically belonging to the Leewards, became a separate colony of the Windward group for administrative purposes on January 1, 1940.

The Leeward Islands were so named because they are less exposed than the neighboring Windward group to the prevailing northeast trade wind.

Barbados stands alone, under an elective House of Assembly (map, page 5).*

* See, issued as supplements to the NATIONAL GEOGRAPHIC MAGAZINE, The Society's Map of Mexico, Central America, and the West Indies, December, 1939, and Map of the Atlantic Ocean, July, 1939.

Spreading out on either side of St. Kitts' gray stone Government House, the water front at Basseterre is gay as a carnival (Plates VI, VII). Calico-clad black women with laughter in their eyes stroll along with huge wooden trays of food upon their turbaned heads, their hands busy with crocheting or with the weaving of fish nets (page 22). Everywhere boys and girls run about, calling the wares in their "penny parcels."

Food Cheap; Marriage Costly

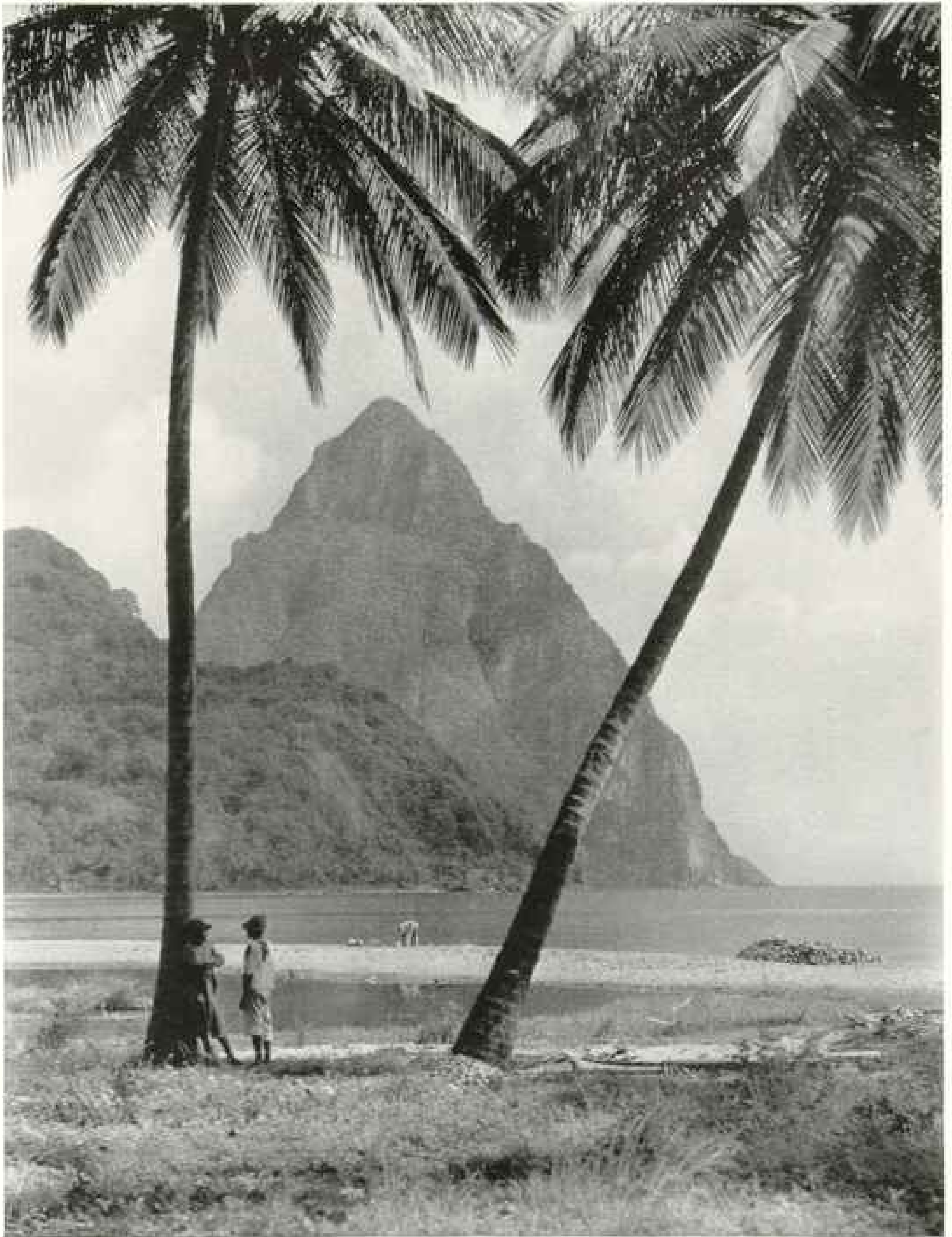
How simple housekeeping would be in this sunlit island, where an English penny will buy 4 large tomatoes, 2 avocados, or 3 papaws!

When I remarked upon this enviously, my hostess smiled. "Almost anything in the islands may be had in a penny parcel, with the exception of a marriage license. That costs 96 cents and is often a prohibitive luxury to many swains."

They say one can look nowhere in St. Kitts without seeing the green blades of sugar cane. The sugar estates on the island are encircled by a light railway with a rolling stock of a dozen small trains. These trains collect all the sugar crops and deposit them in one central factory.

To see the sugar factory in operation, we went when the moon was new. The place was illuminated by flames from big furnaces. We watched the loading of cane in the carriers and saw it whirling through huge revolving knives.

Next, the chopped cane was shot through a crusher and then through three rollers, where the sucrose content was extracted by pressure of the rollers, the process being aided by



Straight from the Sea the Petit Piton Thrusts Up Its Spearhead, 2,461 Feet

With lush tropical vegetation and rugged terrain, British St. Lucia is an artist's dream of natural loveliness (page 23 and Plate II). Travelers who wish to visit this charming scene near Soufrière take the "water taxi" which plies among the islands (page 23). Larger ships dare not venture here. Through the ages the West Indies have known ups and downs. They are tops of mountains once much higher but now partly submerged. Consequently, there are many shallow bays in which dangerous rocks lie close to the surface.

spraying the cane with hot water and with cane juice extracted by the last set of rollers.

At each stage the cane passes through careful chemical analysis, and every load is weighed to determine gain or loss in production over the preceding week, for among the islands there is keen rivalry in sugar milling. The week before, St. Kitts had broken previous local records in turning out 2,112 tons of sugar in 142 hours, and there was suppressed elation among the workers during our visit.

After the raw juice was limed and heated, it was put in vacuum pans and evaporated by concentration. We watched the final crystallization and saw ton after ton of champagne-colored crystals pouring from the centrifugal into huge containers.

Machines Start a Job; Feet Finish

In describing the process the following day, someone remarked: "One thing strikes me strangely about this sugar milling. Everything is handled by the most modern machinery until the very end, and then the workers shove the sugar with their feet."

This enterprising island, though its area is only 68 square miles, thrives not by sugar alone. A cotton ginnyery is being put up, and less than a mile from Frigate Bay are big salt ponds, where the poorer people gather their share in pails from the white mounds. Much of the salt is bagged and shipped out in sloops to small surrounding islands.

For the fruit lover here is paradise. Early 16th-century Caribs called St. Kitts *Liamuiga*, (the Fertile Island). Today that name would still be apt. Guavas, limes, avocados, chile plums, sapodillas, cashews, grapes, and sour-sops grow luxuriantly. There are also small, sweet, seedless grapefruit, Julie mangoes of subtle flavor satisfying to the most jaded palate, and my favorite of all, the granadilla.

Until I visited in St. Kitts, I had not heard of granadillas. The native superstition that he who plants a granadilla tree will not live to see it bloom does not deter one from eating the fruit. Tart as a lemon, with the sweetness of a grape, to which it is similar in flavor, the granadilla tastes best when combined in a compote with mountain strawberries, lady fingers, and papaw.

The white people of St. Kitts number only a small fraction of the 18,000 population. However, their lives are tuned to a peace fed by fragrance and the bright sun of eternal summer.

On George V Day we were invited to an 11 o'clock breakfast at Upper Spooner. We drove along cool roads arched with the feathery shade of casuarina trees and passed a cottage

half hidden under a wealth of golden chalice lilies. On Jack-in-the-Box Road a cane-laden donkey brayed a heehaw of welcome. The fragrance of myrrh and wild sage left a lingering sweetness in the air.

When we reached the road that divides St. Mary's Parish from St. Peter's, to form the boundary of the high hill called "Upper Spooner," we glimpsed a monkey swinging back to his hide-out in the mango trees.

Below Upper Spooner to the east a row of royal palms stretches single file across a soft green savanna to the sapphire sea. Northwest of the red-roofed town of Basseterre, the sharply defined peak of Mount Misery rises to an altitude of 4,314 feet.

On the southwest side between Mount Misery and the sea stands saddle-shaped Brimstone Hill, 779 feet high, historically the most interesting point in St. Kitts. Carib tradition calls it the summit of Mount Misery, blown completely out and deposited upside down on its present site! At its seaward base there is nearly always a strong sulphur smell which has given the hill its name.

Brimstone Hill, Carib "Gibraltar"

A dismantled fortress of limestone overlying volcanic rock occupies the top. Here Sir Timothy Thornhill in 1690 first planted the English guns (page 6).

The massive fortifications on Brimstone Hill played a proud part in West Indian history, from the memorable attack made upon St. Kitts in 1782 by the Marquis de Bouillé down to the time of the Crimean War when it was abandoned.

Today there are barracks, messrooms, and magazines upon the walls of which are crudely carved names of valiant men who fought there more than 200 years ago.

In the sunlit serenity of Upper Spooner we breakfasted beneath the rosemary trees and then came home along St. Peter's road, where the pale-yellow blossoms of cotton plants colored the countryside. Over St. Peter's old stone church, like a flaming accolade, a flamboyant tree spread its scarlet beauty against the sky.

That night we dined at the Walk, one of the loveliest island homes I have visited. Built in tropical style with all rooms opening upon a broad gallery, it overlooks its own palm-fringed swimming pool. We dined on turtle pie to the soft, sweet song of a night bird.

Turtle pie, West Indian style, is food for epicures. And it is doubly enjoyable when advertised the preceding night by a crier calling beneath one's window, "Fine and fat . . . green-back turtle . . . to be slaughtered in



Barbados Lightermen Both "Bend to" and Bend Their Oars

The long sweeps, fashioned from slender trees which grow on the island, furnish tremendous leverage in the hands of husky boatmen. Every trip for a load from a vessel anchored out in the Bridgetown roadstead is a race among these small craft.

the public market tomorrow morning . . . six pounds for one dollar . . . ready cash . . . no credit . . . God save the King."

After dinner we watched the fireflies scatter their green glow in a cluster of passion-flowers. And that is a night upon which my memory likes to linger.

St. Kitts a Little Bit of Britain

Driving home from the Walk beside a singing sea, we came to Old Road Bay and town, the landing place of Sir Thomas Warner. We passed Bloody River where the French and English combined to repel a mass attack of the Caribs.

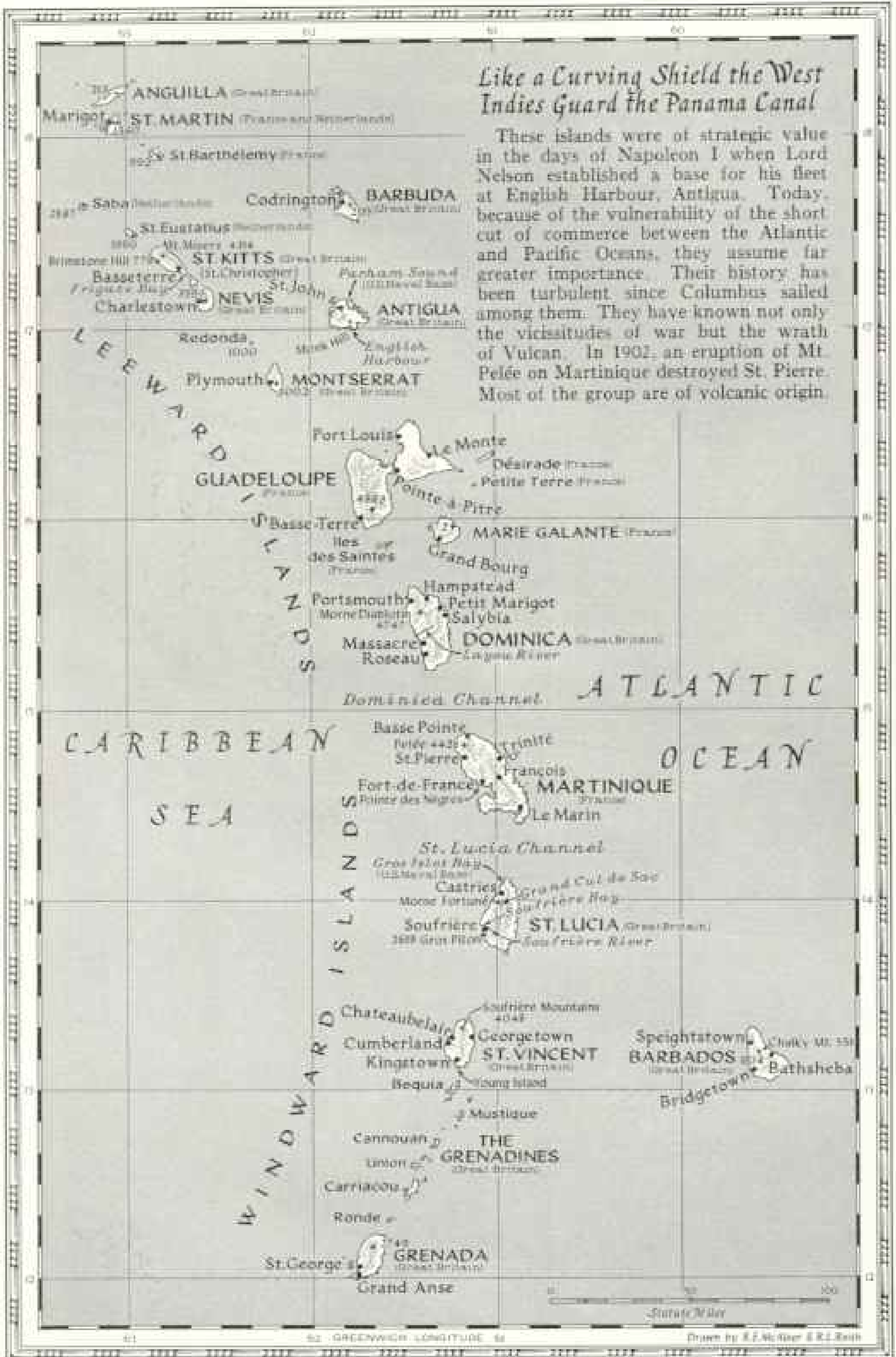
Thereafter St. Kitts became a bone of contention among the Spanish, Caribs, French, and English. It was ceded to Great Britain by the Treaty of Utrecht in 1713, fought over by the French again in 1782, and finally restored to England by the Treaty of Versailles in 1783.

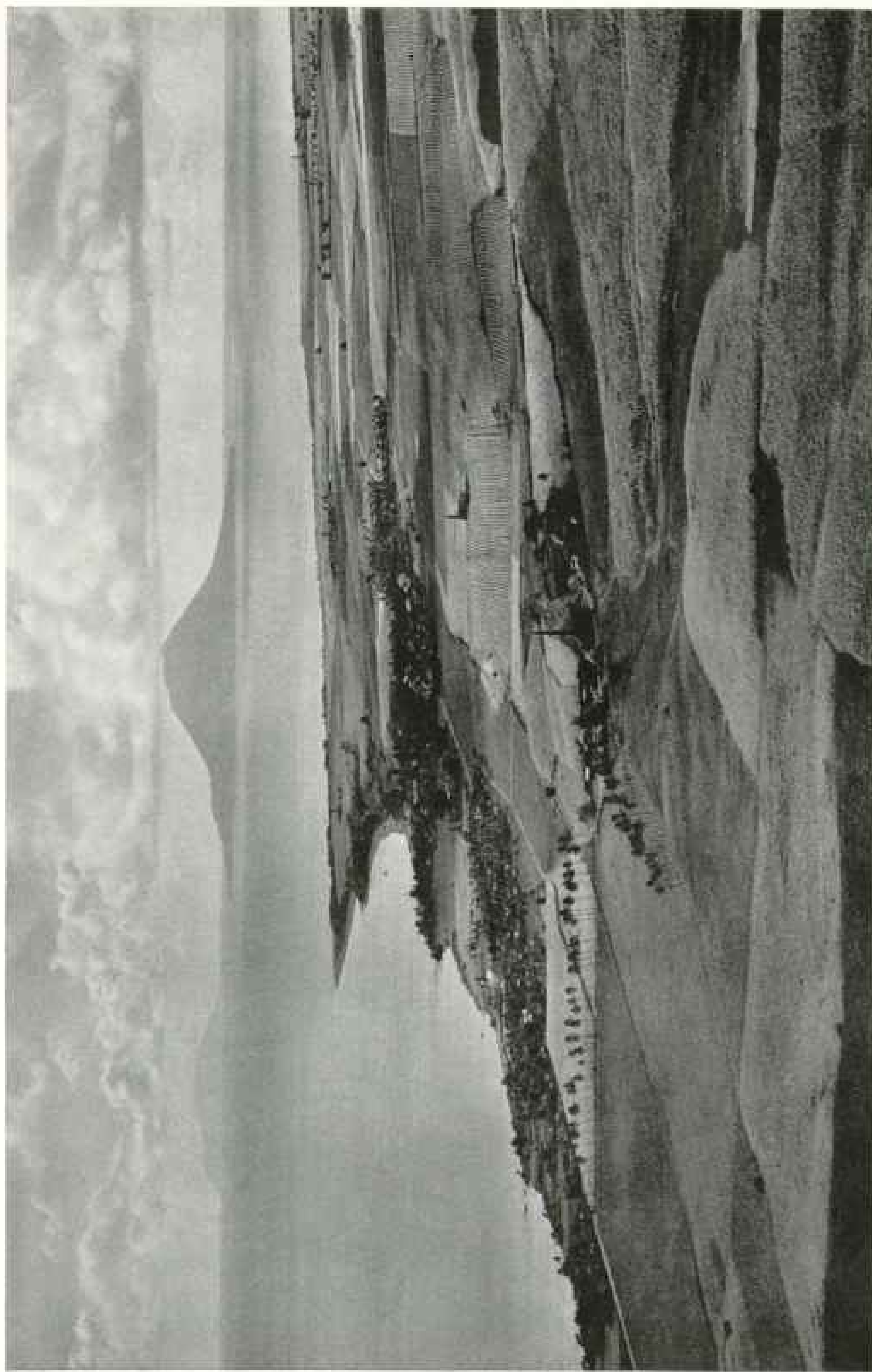
Few traces of influence other than English remain in this little bit of Britain. A circular plaza called the Circus is the focal center of commercial life. The stately gardens of Pall Mall Square face a stone Georgian house built more than a century ago.

At the opposite end of the gardens stands an old frame courthouse where the legislature meets. Occupying the upper story is George King's Museum where one may see a phantom picture of St. Kitts: Carib implements from the 17th century, old sabers, and rusty firearms recall an era when battles were fought valiantly.

Romance is there, too, in a French music box, dated 1823, said to have been brought by a young officer in the Spanish army to his English bride. A graceful urn of white stone bears witness that slaves were baptized in the British colonies.

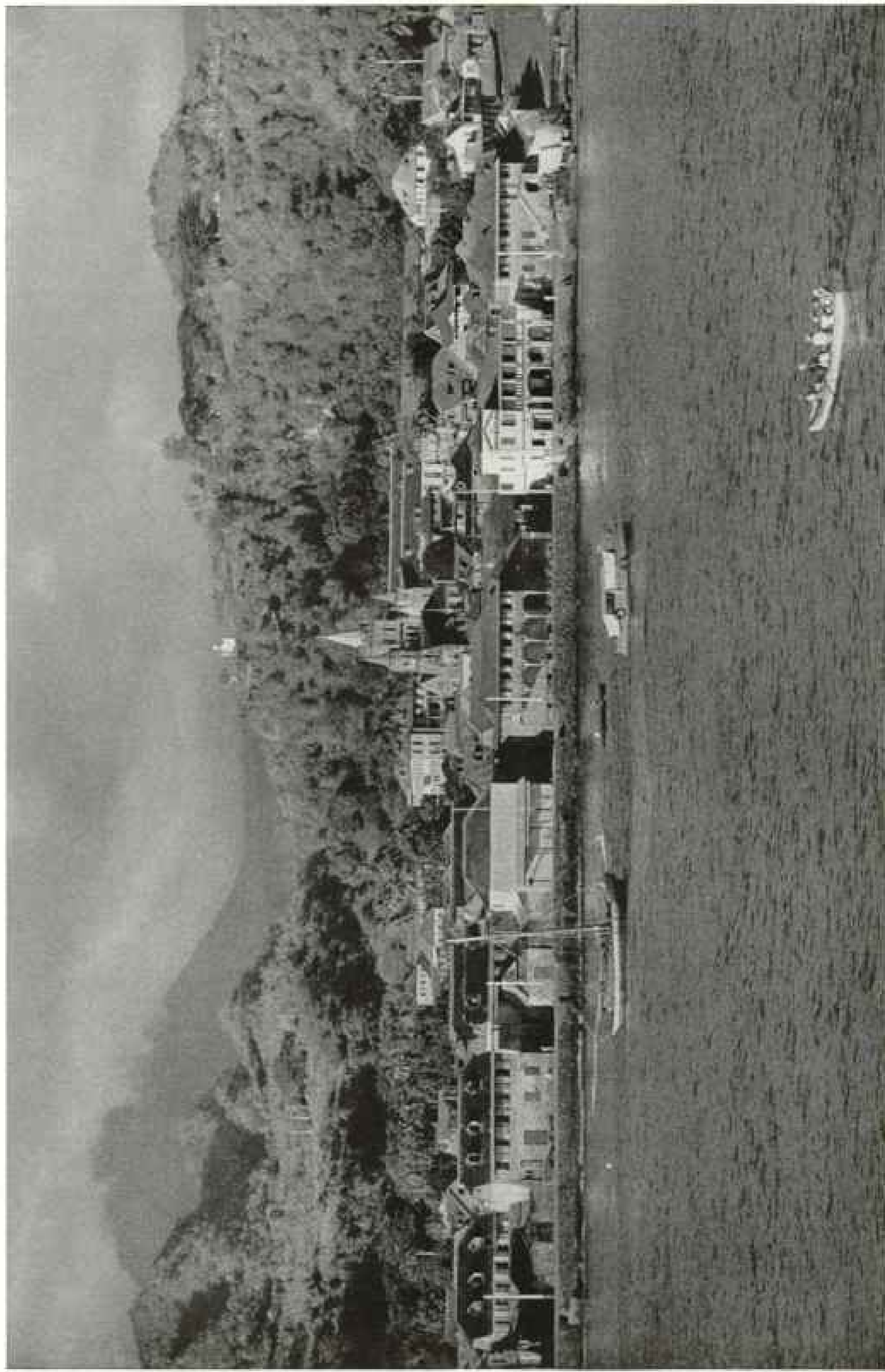
Fifty miles east of St. Kitts lies the oval-shaped island of Antigua. Low, sweeping





Northwest of Brimstone Hill, St. Kitts Spreads Out Its Patchwork Quilt of Sugar Fields

Dutch-owned Saba, the "Crater Treasure of the West Indies" described by Charles W. Herbert in the NATIONAL GEOGRAPHIC MAGAZINE for November, 1940, may be seen in the left distance. The nearer island is St. Eustatius, also belonging to the Netherlands. On the eminence from which this photograph was taken stand the ruins of a limestone fortress where in 1690 Sir Timothy Thornhill placed an English battery (page 3).



Crowding the Shelllike Shore, Mountains Seem To Be Pushing Roseau into the Sea

This Dominican town has no harbor, and ships must anchor in the open roadstead. The Cathedral spire points toward a shrine high on the Morne (page 17).

hills slope up panorama fashion from the curving shoreline. The spacious harbor of St. John's, capital of this island, is lined with coral reefs and is too shallow to admit larger ships. We took a small launch from the *Lady Drake*.

White terns flew out to meet us. Island traders waved a friendly greeting from small sailing sloops. On the white sands of Fort James beach we saw a gay group of swimmers sharing the meager shade of Spanish needle trees.

There is a sparkle about Antigua, seat of government of the Leeward Islands. It is evident in the freshly painted white frame houses, the clean streets, and the happy people. No sooner had we landed than we were surrounded by pretty creole girls selling strings of sea shells.

"A penny, please," one called. "Take mine, mistress, it is yellow like the moon." And another, "Take me, my lady, a penny for a pink pretty." She held up a string of sea shells, pink as shrimp under the water.

We were entertained at a tea party at Clarence House, present residence of the Governor. The house was originally built by English stonemasons for Prince William Henry (afterward Duke of Clarence and King William IV) when he was on the Leeward Islands station in command of H.M.S. *Pegasus* in 1787.

We followed the narrow footpath that leads from Clarence House down to Nelson's dockyard in English Harbour, carefully avoiding the poisonous leaves and berries of the manchineel trees. Here the great English admiral Lord Nelson passed much time in his earlier career, when he commanded H.M.S. *Boreas* on the Leeward Islands station—1784-1787. Then the harbor was infested with a plague of yellow fever, which took its toll of as many as a dozen deaths a day.

Antigua's Blue English Harbour

Today, Antigua, with a population of 34,000, is free of fever and acclaimed among islanders as a health resort. The main buildings in the dockyard are built on a flat stone spit with sheer sides running down into the blue waters of English Harbour (page 21).

We were fascinated with the sea anemones living attached to the sides of the quays. They look like ordinary field daisies until, at the slightest movement in the waters around them, they instantly draw in their petal-like tendrils and remain cautiously closed.

Adjoining a saw-pit in the dockyard is the Admiral's House. Although it has been restored in recent years, it still lacks any semblance of charm. The frugal furnishings are

sadly in need of cleaning. The old pineapple poster bed, in which Nelson is said to have slept, looks lonely and somewhat irrelevant.

Across the harbor we could see the first navy yard, and to the south the mirror-smooth waters of Freeman Bay—a ship's haven in hurricane months.

As we drove home from the dockyard along William IV Road, Sugar Loaf Mountain etched its long green shadow against a saffron-swept evening sky. The little weather-beaten shacks along the road seemed to be sprinkled with gold dust.

Black Satyrs Caper to Calypsos

At the village of All Saints a dozen diminutive satyrs pranced across the road. With hibiscus in their shiny black hair and an exquisite rhythm in their wiry black bodies, they capered about to a calypso of their own making. Calypso songs recall old ballads with a recital of modern news events in rhyme, such as a popular one entitled "Roosevelt Visits Trinidad."

We stopped the car to toss pennies to the singers, and one not more than five years old sprang to the running board, chanting a song about "the mistress—she is wise with her pennies."

At Devil's Landing we passed a procession of wrinkled old women who rode their donkeys and balanced as many as six "monkeys" (water jars) upon their heads.

The natives of Antigua know no aid of a potter's wheel. With their thumb and forefinger, a small stick, and a piece of string—to level off the bottom—they work wonders with the crude clay which they dig from the earth. All along the William IV Road we met men, women, and children carrying squat little jugs and tall, graceful vases which they were taking to market.

The market in St. John's is interesting (Plate IX). In one stall we saw hundreds of bright yellow pumpkins, ready to be shipped to the States for Thanksgiving pies.

Although Antigua is subject to severe droughts, fruits and vegetables thrive well, because the soil is very retentive of water. Sugar is the principal industry, however, in this island of 108 square miles, and there are two modern sugar factories.

Workers in the cane fields receive 20 cents an acre. When I asked how much this would amount to a day, I was told by one of them: "Tomorrow, please God, I does de whole acre, as de rent up Saturday."

Incidentally, the rent in question was 48 cents for one week. There you have the West Indian native's philosophy.

West Indies Links in a Defense Chain



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Pinak by Edwin L. Wisbert

Man Power Operates a St. Lucia Lumber Mill

In the meager shade of banana plants, cedar logs are sawed into boards for housebuilding. The worker on top pulls the saw back for the downward cutting stroke performed by the two below, a method in use for a century in the Lesser Antilles. Like a series of steppingstones, the Lesser Antilles curve around the eastern Caribbean from Puerto Rico to Trinidad.



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British St. Lucia, Long Fought for by England and France, is Soon to Have a U. S. Navy Base

Jutting into the harbor of Castries are the courtyards to which ships bring their cargoes to be carried to the bunkers in baskets—usually on the heads of strapping women. This photograph was taken from Morne Fortuné, eminence captured from the French in 1796 by British forces under Major General John Moore. For outstanding gallantry his regiment was permitted to fly its own colors over Fort Charlotte for one hour before the Union Jack was hoisted.

Photo by Edwin L. Wheeler



© National Geographic Society

Carib Baskets Are Still Made on Dominica

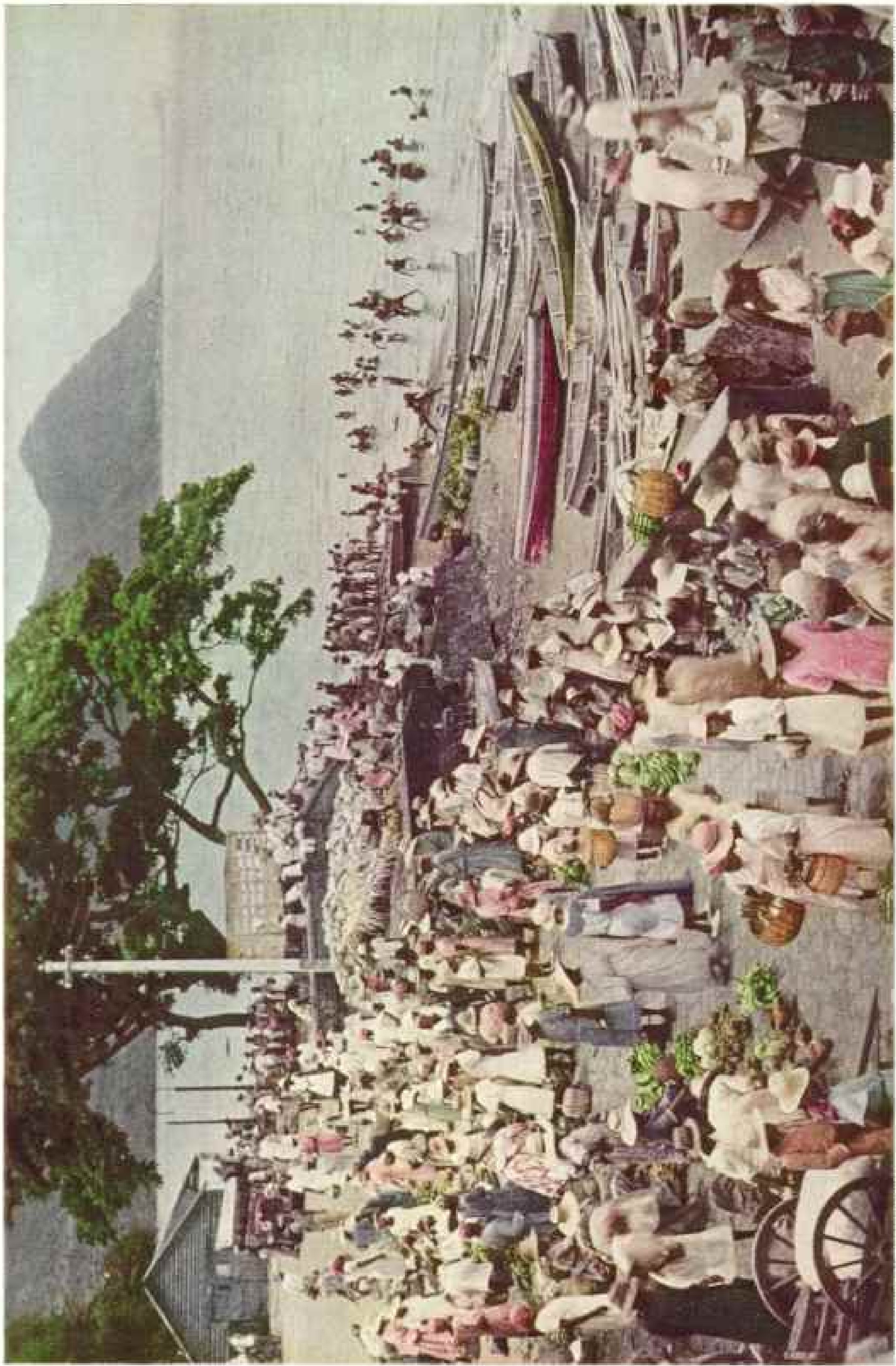
Present-day natives, like the original Indians found by Columbus when he came to the island in 1492, still practice the weaving craft handed down through centuries. In Roseau these hampers are used by head carriers.



Photos by Edwin L. Wiskard

St. Lucia Styles Came from Paris Long Ago

When Creole women go to church on Sunday, they wear bright madras turbans and flowered dresses with voluminous skirts caught up to reveal stiffly starched petticoats. Customs and dress are evidence of French invasions.



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Roseau Boys Still Dive for Gold Lost for a Century

Legend relates that more than a hundred years ago the *Two Sisters* put into this Dominica harbor to deliver a chest containing nearly \$200,000 in coins of Portugal. The treasure fell overboard as it was being transferred from the ship to a small boat. To this day an occasional *peço* is recovered. One of these, struck in Rio de Janeiro, bearing the date 1767 and countermarked with 20 and an eagle, was shown to the author.

Photo by Edwin L. Wheland



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The Roseau Peddler Carries a Two-Story Shop

With a basket of sweet potatoes on her head and a pan of cashews in her hands, she is ready for customers on both "floors." The cashew is a fleshy fruit; part of which is eaten raw, the rest roasted as a nut.



Picture by Edwin J. Wilmer

"Exotic" Describes Their Color and Scent

Large blossoms of the cannon-ball tree perfume the tropic trade winds in Basseterre, on St. Kitts. The strange tree is a relative of the Brazil nut, but its fruit is a ball filled with pulp sometimes used to make a cooling drink.

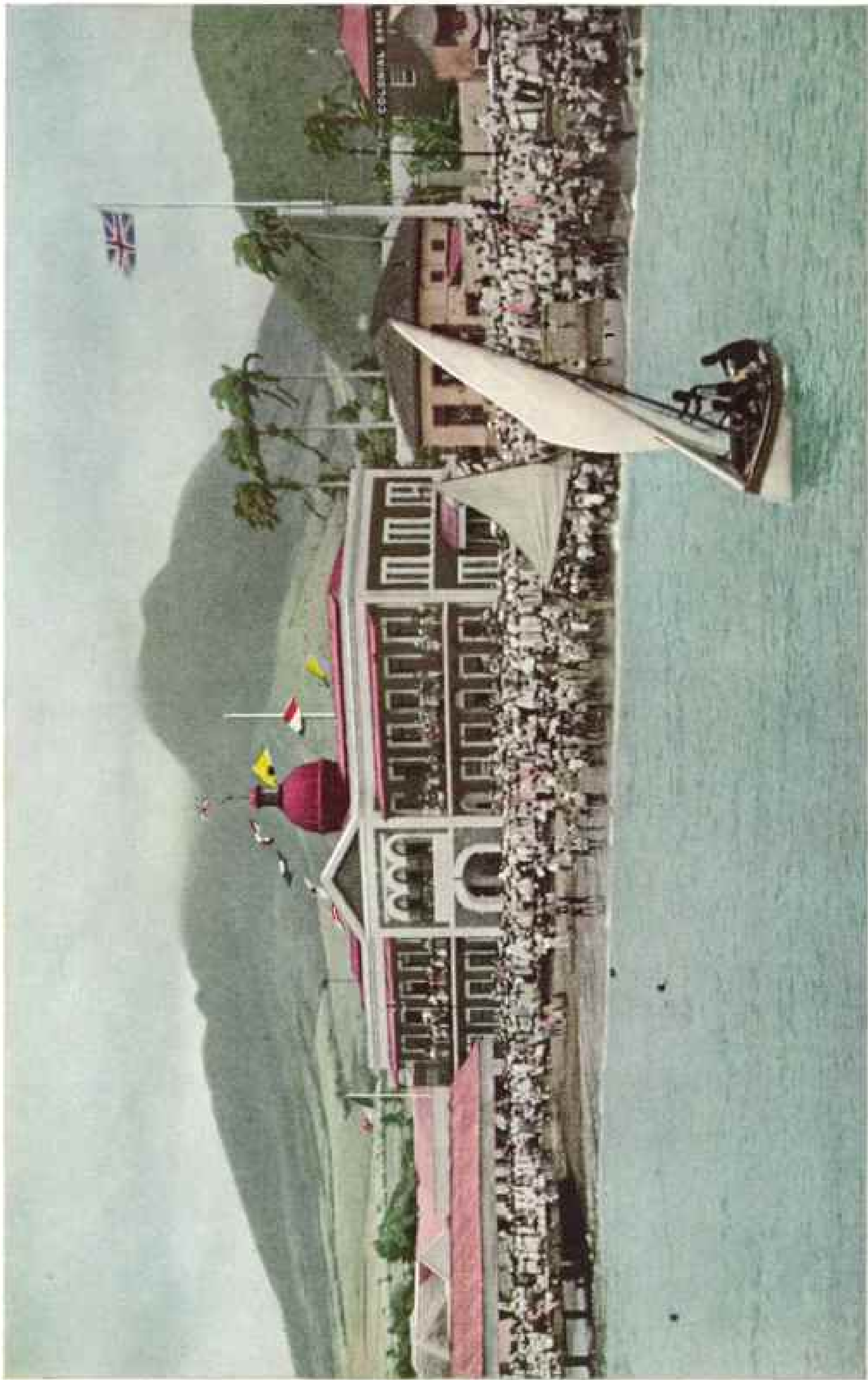


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Photo by Edwin L. Wisner

To Celebrate the Silver Jubilee of King George V, Basseterre Natives Had a Field Day

They showed their loyalty to the British sovereign by gathering in Warner Park, where the governor reviewed the police force, Boy Scouts, and Girl Guides. After the ceremonies there were foot and bicycle races, jumping contests, and other sports. Visitors to St. Kitts feel that this faraway island is a "bit of old England."



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"The Sun Never Sets on the British Empire"—of Which St. Kitts Is a Proud Outpost

At the celebration of the Silver Jubilee of King George V in 1935, the Basseterre Treasury building, which also houses the administrator's office, the customs, and the post office, was the center of festivities on the water front. There were sailing, swimming, and tub races here and land sports in Warner Park (opposite page). St. Kitts (St. Christopher) was discovered by Columbus in 1493.

Painted by Edwin L. Wilbur



In Castries Corpus Christi Celebrants Honor the Farmers' Patron
Agricultural laborers decorate with bread, flowers, leaves, and fruits their altar to St. Isidore.



© National Geographic Society

Picture by Edwin L. Wiskerd

St. Lucia Is an Eden of Tropical Fruit

Here are bananas, oranges, breadfruit, cacao, papayas, coconuts, plantains, mangoes, avocados, limes, mamee apples, and the *gandbana*, or *soursop*—palate pet for drinks and ices (extreme right).

Unless a necessity arises, the desire to make much money remains remote. Like the African porter, they "fear no future, regret no past, and completely enjoy the present."

Regarding the future, however, they make no statement without the qualifying phrase of "please God." For instance, when Aimée, our cook, bids me goodnight, she says, "Goodnight, madam, until tomorrow, please God."

One evening after a swift slanting rain we followed the clang of an Anglican church bell to the dim cavern of the Cathedral in St. John's, a structure that is virtually two buildings in one.

As protection against damage by earthquake, the great stone exterior has a complete inner building of pitch pine.

As we came out of the impressive building into the sun-splashed street, the criers were calling their wares: "Garlic! Get you garlic! One penny!"

A small sable-skinned woman in a voluminous flowered skirt stepped across the pavement, saying softly as she held out a cluster of white spider orchids, "Only a thruppence please, mistress! All de way from Monk Hill I carries 'em."

I thought how Fifth Avenue florists would rhapsodize over the yellow butterfly, the purple bee, and the white spider orchids that cluster at random in the tall trees on Monk Hill.

Dominica Spouts Fountainlike Cascades

The morning we boarded the boat for Dominica we saw the silver shadow of a plane silhouetted against the green waters in St. John's harbor. I shall not soon forget our last glimpse of white surf breaking against the reefs and a tall tufted palm leaning from the beach.

A favorite boast among Dominicans is, "There is a river for every day in the year." Though this statement is an exaggeration, rivers are indeed numerous, and some of them form mighty waterfalls in their journey from the mountains to the sea.

Sandwiched between the French islands of Martinique and Guadeloupe, about 25 miles from each, Dominica is almost twice as large as St. Kitts and Antigua combined, having a total area of 305 square miles. It was recently transferred to the administration of the Windwards (page 1).

Although this island has been under the British flag since 1783, former French invasions have left their influence. Today that influence is evident in the French dialect which is spoken by the majority of peasants. Of a total of 50,000 inhabitants, probably less than two per cent are white.

In the rugged forests are birds of rare plumage; several species, the Dominicans say, are indigenous to this island. The largest Amazon parrot in the world, the great sisserou, has been reported within the wild forests near Morne Diablotin and in the southern mountains. The slightly smaller jacquot also finds its sole habitat in the mountain tops of this wooded island.

Four species of humming birds are to be found in the interior, one of them a rare kind called by Dominicans *jou jou bleu*.

But the bird which most delighted us is the *trembleur*. This golden-brown creature carries a long tail stuck up over its back. Its wings, drooping below the body, tremble continuously as if on springs. When all is silent and no wind stirs, the lovely liquid song of the *trembleur* may be heard echoing through the hills.

There is a night-flying bird called the "diablotin." This black-capped petrel formerly frequented the slopes of Morne Diablotin (4,747 feet in height) and was killed by the natives for food. It was thought extinct for many years, until, after a storm in May, 1932, a specimen was picked up in the streets of Roseau. Others, too, have been reported recently from Haiti.

We saw some of the huge Hercules beetles that grow to a length of six inches; and we found a small frog which does not go through the tadpole stage, but lays eggs which are hatched in the ground. The eggs are crystal clear and contain a sufficient supply of food to develop the budding frog from embryo to hopper.

But it is the large frogs called *crapaud* that in my greedy mind top all the fauna in Dominica. These "mountain chickens" are caught and penned up until they reach edible size. When cooked in fricassee style, they have a delicate flavor.

A Lime Squeeze on Gigantic Scale

Early one morning we drove along the Layou Valley road to an estate where, by means of a water wheel, thousands of limes were being crushed for the juice that brings a refreshing breath of the islands to many far countries.

Until 1922, when the withertip disease prevented the normal setting of fruit, limes were the sole produce of Dominica. Present cultivations are produced by young trees budded on sour orange stock. Farming is done without animals, and lemon grass leaves are used in place of manure. Surrounding the fruit crops are borders of this fragrant grass.

Hand-pressed lime oil is prepared by the *écuelle* process of extracting the essence di-



A Fuming Vent on St. Lucia Gives Constant Warning of Subterranean Fires

Although no major eruption has occurred since the destruction of St. Pierre, Martinique, in 1902, folk on this island, Saba, Dominica, Montserrat, and some others of the West Indies can never forget that their homes are built over an inferno. Boiling pots and caldrons breathing sulphurous smoke indicate volcanic activity near Soufrière (page 24).

rectly from the glands of the peel. The fruit is rolled firmly over blunt pins arranged about a funnel-like copper vessel which serves to drain off the expressed oil.

This oil, the most valuable of the lime products, is used in the manufacture of soft drinks, particularly high-quality ginger ale.

Distilled oil of limes is a by-product of the manufacture of lime juice.

When the seeds have been removed from the limes and the pulp is separated, the juice is sent through large pipes to storage vats where it is left to settle.

Then the oil floats to the top, and the lime juice is drawn from the bottom into small vats for shipping to the United States. This oil, which is used for making perfume, is distilled in a copper kettle, then run into a cooler where the water is drawn out.

Down the Roseau Layou road past women who carried double-decker burdens of kindling and vegetables upon their heads, we saw fields

of *vettiver*. This sweet grass, roots of which are tied in bunches and sold by native women, lends a faint fragrance to linens and helps keep moths and crickets away. The peasants call it *khus-khus* and sew it into pastel-colored sachets which they sell for sixpence.

The sound of an alien song in French patois welcomed us as we rounded the bend by an old water mill.

The Making of Copra

Squatting on the ground were dozens of gaily turbaned women, with cutlasses between their knees, breaking out coconut for copra. Punctuating each phrase by a flash of broad steel blade, they sang a song of their own making about "*tire de coco*."

The coconuts are first cleaned, then put in a steam drier for 36 hours until they contain only five per cent moisture. The copra is shipped to London (formerly also to Rotterdam) to be used for margarine and soap.



A Jungle Giant's Garden Is St. Lucia

No other island in the Leeward or Windward group has more luxuriant tropical growth. Here tree ferns and bamboo grow to enormous size.

We watched a champion coconut husker of Clarke Hall, a black boy of 13, who in a day can do a thousand coconuts, single handed, on a pickax. More than a million coconuts were exported from Dominica in 1937 and 1938.

Natives Dance "The Cocoa"

As fascinating to watch as the copra breaking is the natives' cocoa dance. The cocoa (cacao) beans are put in a sweater and fermented several days. Then they are taken out and put in trays to dry. When the beans are thoroughly dried, the cocoa pickers shuffle over them with their bare feet, keeping an intoxicating rhythm to their own bantering song.

When I asked the reason for this, a little black boy told me, "Shufflin' make 'em shiny, mistress, an' white folks pay more for shine."

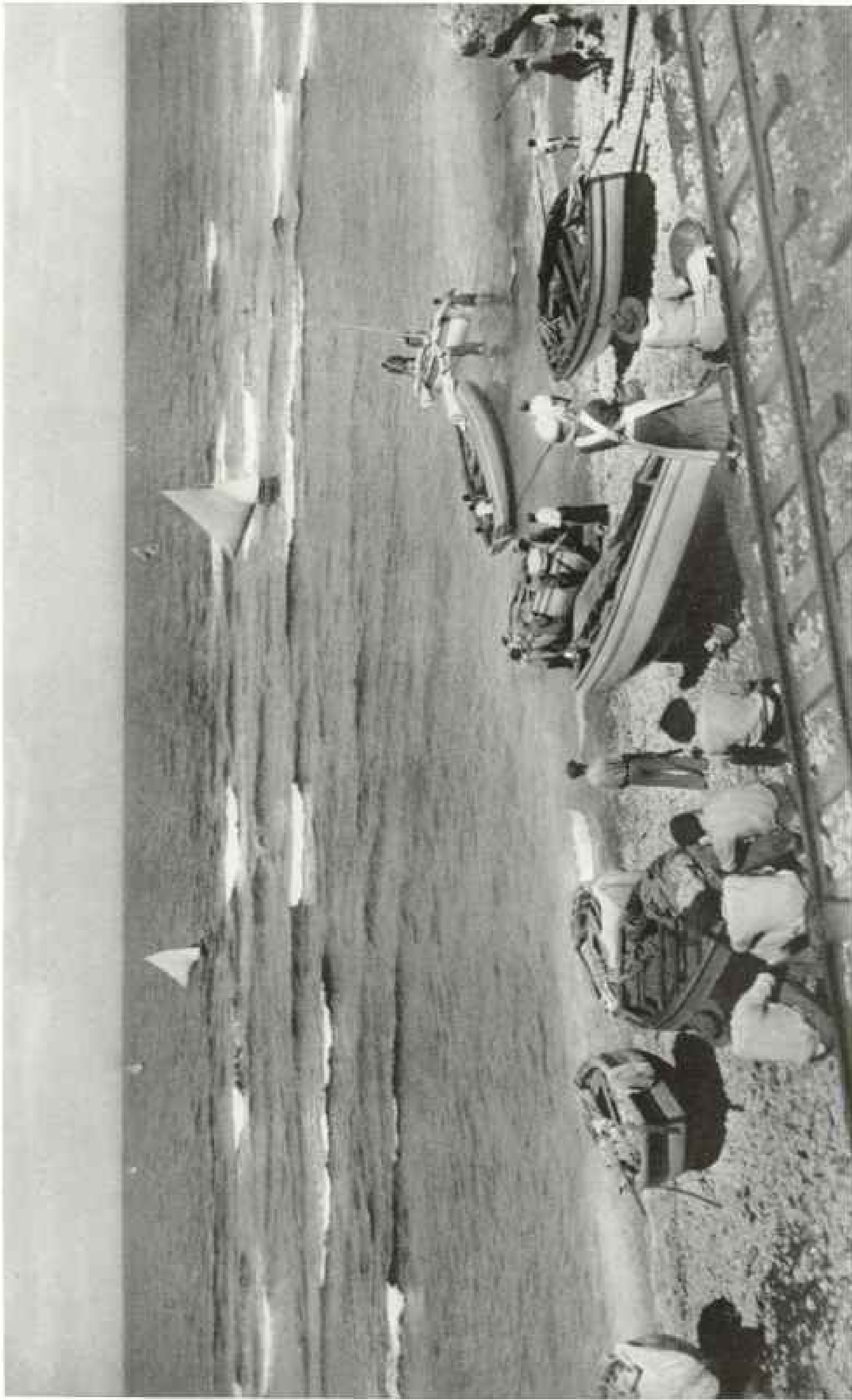
At Clarke Hall we ate preserves made from the angular fruit of the carambola tree, and crapaud fricassée. A dessert of tropical fruits was followed by calabash finger-bowls.

Late that afternoon, driving back to Roseau, we passed through Massacre village where blossom-sprinkled toy houses crowded the road. Brown-skinned laborers, coming from an adjoining tobacco estate, touched their foreheads in passing, murmuring: "Good day, mistress."

As the road curved out toward the sea, we drove more slowly, reveling in the colorful rendezvous of sun and shadow. It was then that we finally saw the sight so dear to the heart of all islanders. When the sun has just set, a shaft of green light shoots skyward. In the islands, looking at it is called "watching the emerald drop."

At the northwest end of Dominica lies the village of Portsmouth, which can be reached only by launch from Roseau, a trip of about three hours. We went on a banana boat which carried an excursion of black people over for the two-day holiday commemorating Whitsunday.

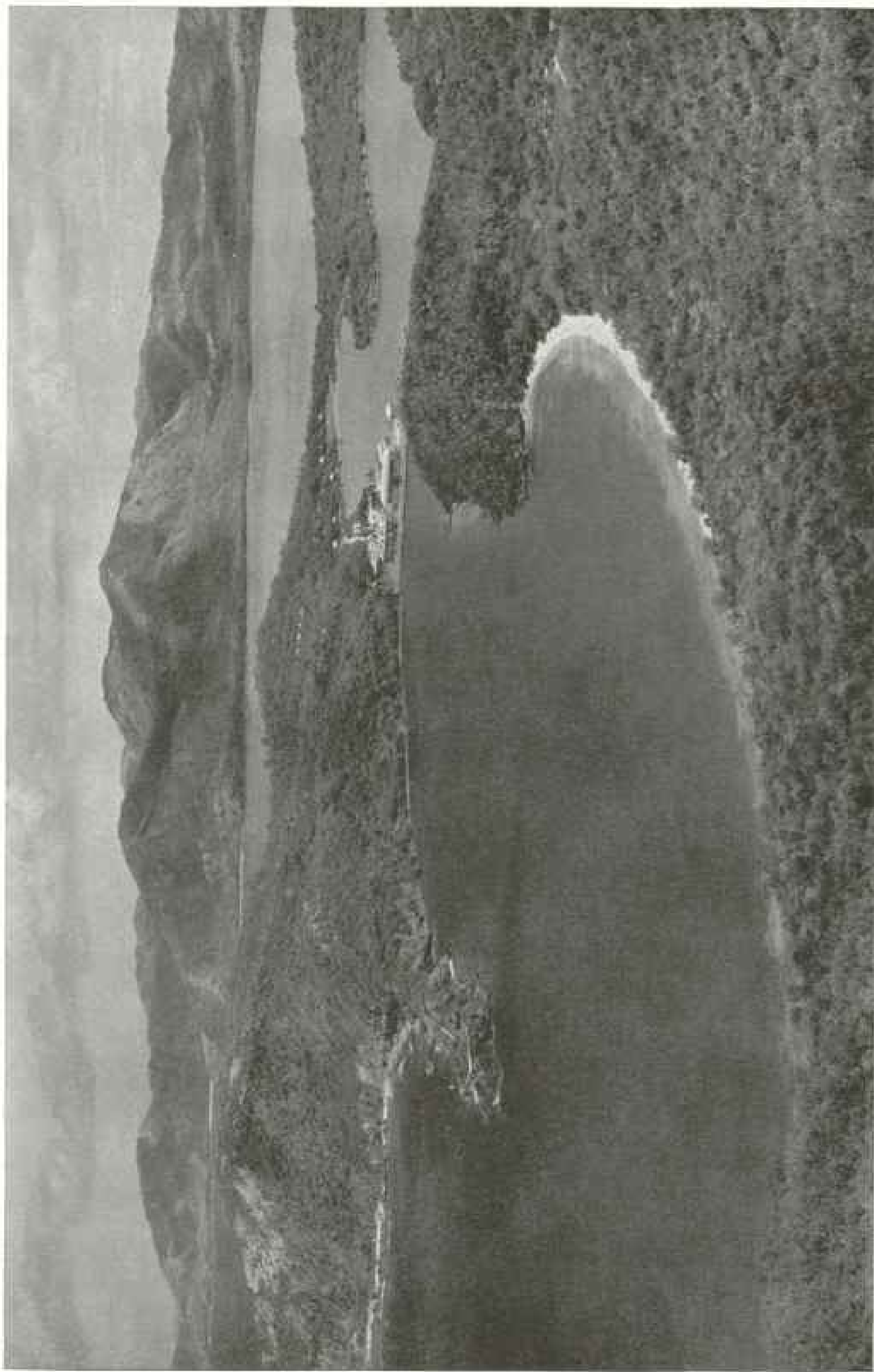
In an 18-foot launch, with a seating capacity



© S. J. Barnett

Before a Strong Trade Wind, the Flying Fish Fleet Comes in to Bathsbeba

A reef which makes the water near this popular Barbados beach calm and safe for bathing is a tricky hazard for fishermen in their 16-foot boats. They must judge the breakers perfectly and steer a careful course to shore lest they capsize on the rocks. Though spills are frequent, the sailors make a joke of the dangerous adventure of swimming home (page 53).



Where Lord Nelson Refitted His Warships, the United States May Soon Have a Naval Base

English Harbour was the scene of fierce action between British and French fleets in the time of Napoleon I. Built on a spit of land thrusting out into the bay, left, the town dreams of its past. The dockyards, right, still retain some of the equipment used by the famous British admiral (see page 8). Antigua is one of the islands involved in the recent trade of American destroyers for strategic sites in the West Indies.



Head and Hands Work at Separate Tasks

After finishing her day's toil in the fields, this Barbados woman has gathered a bundle of fagots to take home for the evening meal, for fuel is scarce in the island. She walks along briskly, crocheting as she goes.

for 20 persons, 32 holiday-bound negroes piled on board with their conglomeration of baggage. They all carried wicker baskets loaded with pots, ukuleles, small frosted cakes, and big bottles of rum. Small brown paper packages were redolent of garlic and lately slaughtered meat.

Five men were required to operate the launch, three of them bailing out the water which continuously seeped through the bottom. After a dozen vain efforts to crank the engine, finally one "took," and we were off!

What we had supposed was a direct boat to Portsmouth turned out to be a cruising water taxi—stopping at all the little seaside villages. Often there was no pier, and we waited while someone from shore paddled out

in a crude canoe. Then our pilot handed over the mail or a stray passenger amidst friendly shouts from our black companions.

Along the shoreline no flowers disguised the misery of gray thatched huts. No sign of green relieved the refuse-strewn shore. Ageless-looking women wearing ill-fitting ankle-length garments of the same shade as the sand stood silently watching as we pulled away. A white shrine loomed sharply from a barren perch.

We reached Portsmouth after dark. There were only the flickering beacons of candle-lit houses to light our groping way to the inn.

In the morning, driving along the northern main road to Petit Marigot, we soon forgot the discomfort of the preceding day. What the Portsmouth side of Dominica lacks in modern conveniences is more than recompensed in the lavish hand of Nature.

On high clay cliffs grow golden-back ferns of exaggerated size

and beauty. We passed the cool, leafy charm of banana-buying stations, and, rounding an abrupt bend, suddenly met the exhilarating breeze of the Atlantic on the windward side of the island.

Although not so blue as the Caribbean, the Atlantic shoreline revealed a rugged beauty in deep forests, sheer cliffs, and lush vegetation. At Hampstead we saw seemingly endless groves of grapefruit and orange trees. From distant wooded canyons issued the clear call of the mountain whistler.

Caribs Now a Peaceful People

From Petit Marigot it is about 12 miles to the Carib settlement of Salybia, which is well worth the arduous horseback ride in-

volved. In a small colony the Caribs live free of taxes on land preserved for them by the Government. They fish and farm, and weave their celebrated waterproof baskets with placid monotony.

We bought a woven "money hat" (crown 37 inches high) and a "wife leader." A wife leader literally means what the word implies. It is a 10-inch finger, woven contractively from long strips of bark. One end is left open; the other forms a grip. When I put my finger in the open end, and the leader was pulled from the opposite end, the experimenting finger was promptly imprisoned.

At the wharf that night as we waited for the return launch to Roseau, our attention was caught by a group of gesticulating negroes. Bit by bit, from their French patois we gathered that they had heard the bamboo was blooming, and they were all running from it as from fire. They said that the bamboo blooms only once in every hundred years, and that when it does, strange things are apt to happen. With the blooming comes an evil spirit who will cause the wrong persons to be attracted to each other.

Even the jail in Dominica is framed in beauty. A low white brick building covered with blue plumbago and a pink flower, it stands in the shade of the great frangipani trees which mark the border of Kingsland House gardens where we lived. To the unknown, peaceful prisoners behind those white walls we owe many moving memories. Each evening at twilight there drifted to us, with the fragrance of jasmine, the sweet stumbling song of our neighbors.

A silver sheet of rain which had enshrouded



With Every Cup a Juggling Performance Is Given Free

While the customer waits, the maubey seller, in Bridgetown, Barbados, reaches up and turns on the spigot, fills the measure, and then shuts off the stream without spilling a drop. The beverage is a sweetened tea made by boiling the bark of the maubey tree in water (page 33).

our six-hour trip from Dominica lifted like a stage curtain to reveal another of Neptune's Caribbean emeralds. In a single shaft of sunlight the irregular outline of St. Lucia, so lately still and somber under its gray sky, sharpened to a green glory of deeply wooded hills.

St. Lucia Women Carry Coal

At the foot of the hills the checkerboard town of Castries embraced the sea. In the deep sheltered harbor of the same name lay a three-masted Dutch schooner. A French freighter, loaded with sugar, hauled up an anchor chain. The silhouettes of coal carriers on the dock emerged as a black and white etching.

Coaling in Castries is carried on mainly by women. They swing up and down the gang-plank from the ship's hold to the dock, carrying large baskets of coal upon their heads and swaying their hips to a peculiar rhythm of their own.

A little money bag dangles from a cord about the waist of each. Into these, they drop the copper tickets given them with the passing of the baskets. These tickets represent English pennies and are accepted in exchange for purchases at local shops.

Fashions for Women Coalers

One sturdy coaler wore a scarlet sash looped bustle fashion over her soot-streaked dress. The ends were tied together to hold a tin cup which rattled commandingly as she walked. Each time she passed the paymaster's table she dropped her copper ticket with metallic triumph into the tin cup, and her face glowed like a child's at Christmas. When we asked to take her picture, she shook her cup in the air, shouting, "For why me buys de camera, when de bank, she full!"

Until the advent of oil-driven ships, Castries was one of the foremost coaling stations in the Caribbean. Today this little landlocked harbor still holds the record for quick coaling in the West Indies.

In complete contrast to the grimy waterfront activity is the domestic serenity of the country beyond Castries. Notable for absence of palm trees, the hills are lush with mountain violets, epiphytic orchids, and dogwood. There are candlenut trees, the kernels of which when strung on bamboo burn like a candle; woman's tongue, the durable wood of which is used for boat building; and swizzle-stick trees, fragrant of myrrh.

From our balcony at St. Antoine's we looked down on an exquisite expanse of pale-pink blossoms that resembled butterfly orchids. Blooming profusely in the tops of 30-foot trees, these fragile flowers are called by the natives "Napoleon's hat," to which they are strikingly similar in shape.

St. Antoine's perches 200 feet above the sea on the side of Morne Fortune (sometimes called Lucky Hill). From its wide white verandas one can see that sculptured strip of land, Vigie, etched against the violet sea of late afternoon. It is strange that little St. Lucia, only 233 square miles in extent, should have been contended for by the French and British for 300 years.

Now the white sands of Vigie beach are beloved by bathers who travel from far continents to enjoy the splendid surf. One of the massive barracks has been converted into

a country club, where drinks are served by a little black boy who calls himself "Clark Gable." On boat days he is at the water front with an animated crowd of his companions, all of whom have taken to themselves names of American movie actors.

Like a swarm of beetles they buzz around, crying, "Take me, I am Robert Taylor (or Leslie Howard or Mickey Rooney). Good guide, mistress."

Fishing for lobster from the rocky shores of St. Lucia is usually carried on at night. Hawksbill turtles are found here also in profusion, and their shell is made into buckles, buttons, and wristbands for watches.

A queer member of St. Lucia's fish family is the sea egg (called "sea chestnut" in Spain). More than anything else I can think of, it resembles a gigantic prickly white chestnut. To cook the sea egg, one must break the top, scoop out the interior, season it with salt, pepper, onion, and a dash of lime, and pack it back in the shell to bake.

Two other palate pets of ours are *tri-tri*, tiny fish, the young of a goby, which swarm up to the mouth of the river after rains, and, when fried in fritters, taste like something out of an epicure's dream; and the minute oysters which attach themselves to the roots of mangrove trees. These are so small it takes two dozen to make an oyster cocktail, but their flavor is delicious.

A Hard-working Volcano

Guarding the southwestern shore of St. Lucia are the twin sentinels of the Pitons, rising abruptly from the sea about 2,600 feet. These gigantic obelisks form a dramatic entrance to Soufrière, the low-lying volcano of the island, which erupted about 1766. Since then, it has been active all the time, but only as a "solfatara"—that is, instead of lava or ashes, it now emits only hot vapors and gases. Its pools are fed by subterranean steam, with a little sulphureted hydrogen and another gas as yet unidentified (page 18).

There is a rugged beauty in sheer precipices, fantastic tropic vegetation, and the wide sweeping view from Soufrière Bay, so different from the pastoral herbage of the highlands which slope gently down Grand Cul de Sac road into the little wooden town of Castries. About a mile from Grand Cul de Sac is a sugar factory, one of several which play a proud part in the industry of the island. We noticed also great groves of cocoa, coffee, bananas, and coconuts growing in orderly rows on well-groomed estates.

One morning we awakened to a tolling of bells which persisted through the day at

West Indies Links in a Defense Chain



© National Geographic Society

Photos by Edwin L. Wilcox

To Market in St. John's Comes Strange Produce

The shopper from the United States would be bewildered by unfamiliar vegetables and fruits sold in this Antigua city. Among the mysteries are christophine, eddoes, tannias, shallots, guanábanas, and sweet cassavus (not to be confused with bitter cassava, the pulp of which is used for bread after its poisonous juice has been extracted). Even the artichokes are unrecognizable, for they are small and gnarled, bearing no resemblance to the leafy northern species.



© National Geographic Society

Picture by Robert L. Whitford

St. George's Pretty Inner Harbor Invites the Traveler to Grenada, the Spice Island

In the wooded hills of the back country, nature runs riot, and aromatic fragrance is wafted far out to sea. Its rich soils produce nutmeg, cacao, limes, and coconuts.



© National Geographic Society

Finlay by Anna Burg

Before the Seat of the Third Oldest Legislature in the British Empire the Governor of Barbados Reviews Troops

Twenty-four members elected by the people—two from each of the 11 parishes and two from Bridgetown—meet in this House of Assembly as their predecessors have met since 1639 or earlier. Only the House of Commons in London and the Bermuda Assembly have longer records in enacting English laws.



© National Geographic Society

Picture by Edith L. Wisford

Minus Its Waving Arms, a Century-old Sugar Mill Becomes a Storehouse

Factories with modern machinery have supplanted most of the breeze-driven plants, but some are still in use, operated by the trade winds that also give the island its delightful climate. Next to the Netherlands, Barbados probably leads the world in number of windmills to the square mile. The tree is a flamboyant.

West Indies Links in a Defense Chain



London Has Come to Barbados in the Bridgetown Government Buildings

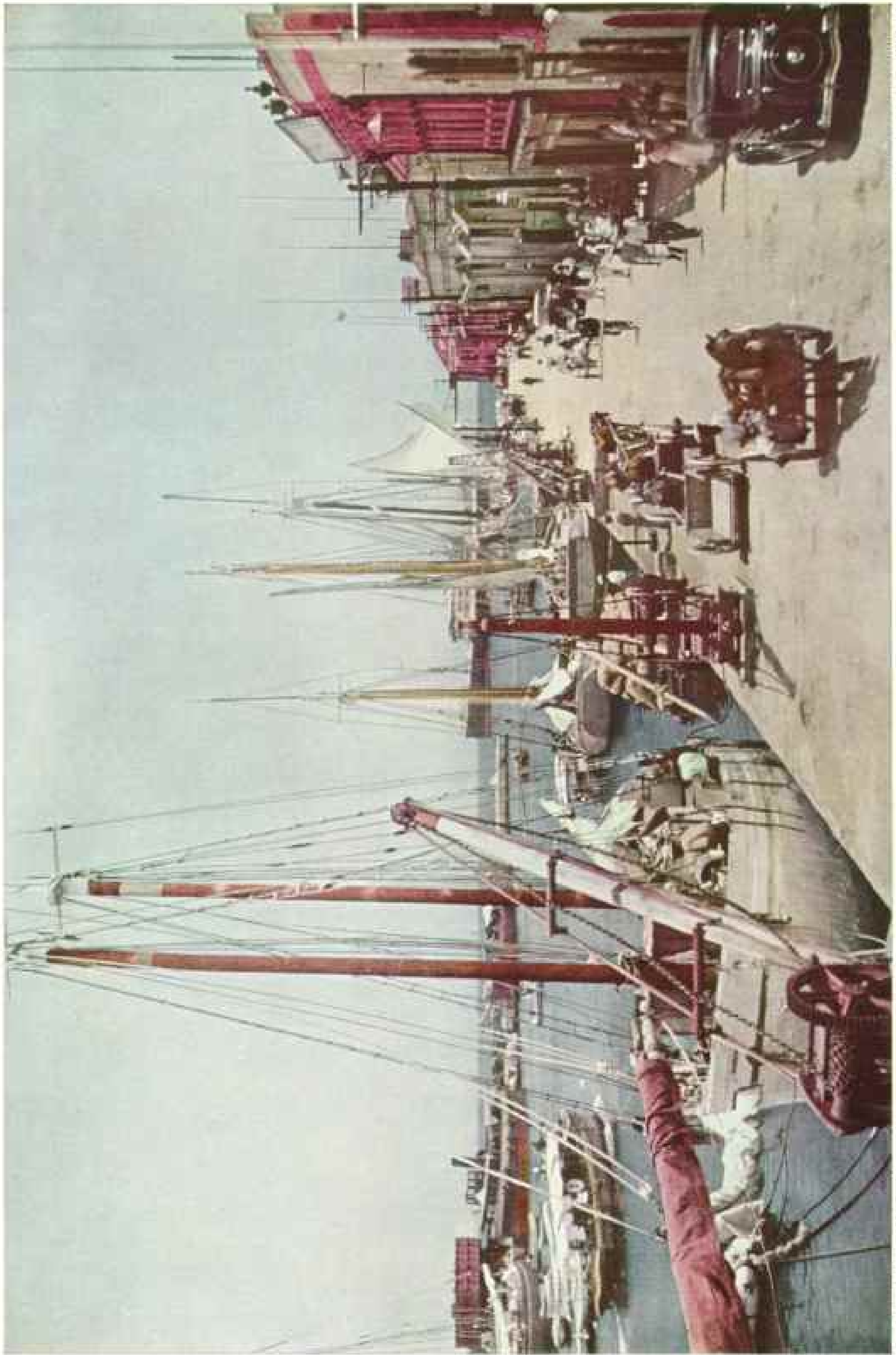


© National Geographic Society

Photos by Edwin L. Wisner

Stately Royal Palms Line Fifth Avenue in Bridgetown

Instead of the smart shops of the New York street, there are hibiscus-bordered gardens and cool tropical homes. Flamboyant trees, too, fling out their vivid banners along the way.



© National Geographic Society

Crossroads of Caribbean Commerce Is Busy Bridgetown's Harbor

In the Carriacou, or inner harbor, of Barbados's capital lie three-masted schooners and small sloops reminiscent of the days of the windjammers when George Washington visited the colony on his only journey to foreign shores. Girl vendors, balancing legs on their heads, do a brisk business selling the mauby drink, a sweet tea made by boiling the bark of the mauby tree.

Picture by Robert L. Whitcomb



© National Geographic Society

Pennies Jingle to the Lively Tempo of Bargaining in St. Vincent

Every Saturday morning women from miles around bring their "ground provisions" (West Indian term for fresh vegetables) to sell in the public market at Kingstown. The place is a housewife's delight, for incredible quantities of delicious produce can be had for a few coppers.

Painted by Robert L. Whitton



Rosy Cousins of the American Lotus Are the Pink Water Lilies on a Pond in St. John's, Antigua



© National Geographic Society

Photograph by Edwin L. Wisford

Without the Potter's Wheel Deft Natives of St. John's Fashion Charcoal Braziers and Water Jars

15-minute intervals. There was something so significant in their mournful insistence that we inquired the cause of it. We were told that they were being rung for a first-class funeral.

There are three classes of funerals in St. Lucia. The first-class corpse, by benefit of 6 pounds sterling, rates a metallic mourning of bells which are sounded at 15-minute intervals for eight hours preceding the funeral.

Four hundred candles are lighted, and the long procession of candle bearers marches from the house to the black-draped Cathedral. The second and third classes cost 4 pounds 10 pence and 2 pounds, respectively—without benefit of bells. It goes without saying that the white population on the island prefers the second class.

I like to remember the Cathedral best as it looked the day following the funeral when the black drapes had been replaced with cloths of gold to commemorate Corpus Christi.

On Corpus Christi three shrines are erected in Castries: one in honor of the Blessed Virgin, one in homage to the Sacred Heart, and one commemorating St. Joseph. Women and children work for days before the feast, twining garlands of flowers around the wood frames which enclose the shrines (Plate VIII).

Barbados Is a Crowded Island

At the crossroads of Caribbean commerce, visited by trading ships from a dozen countries, lies Barbados, settled by the British in 1627. It is one of the most densely populated areas for its size anywhere. On its 166 square miles live more than 193,000 people, making a population density per square mile of 1,163.

With the exception of the British House of Commons, and the House of Assembly at Bermuda, the Elective House of Assembly at Barbados—constituted in 1639—is the oldest legislative body in the British Empire.

The miniature Marseille of the West Indies is Bridgetown, a seaport town embracing the Careenage, an inner harbor. Harbor police with Lord Nelson hats hint a pictorial prelude to the sights that await in the creole traffic surrounding Nelson's statue in Trafalgar Square (pages 34, 37, and Plates XI-XIV).

Little carts drawn by donkeys jog along with loads of fresh fruits and vegetables. Old women with trays of nuts and sweets squabble amiably with cake vendors to catch the tourist's eye (and, ultimately, pennies). A golden-skinned creole girl wearing a dress brighter than jonquils swings slowly down Broad Street with an unwieldy urn of maubey drink balanced precariously upon her head.

Maubey drink is brewed from the bark of

a tree by the same name. The bark is boiled in sweetened water and then put in tap urns and sold for a penny a glass. When the maubey girls reach up carelessly to turn on the tap, one marvels to see the heavy urns "stay put" upon their heads (page 23).

Down on the Bathsheba shore, with the wind-blown beauty of a wild Cornish coastline, the flying fish fleet, 30 or more sloops, sails out at dawn through the dangerous reefs which precede the harbor to Bathsheba.

They go to the vast shoals lying 10 to 20 miles off the island. Here, while the boats let down their sails and drift on the grounds, the fish are attracted by a bait of decayed fish and crabs pounded together and suspended in a small bag from the bow of the ship.

The oil from this bait attracts the flying fish. Hundreds of them swarm up within an inch or two of the surface. Then the waiting fisherman lets out his net, with a single flying fish caught in the mesh to attract the attention of the school (page 20).

Fishermen May Have to Swim Home

But with the catching of their pretty prey the work of the fishermen is not over. Ahead lies the most dangerous and difficult part of the day. To reach shore, they must pass through two narrow channels and dangerous coral reefs where the boat often capsizes.

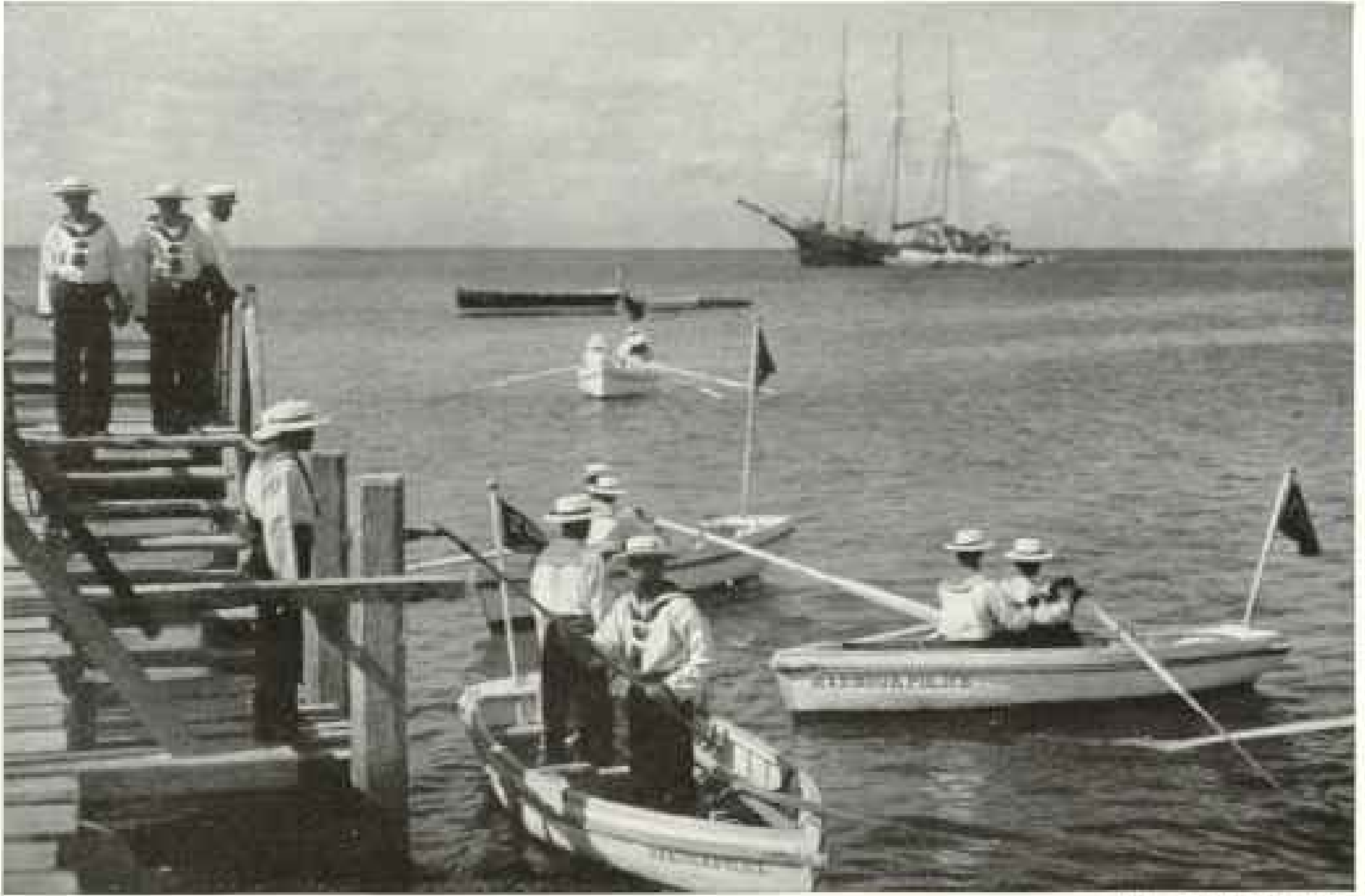
In the event of this catastrophe, the nets with the fish must first be fastened to the bottom of the boat. Many times the fishermen of the flying-fish fleet have had to swim in.

Flying fish resemble herring, but are slightly smaller, with longer wings. We found them almost daily on the menus in Barbados, broiled with creole sauce, fried to a delicate golden brown, or in flying-fish pie.

If I had a little money to spend just as I pleased, I should rent the Round House in Bathsheba for one magic month. The Round House is an old tower on a high hill overlooking the stone terraces of a hotel. It has four bedrooms, two drawing rooms, and one bath. With frugal furnishings, it rents for forty dollars a month, but forty times forty dollars could not begin to pay for the glory surrounding it.

Below, the wild white surf sprays up 20 feet against gigantic black rocks known as the Musics. On the stone terrace above, heliotrope blooms recklessly. All through the still, iridescent day and deep, velvet night the surf sings its song like a troubadour of old.

The steep winding road rising abruptly behind the Bathsheba coast is flecked with miniature houses whose freshly scrubbed stone steps remind one of old Baltimore. But the resem-



Photograph by Anna Dutz

Barbadian Harbor Police Uniforms Copy Those of Nelson's Sailors

When the admiral based his fleet in the West Indies, he introduced this style for naval forces. Forty men with a flotilla of official boats keep order in the busy port of Bridgetown.



Instead of a "Pig in a Poke," the Buyer Is Offered One on a Leash

No more society fail, this is the Barbados way of bringing them to Bridgetown for sale or trade. Many are led in from farms several miles out.

blance ceases with the steps. Little gray postage-stamp houses flame to life under scarlet bougainvillea. In the distance cane fronds wave like the feathers of a fighting cock. Sometimes the wind is so high along the road here that the cane seems to struggle to stay in the ground.

Scottish "Red Legs" Make Pottery

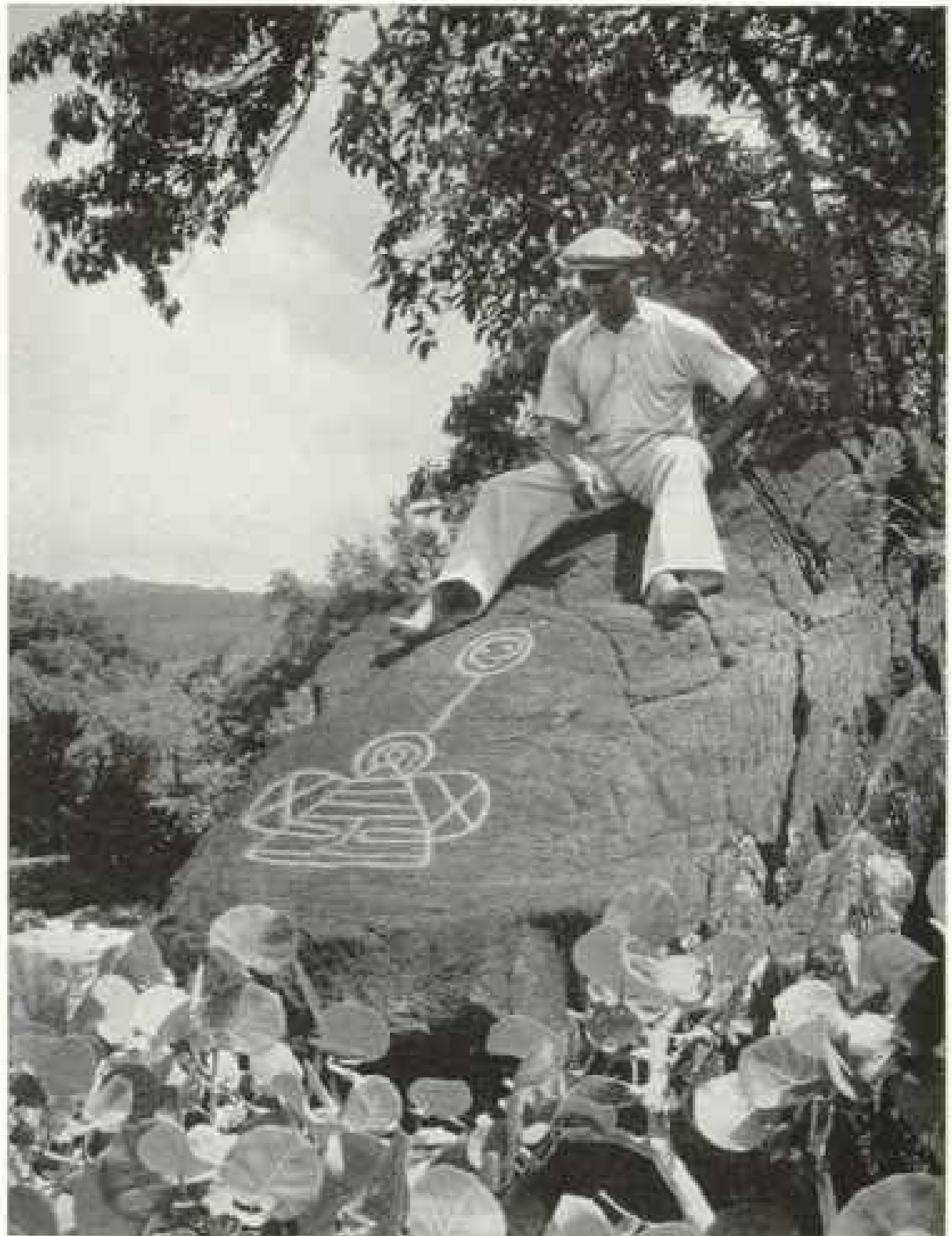
Off to the right of the road a miserable motor path that dips up and down like a roller coaster leads to Chalky Mountain where lives the lost race called "Red Legs." These solitary Scots, now released from a long bondage, earn their living by making pottery.

Their ancestors, victims of the civil disorders in Scotland and England in the second half of the 17th century, were deported to Barbados, where they were sold as slaves for 1,500 pounds of sugar each. Dressed in their native kilts, they suffered such sunburn on their legs that they won the nickname which has clung to them.

The pottery sold in Trafalgar Square comes from the fiery kilns of Scotland District. On their barren hilltop these proud, taciturn people live alone, isolated, independent. From the crude clay they mold pottery of surprising line and symmetry. From a sketch of a favorite vase they will make a copy for a shilling.

One of our friends had an immense Egyptian water jar made. It was 6½ feet high—taller than the houses of the Scots. This had to be done in two distinct parts. Before baking they put the two halves together with a delightful little scroll design to disguise the joining. For this they received \$10.

Third in importance on the list of exports



A Rock Near Kingston Bears a Message from the Past

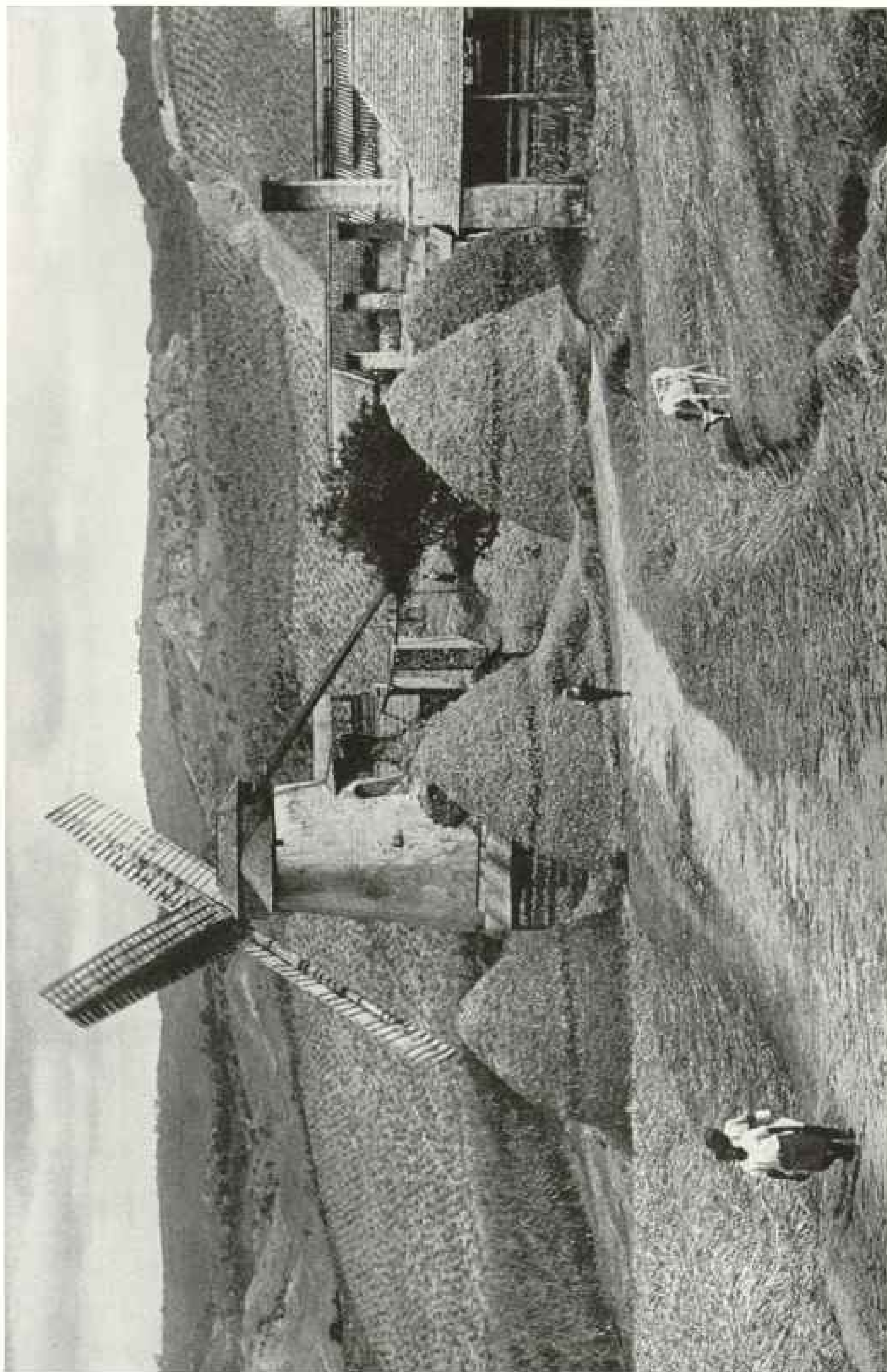
In many islands are found inscriptions such as this on St. Vincent. Scholars have not deciphered them but generally agree that they are the work of early Carib tribesmen (page 45).

in cane products is Barbados rum. Some of its popularity dates from 1751 when George Washington, on a visit to Barbados, commented on the excellent quality—although he found it to be "extravagantly dear." Rum then sold at two shillings a gallon!

George Washington and his half brother Lawrence passed several pleasant weeks in Barbados when the latter was fighting tuberculosis. (George himself suffered an attack of smallpox here.)

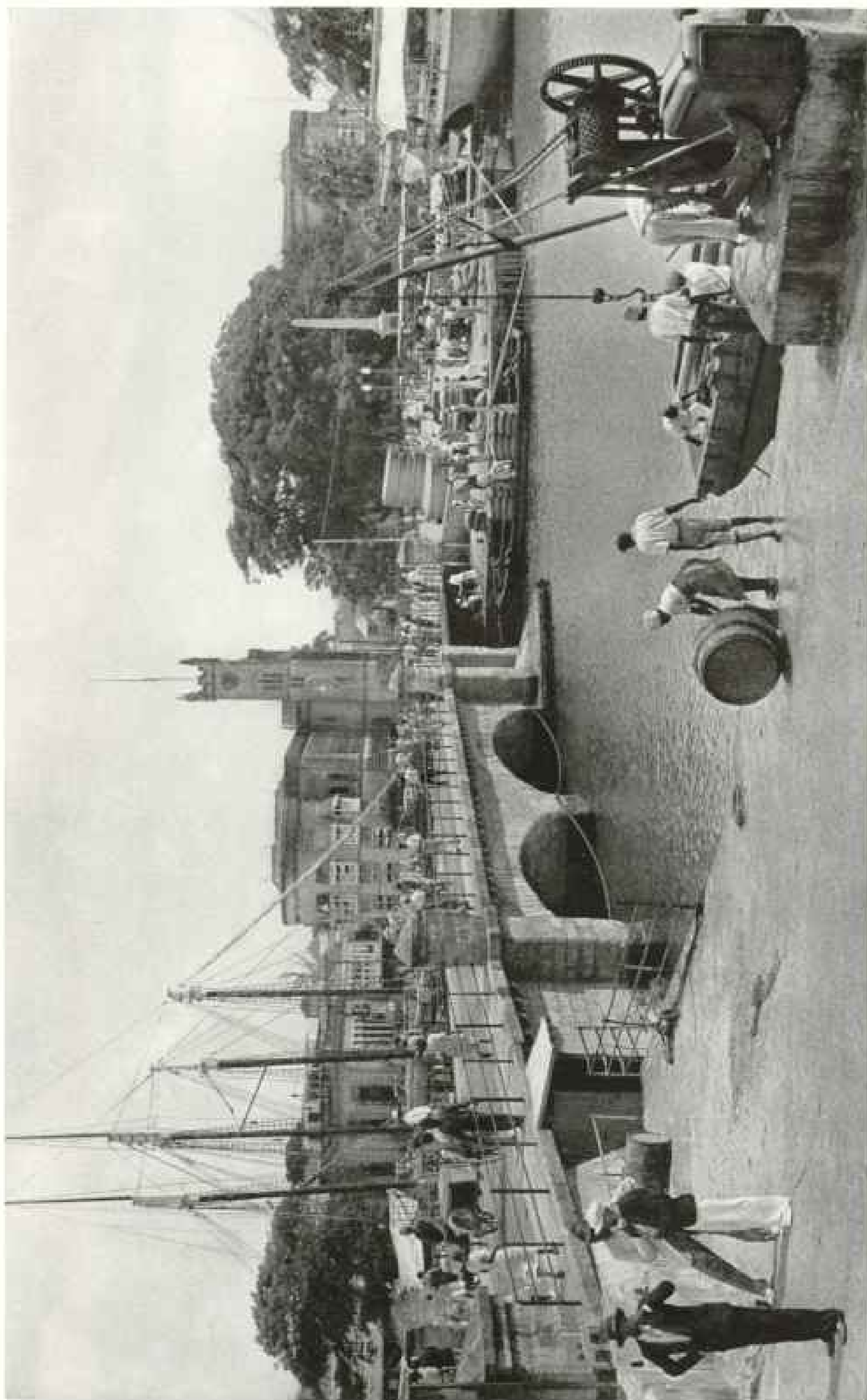
George, then 19 years of age, was charmed with the hospitality of the planters' dinners of beefsteak and tripe, followed by a choice of the native fruits.

According to his diary, the ladies he found



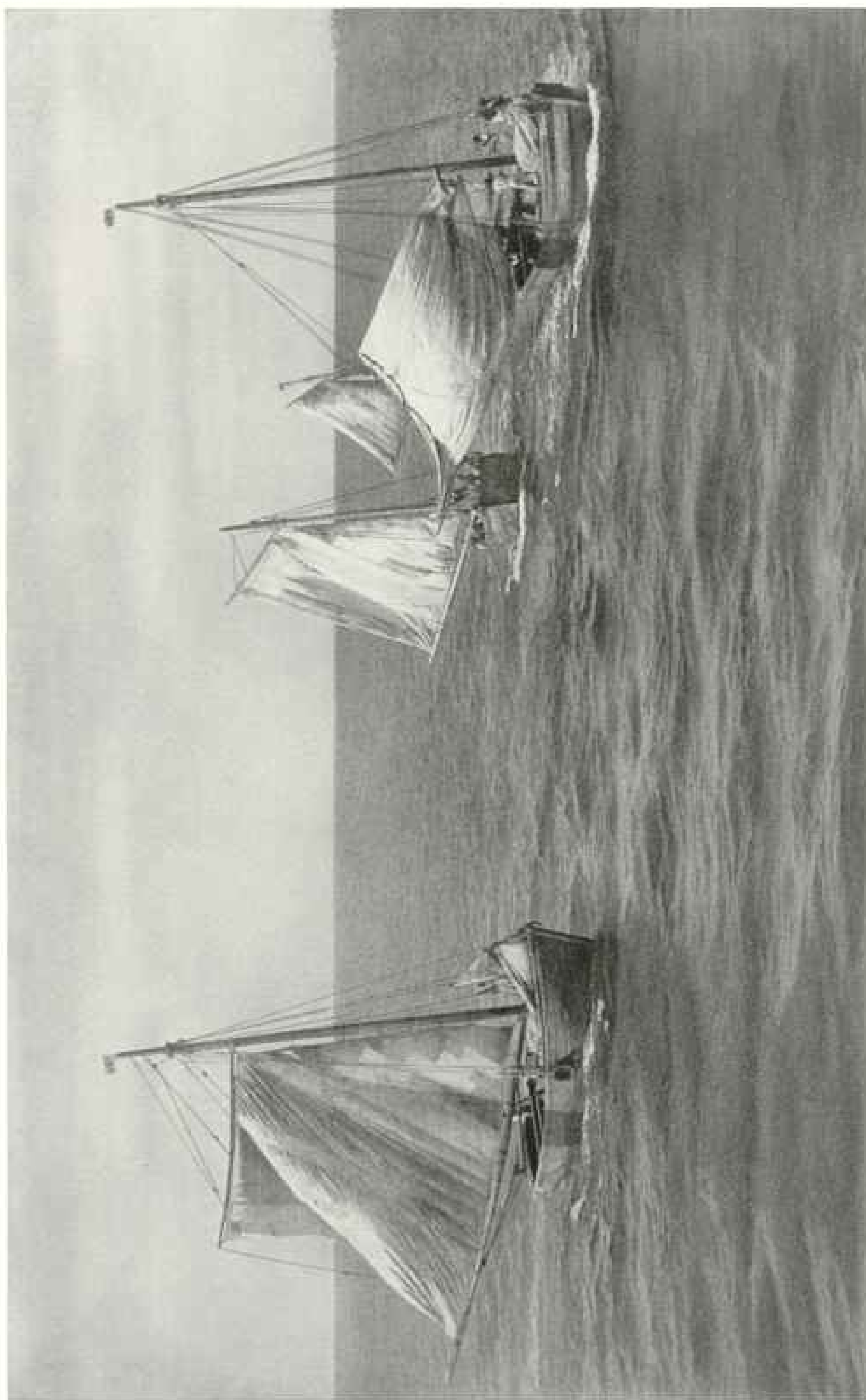
Windmills Driving Cane Crushers Make Barbados Plantations Look Like Holland

Trade winds furnish cheap power for the sugar industry, main source of income for the island. Some plants have modern machinery (page 40), but many cling to the more artistic equipment. The stacks are cane refuse called "bagasse." Part is used for fuel, the remainder scattered over the fields to fertilize the soil.



Chamberlain Bridge Leads Across the Bridgetown Careenage into Trafalgar Square

Even in the names of its streets and public squares, the capital of Barbados is as English as London (page 33 and Plates XI-XIV). Fleets of lighters ply constantly between the busy wharves and the open roadstead, where big ships anchor. Vessels of considerable size are brought here and careened for hull repairs and painting.



Every Incoming Ship Starts a Race Among the Lighters

When vessels call at Antigua, they anchor about five miles out from St. John's, and the shippers of small craft which carry cargo ashore use every nautical trick they know to get the first load. With a stiff breeze blowing, this contest is close and exciting. The boat at the right has won and is lowering sail preparatory to swinging alongside the steamer.



Literally St. Vincent Depends on an Infant Industry—Making Food for Babies

Arrowroot has quickly become the principal export, replacing sugar, the main source of income prior to 1931. After it is dug and ground, it is placed in large vats, washed, and then permitted to congeal. The cake thus formed is broken up and spread on wire netting in sheds such as this near Sans Souci. When dry, the starch is sifted out and sacked for shipment. It is used for making biscuits, dextrins, textile stiffening, candy bases, and as health foods for children and invalids (page 45).



Barrels of Molasses Make Life Sweet in Barbados

Without the sugar industry the people of the island would have little means of livelihood. Bridgetown laborers tightening hoops on the casks and wharf workers loading the shipments into lighters to be rowed out to cargo vessels resemble Mississippi River roustabouts in everything except their language. They speak with a pronounced English accent, some with a Cockney twang.

"very agreeable, but by ill custom or wt . . . affect the Negro Style."

Today a cream-colored brick house flaunts the sign "George Washington Guest House." It is here that George Washington is supposed to have lived.

Compared with the modern homes, formal gardens, and sleek star boats of another of the island's coastal districts, the native life at Speightstown is an interesting contrast. At Farley Hill and Six Men's Crossroads, we watched the ground being plowed with yoked oxen. Here the clear, vivid green of sugar cane sweeps the countryside. Windmills punctuate the sky with Old World charm.

Until the institution of modern mills with their gigantic machinery, the milling of sugar was carried on by wind power. Even today Barbados probably boasts more windmills than any other country outside of the Netherlands. It also possesses many modern mills which

have increased the average annual production to 90,000 long tons. The old mills are used now mainly for fancy molasses (page 36).

One Sunday morning we attended services in the chapel at Codrington College. Twice destroyed by hurricane since its opening in 1745, this college shrine is a tribute to the institution which it serves. Massive mahogany sanctuary rails and gates are all that remain of the original altar. The present pedestals in beautifully grained native woods are the modern work of a local cabinetworker.

Codrington College, affiliated with Durham University, is the only institution in the West Indies where an English university degree can be obtained. Numbered among its alumni are many of the bishops, chief justices, and planters of the colonies in the Caribbean. The old Mansion House in which the founder, Christopher Codrington, passed the last years of his life is now the principal's lodge.

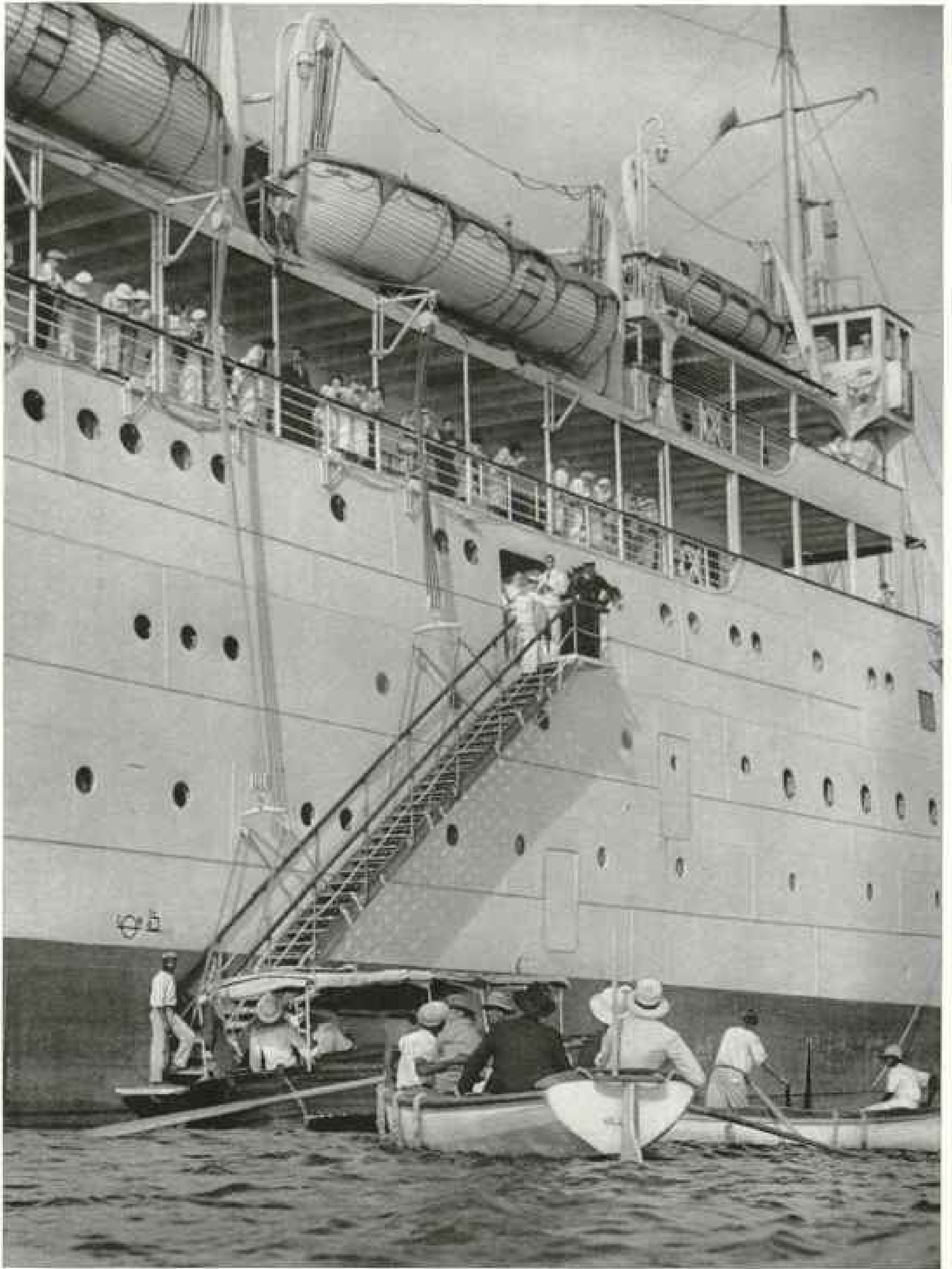
U. S. Naval Bases recently acquired from Great Britain: Δ
 Other U. S. Naval Bases: \circ
 Other Ports: \bullet



Drawn by Newman Bunstead

Sea Ways of Discovery Now Welcome Friendly Visitors Only

With the acquisition from Great Britain of eight naval bases—at Avalon, Bermuda, the Bahamas, Jamaica, Antigua, St. Lucia, Trinidad, and Georgetown—the United States will be able to fill hitherto precarious gaps in a line of defense from Newfoundland to British Guiana. Ships and airplanes of the Atlantic Fleet will never be dangerously distant from sources of supply, whether they are guarding the coast of the United States or the Panama Canal.



Eager Visitors Wait Their Turn to Go Ashore at St. George's, Grenada

Before war curtailed ocean travel, pleasure ships from many European countries carried rapidly growing passenger traffic to the West Indies. Luxurious United States liners and also smart Canadian ships still make cruises on regular schedule to ports in the Leeward and Windward Islands.



A Speightstown Bakery Woman Peddles Her Wares from Door to Door

Thoroughly British in its mode of life, this Barbados town enjoys many customs familiar in English villages. Bread and cakes fresh from the oven are trundled about in a pushcart.

We were amused in hearing the present principal's comment on weekly baptisms in one of his rural parishes.

"I am pleased to announce," he said to his black congregation, "that there have been 19 baptisms during the past week; and I am more pleased to observe that eight of these were legal."

Divorce Tears Houses Apart

The mention of legal technicalities in Barbados calls to mind another novel custom among some of the blacks. One day our curiosity was aroused by an odd-shaped house whose weather-beaten shingles contrasted cruelly with an entire wall of new pitch pine.

"It looks as if they had a severe storm here," remarked my companion. "Half the house must have been blown away."

"It not de kin' of storm you talk, mistress," answered the driver. "Dat am divorce house, standin' so from de domestic storm."

"What in the world is a divorce house?" we asked.

In true West Indian dialect he explained. "When husband leave she wife, he put notice

in de paper. Den he take half and leave she half of whatever tings dey has. De house he cut in two, and he carry off his half. If de missus has money sufficient, she board up de open side like new."

One hundred miles west of Barbados the saw-toothed mountain range which forms the island of St. Vincent slices the sky abruptly. Even before entering the serene little bay town of Kingston, one is aware of a strange sense of peace. Pale pink and yellow houses border the shoreline, and there is a marked absence of exotic tropical flowers and colorful street vendors. Here an aspect of stability is apparent in neatly laid out streets and whitewashed public buildings. No shrill-voiced guides violate the quiet.

St. Vincent Has Peace and Cotton

Some 4,900 acres on St. Vincent are devoted to the cultivation of West Indies sea-island cotton. This is selected long-staple cotton of finely spun texture which has the appearance and strength of silk. At the experimental station we saw new methods of hybridization being tried in an effort to



© E. J. Hayward

In Grenada Nutmegs Are the Spice of Life

Hundreds of native farmers owe their livelihood to the tree which produces a doubly precious fruit. From the outside of the seed they remove the mace by hand, then sun-dry the nuts and sack them for market (p. 46).



© E. J. Hayward

From a Single Tree Come Both Nutmeg and Mace

The fruit which makes Grenada truly an isle of spice is never picked. When it is ripe, the peachlike exterior splits open and the seed with its bright red fibrous covering falls to the ground. This outer coat is mace, the hard center, nutmeg.

produce new cottons. The cotton is ginned and baled and then shipped to England for spinning.

Arrowroot, St. Vincent's staple crop, is not the product which is often manufactured from cassava or potatoes; it is the true arrowroot plant which the Caribs planted long ago. The roots of this plant, after being reduced to a fine pulp, are thoroughly washed and strained; then the pulp, suspended in water, flows slowly through shallow troughs until the starch settles. It is taken out, dried by steam, and barreled for shipping (page 39).

St. Vincent covers 150 square miles and has a population of some 58,000. The popular language is a French patois, piquantly peppered with Spanish and Carib.

Lying about 300 yards offshore from the red-and-white striped Aquatic Club at Villa, Young Island pops up like a green jack-in-the-box.

This honeymooner's retreat was the gift of a Carib chief to Sir William Young, who came to St. Vincent's in 1791. The chief, expressing his admiration for a fine black charger which Sir William had brought out from England, was told that the horse was his. Later, when the chief rode back on the charger to visit the Englishman, Sir William remarked on the beauty of a little almond-shaped island which faced his house.

St. Vincent's Soufrière Is in Its Prime

"The island is yours," said the Carib chief. From that day it was known as Young Island. Not long ago it was available at a monthly rental of \$30. This includes a furnished house, servant quarters, and a boat.



Breadfruit Goes to Market by Overhead Carriers

Introduced from Polynesia into Grenada by Captain Bligh of the *Bounty*, this food staple was intended as a substitute for flour in feeding laborers brought in from Africa. The plant grew well in the new environment, but the workers did not like its taste and still demanded bread. To them it was no better than their plantain.

St. Vincent's Soufrière, unlike that of St. Lucia (page 24) is a volcano in its full prime, and considered the most powerfully explosive in the West Indies. But fortunately it is a "long-period" volcano, the intervals between eruptions being about 90 years. Between times the great crater is half filled with a lake of water.

To reach it from the leeward side of the island, we traveled by launch to Chateaubelair, rounding a romantic little bay at Cumberland, where a century ago a French settler planted a heart of dark mango trees to mark the spot where his young wife lay buried.

Chateaubelair sleeps in the shadows of

somber Soufrière. When we reached there, we stopped for coffee. Finding mine not hot enough, I asked SoSo, our driver, to have it heated. Whereupon he replied:

"I goes to hot she, mistress." In West Indian dialect all neuter gender is referred to as "she."

From Chateaubelair we went by boat to the Dry River, and then began the two-hour climb to the crater of Soufrière. Halfway up, vegetation ceases and the slopes are scattered with volcanic ash. Upon reaching the rim of the crater, we looked down upon the still, limpid waters of Crater Lake, 1,000 feet below, and marveled that so serene a surface could erupt into a seething mass of destruction.

Since the eruption in 1902, the deep, perpendicular walls of the crater have been bereft of the lush vegetation which formerly covered them.

Grenada Is the Spice Island

The Barbadians tell a story of the eruption of Soufrière in May, 1812, when the ashes from the violent volcano were carried a hundred miles, falling profusely on the astonished Barbadians, who called the gray visitation "May dust."

Grenada, 68 miles south of St. Vincent, covers an area of 133 square miles. The seat of government of the Windward Islands, it is often called "Spice Island."

Nutmegs, mace, cloves, vanilla beans, and cocoa grow luxuriantly in the well-watered hills. Cloves grow in tall trees which blossom with fragrant flowers. When the cloves are pink, boys and girls scramble up the trees and shake the branches until the ground is covered with creamy petals and the air is spiced with a fresh, piercing fragrance.

When the pink unexpanded buds have been thoroughly dried out, they are packed in bags for shipping. Clove pickers are paid only a shilling a day; yet a happier group of people I have seldom encountered.

One morning when we were walking along Grand Anse road, a young creole woman barred our path by dropping suddenly to her knees. Holding her hands outstretched to us, she shut her eyes and chanted in a ripe sing-song, "I shut she eyes and de Lord Jesus hear . . . I shut she eyes." . . .

One eye cautiously opened at this point. Then, seeing no penny was forthcoming, she opened both eyes wide with astonishment, saying in a softer tone, "Is it you, mistress, wants I be hungry, when I se down in de dust tellin' Him to bless you?"

I dropped a penny into her outstretched

hand and was surprised to receive a nutmeg in return. Grenadians are a proud people, respecting themselves as they respect the white race.

The Growing of Nutmegs

Nutmegs are grown from seeds which require ten or twelve years before the young bushes bear appreciably. The nutmeg is covered with mace, a fibrous coat resembling red lace, which, when removed and dried, becomes a separate spice; and the nuts are grated or shipped whole (page 44).

In the tops of high hills we saw cocoa orchids growing. They are faintly fragrant in the early morning and evening, but with the sun the fragrance disappears. There is also a love vine which, belying its name, chokes anything growing around it.

The vine which pleased us most is called the "lucky leaf." If a person breaks off the dark, shiny green leaf, ties a piece of string to the stem and hangs it in his room, he will know whether his love is returned. Aimée, my Grenadan cook, says, "If she take root, you is loved."

Aimée mixes a magic dish called "calaloo," which I like even better than bouillabaisse of French fame.

She takes a bunch of eddo leaves, tomatoes, and an onion; and chips, chips, chips them until they are almost atoms. Then she adds shallot blades, thyme, salt pork, a piece of pig tail, and a big crab (with plenty of salt and pepper).

All of this is steamed over a slow fire for twenty minutes. Sufficient hot water is added to make the desired quantity of soup. When the mixture has boiled for half an hour, the crab is taken out while Aimée swizzles the soup with an oversize swizzle stick. When the soup is quite creamy, the crab is put back and the delicious dish is served.

It is typical of Grenada that the government homes for the poor, the mentally deficient, the prisoners, and sick people have the best sites on the island. Looking down from the high hills above the red-roofed town of St. George's, these havens for the hapless are blessed with sea-swept breezes from all sides. The narrow, winding streets in the town below remind one of certain hilly sections in Montmartre; but the quays and tunnels are definitely English in type.

This fertile island of 89,000 souls gave us two treasures to carry to our home in Trinidad. One is Aimée. The other is the incomparable last glimpse of the scarlet sweep of flamboyant trees flaming through green hills above the crescent harbor of St. George's.

Martinique, Caribbean Question Mark

BY EDWARD T. FOLLIARD

FROM the porthole of the high-flying baby Clipper, Martinique looked very much like the other islands that fence in the Caribbean—like Trinidad, which I had left at 10 o'clock that October morning, and like St. Lucia, past which I had flown a half hour or so before.

First there was the glimpse of mountains, moss-colored peaks rising from a blue-green sea; and then, as the plane drew nearer, the view of narrow valleys and fields of sugar cane, fringed here and there with clusters of coconut palms.

That much was familiar in the West Indies.

But a few minutes later, the Clipper nosed down over the harbor of Fort-de-France and I was reminded of the changed and melancholy status of Martinique as a New World colony of vanquished and blockaded France.

Below us, anchored fairly close together, were two gray warships, a tricolor drooping from their jack staffs.

One was a fat and ungainly vessel, which, I knew, would be the much-talked-about aircraft carrier *Béarn*. The other was a true man-o'-war, the sleek cruiser *Emile Bertin*, one of the fastest warships afloat.

A few sailors, their white caps surmounted by pompons, moved about the decks, but on the whole there was remarkably little activity on the two ships. I got the impression that their anchors had taken a firm hold, that their masters didn't expect to go anywhere for a long time; and this impression was strengthened when I took up my sojourn on the island.

Planes Without a Country

I heard the story of how the *Béarn* happened to be at Fort-de-France. She was in mid-ocean, traveling from Halifax to a French port with 100 American-made warplanes, when France capitulated. Suddenly she got orders to put about and head for the West Indian colony, thus keeping the planes out of the hands of France's conqueror.

Admiral Georges Robert, bearded French High Commissioner of all France's possessions in the Caribbean—Guadeloupe, French Guiana, and Martinique—received me at his headquarters in an old villa overlooking the harbor.

The *Béarn* and *Emile Bertin* were at Martinique to protect the colony, nothing more, he said. The American-made planes, he added, had been ordered from the *Béarn* to remove any suspicions about their intended use.

"There is no flying field in Martinique," Admiral Robert told me. "We have no plans

to build a flying field. The proper sign for these planes would be 'Rest in Peace'."

Would Admiral Robert permit me to see the much-discussed planes? Yes, and with pleasure. He summoned Captain Jean Lainez. Together we traveled over a new military road on which large, muscular island women were busily engaged as builders, wielding picks and shovels with the greatest ease.

The car stopped and we walked down a steep hill. A moment later I saw the planes. They were arrayed in neat formation on a slope overlooking a lagoon.

"You see," said Captain Lainez, "as a member of the French Purchasing Commission, I helped buy these for France," and he motioned toward the strange array (p. 50, 51, 54).

In the first line, confronting the lagoon, were camouflaged Brewster fighters. Once owned by the United States Navy, they had been turned back to the factories which produced them, and the manufacturers, in turn, had consigned them to the Belgian Government. They still bore the Belgian emblem on their wings.

Those in the next line, painted green, were Curtiss fighters never used except in test flights. These were intended for France.

Beyond, row on row, stood camouflaged Curtiss dive bombers, made available by the United States Army in those exciting days of the Nazi drive through the Low Countries.

With the sun glinting on their war colors, the planes made a dazzling picture. They also aroused a feeling of sadness such as one might experience in seeing wild geese tethered to the ground. Had France been able to hold out two weeks longer, those planes probably would have been in battle.

Another wartime sight on Martinique was the strange spectacle of French sailors busily engaged in farming, and enjoying the task.

Commandant Robert Battet and his sailors of the *Emile Bertin* have created a model farm around the old French fort at Pointe des Nègres, from which French soldiers journeyed to Mexico to help install Maximilian as Emperor during the Civil War in the United States.

There I saw French sailors—men who walked with the rolling gait of the sea and who were veterans of the spectacular fight in which the *Emile Bertin* participated at Narvik—working serenely in the fields. Radishes, tomatoes, corn, carrots, cabbages, peas, turnips, and onions raised their heads in even rows. A detail of sailors was tending cattle, four cows and three calves.



Photograph from The Washington Post.

French Sailors in Pompon Caps Handle Hoes Instead of Guns

The old fort, long out of use, had been converted into a barracks, with bunks for the officers and hammocks for the men. A part of the crew of the *Bertin* lives here and works the farm for a week, then gives way to another detachment from the cruiser.

"The purpose of the farm is to keep up morale," Commandant Battet said. "If it were just to raise food, we would have selected a more fertile spot where the soil was not so heavy. Here we are close to the ship, which gets very hot under the sun when she is not traveling. Here we have a breeze, a place to swim, and no cafés to distract us. Some of the men are from farming Normandy and Brittany."

The Commandant offered me a glass of red wine from a keg. He said the warship supply would last for about three months. In the city of Fort-de-France, the prospect was not so good. There café-habituéés were saying that soon they might have to look to California for their wine.

On my first afternoon I strolled along the Rue de la Liberté and over to La Savane, Fort-de-France's public square. There stands the statue of Napoleon's Empress Josephine, who was born on Martinique. Apparently I was the first person to stand before the statue for some time; the islanders, lolling in the park, regarded me with curiosity.

Martinique misses keenly American travelers who came before the war and spent money on perfumes, rum, and souvenirs.

Even more serious has been the British blockade. Before last June, the island sent nearly all of its rum, sugar, and bananas to France. British warships cut off that business.

I discovered for myself that the gasoline shortage was acute. I wanted to go across the island to St. Pierre, victim of the terrible eruption of Mount Pelée in 1902. Veteran members of the National Geographic Society will recall the full story of that stark tragedy, in which more than 40,000 lives were snuffed out (page 52). The Society sponsored an expedition of scientists to Martinique, and their reports were printed in the NATIONAL GEOGRAPHIC MAGAZINE (June, July, 1902).

I wanted to visit the Musée Volcanologique at St. Pierre, presided over by Dr. Frank A. Perret. I had hoped to examine the many relics excavated from that American Pompeii. But after all arrangements had been made, even to engaging an auto, I discovered that no gasoline was available.

My visit to Martinique ended, I boarded the baby Clipper. As we flew back toward United States shores, I kept pondering the fate of the lonely, worried island I just had left. In the midst of world turmoil, what is in store for this dot in the Caribbean?



Photograph by Edwin L. Wichard.

With a Bone in Her Teeth, a Lighter Boils into Fort-de-France's Roadstead

A crudely dressed tree trunk serves as a mast. The boat carries a cargo to an incoming ship. Most merchantmen calling at the island anchor offshore (page 55). When the British blockade was felt in Martinique last summer, harbor activities came to a standstill.

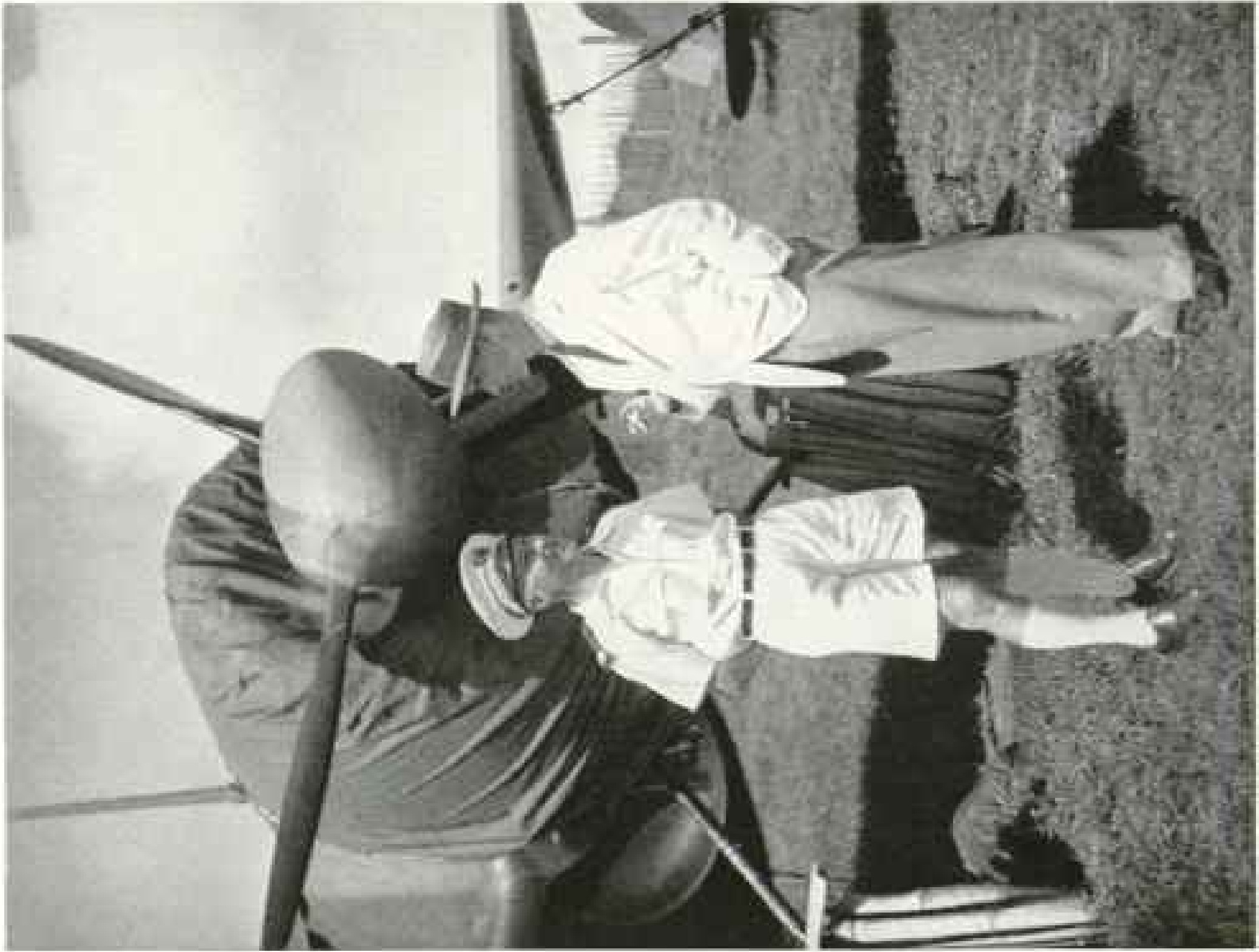


Illustration from *The Washington Post*

The Author and His Guide Inspect a Stranded Fighter

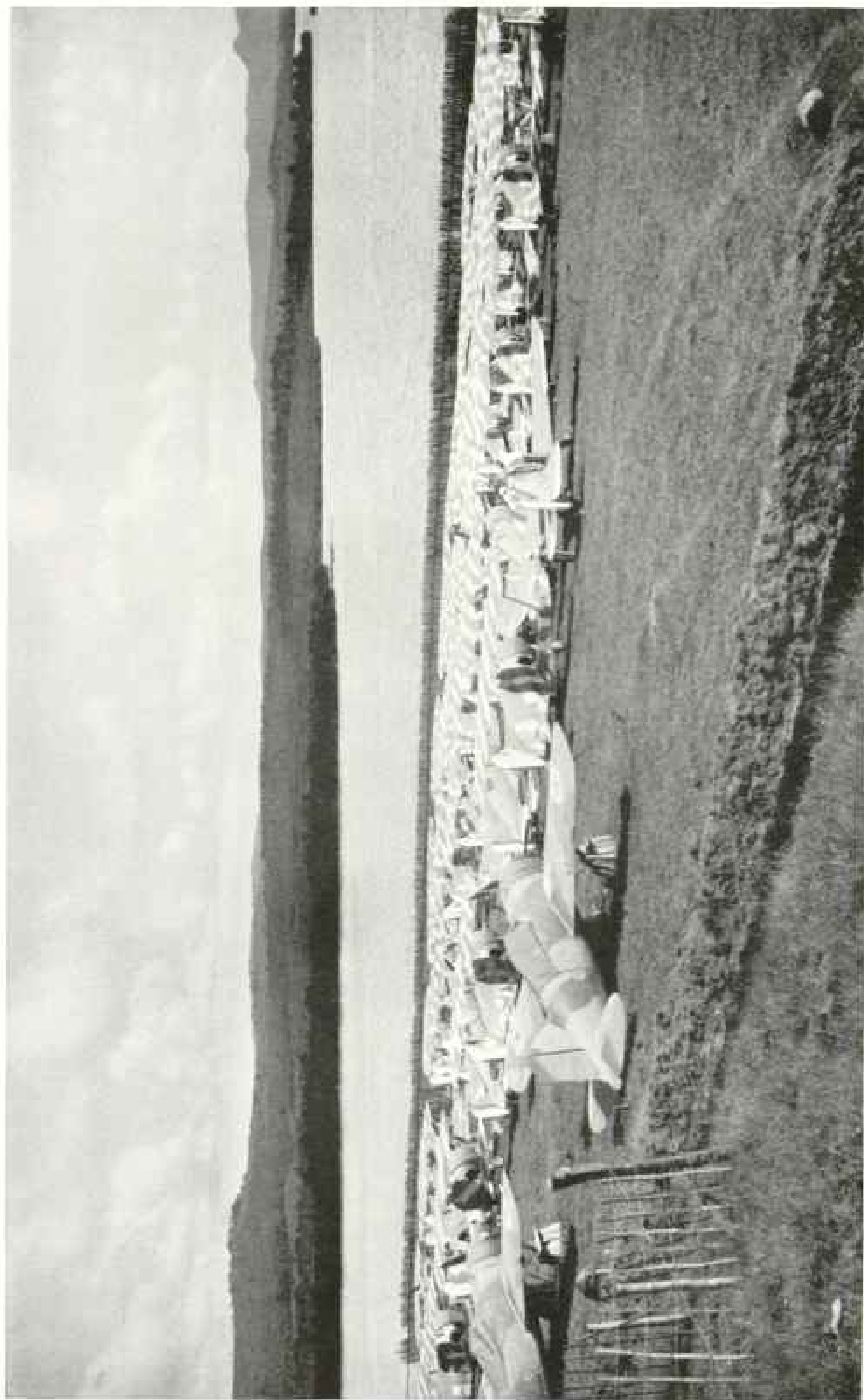
Captain Jean Lainez explains to his visitor how he helped purchase for France American-made warplanes now on Martinique (page 47).



Photograph by Robert L. Wybord

Portrait of a Martinique Belle

She hitches up her colorful skirt to reveal the dainty petticoat. Many island costumes are adapted from that of Empress Josephine (page 48).



Photograph from The Washington Post

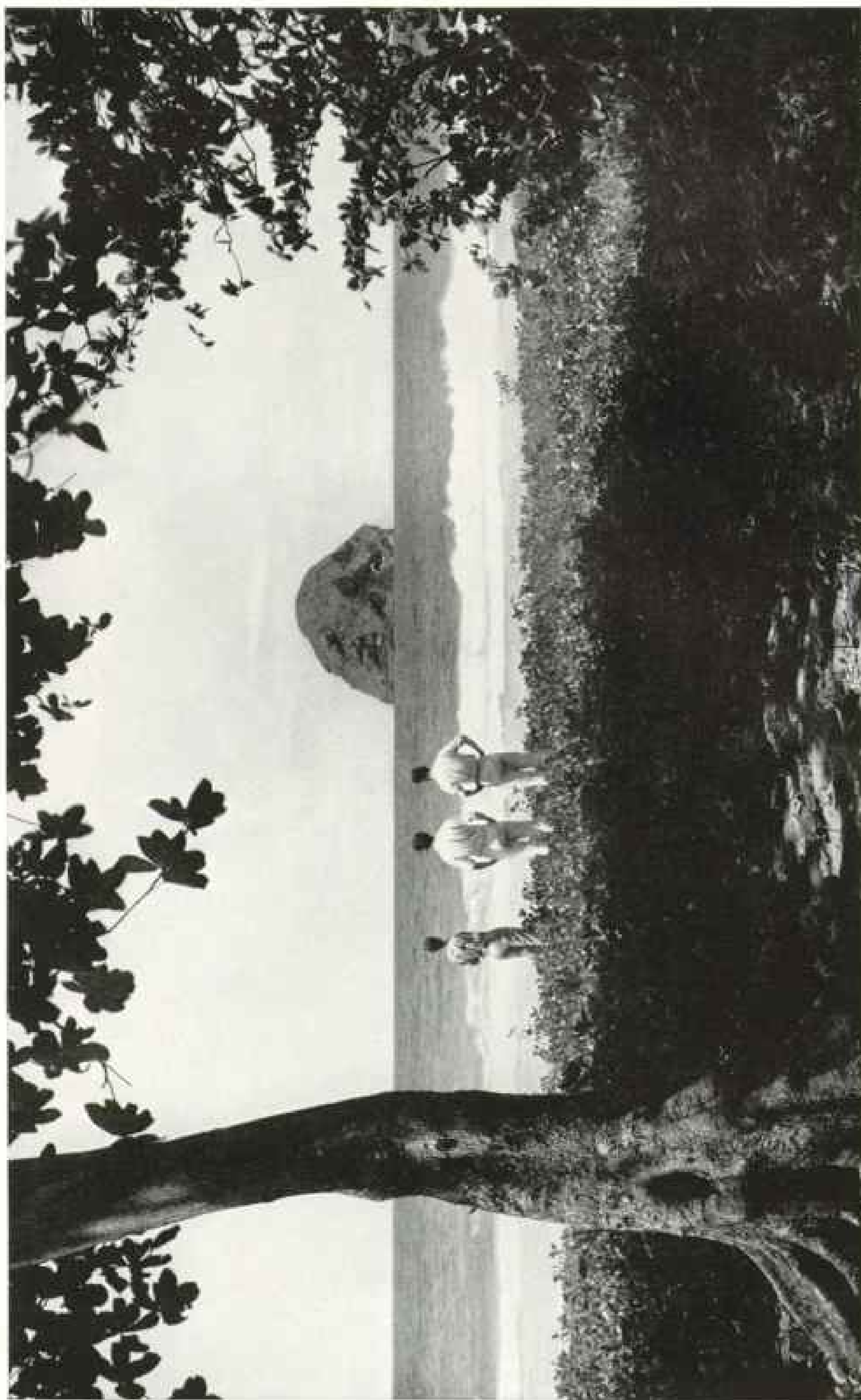
Turned Back on the High Seas, United States Planes En Route to France and Belgium Reach Journey's End on Martinique

One hundred Curtiss and Brewster fighters and Curtiss pursuit planes, some formerly the property of the United States Army and Navy, line the slope overlooking a lagoon. They were aboard the French aircraft carrier *Héron*, sailing from Halifax to a French port, when France capitulated last June. The *Héron* put about and steered into Martinique, to keep her cargo from German hands (page 47).



Down Mount Pelée's Rugged Slopes in 1902 Rushed the Avalanche of Lava and Flame Which Snuffed Out 40,000 Lives

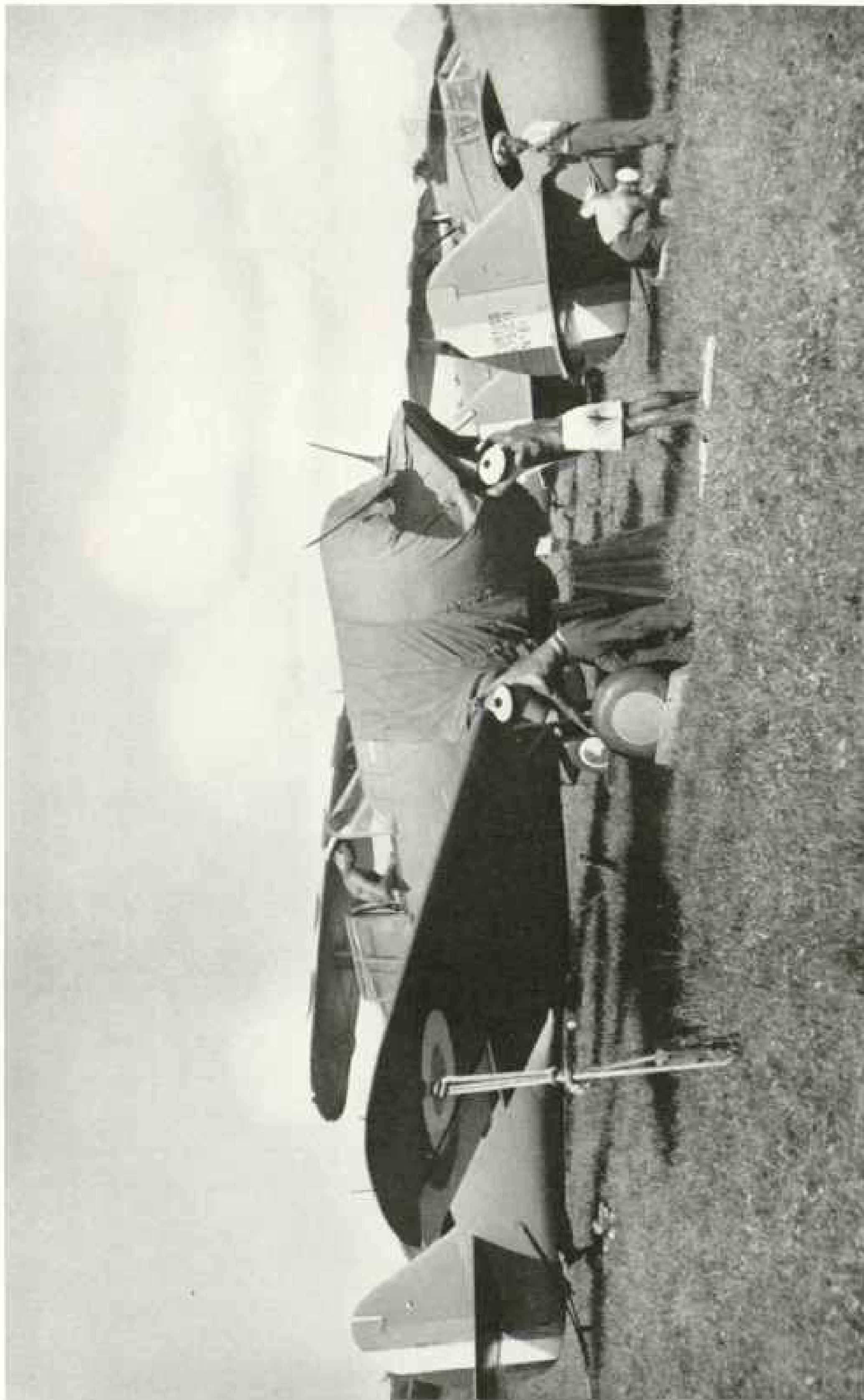
The air view shows the length of the valley, from the lofty crater to the sea, 4,428 feet below. During the eruption this stretch was a seething river of fire. The city of St. Pierre, totally destroyed and only partially rebuilt since, lies to the right, out of the picture.



Photograph by Edwin L. Wilbur

Historic Diamond Rock Rises from the Sea Southwest of Martinique "Like a Little Haystack"

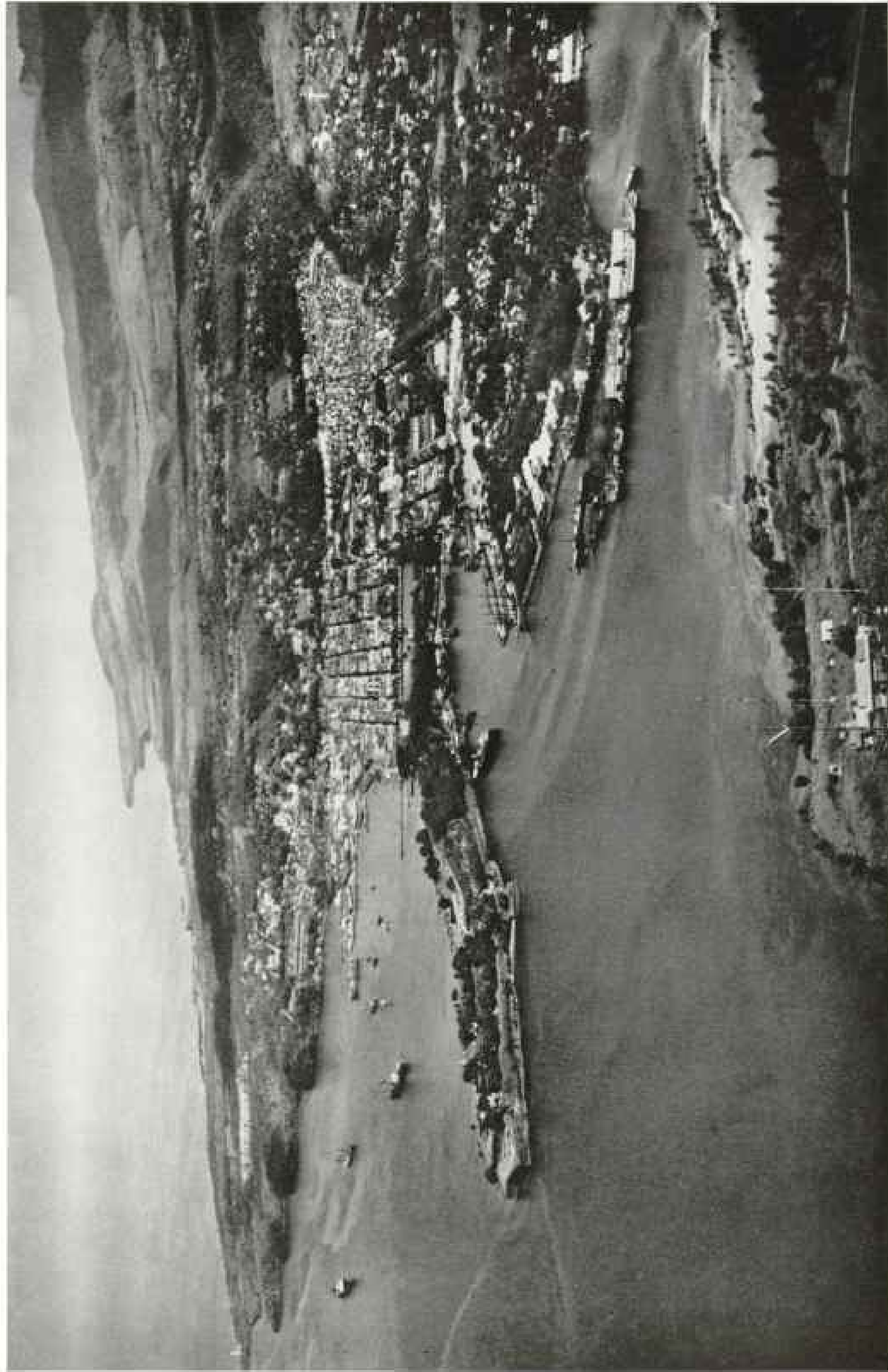
Now visited only by fishermen, the rock was the scene of a heroic exploit in 1804, when the English were attacking the island. English sailors hoisted cannon to the summit and harassed French ships as they passed to and from the harbor of Fort-de-France, then named Fort Royal. Repeated efforts to dislodge the small force were gallantly repelled. The English dubbed the stronghold "His Majesty's Ship *Diamond Rock*."



Photograph from The Washington Post

French Sailors Wage a Constant Battle with Salt Air to Keep Martinique's Stranded Warplanes Fit

Aviation mechanics from the French aircraft carrier *Edouard* virtually live with the silent brood. The men's quarters are in a small building at the brow of the slope. The planes in the foreground are Curtiss fighters completed last June and never flown except on test flights (page 47).



Bottleneck for Martinique's Trade Is Fort-de-France, Paris-like Capital and Port

Massive walls of old Fort Louis cut the harbor in two. On one side (upper left) merchantmen anchor in the roadstead. On the other, small freighters tie up at docks. From here the island's rum, small banana, and sugar were shipped to France before the fortunes of war last summer closed the market.

Flame-Feathered Flamingos of Florida

By W. A. WATTS

VISITORS to subtropical Hialeah Park, near Miami, Florida, are now privileged to observe a phenomenon which until recently was considered impossible: flamingos building their large mud nests, propagating, and rearing their young in captivity.

Sixty of these striking, flame-colored birds were hatched in 1939 and attained full growth at 18 months. As an experiment, some of them were not pinioned; yet so far they have shown no disposition to fly away. The increase last year numbered 55.

Remote Past Re-created

Not only are the flamingos reproducing for the first time in captivity; they are propagating in Florida for the first time on record.

Fossil remains indicate that in the remote past the species nested and produced young in southern Florida, but until now, so far as ornithologists can determine, none of the flocks seen since white men came to the New World have made this a breeding ground. The flamingos which come to the south coast of Florida at rare intervals are foreign visitors, probably from the breeding colonies in the Bahamas and on small islands north of Cuba.*

Several years ago Joseph E. Widener, developer of Hialeah Park, conceived the idea that the one additional touch needed to make the park a tropical Eden was the flash of brilliant color which a flamingo colony would alone supply. With this artistic thought in mind, he imported from Cuba 30 handsome adult birds.

These flamingos, not properly pinioned, took French leave as soon as their shortened wing feathers grew sufficiently. As they disappeared in a pink cloud over the horizon, they took with them not only Mr. Widener's considerable investment in natural history, but also a measure of the hope that their kind could be brought to live and multiply in the park.

Refusing to give up at the first failure, Mr. Widener had a second lot of flamingos sent over from Cuba, and yearly, through 1939, he imported fresh groups from Central and South America. With last season's hatch, the flock now numbers approximately 450.

As the birds were delivered each year they were pinioned by experts, and have remained in the park without loss. They have long been one of the outstanding attractions, de-

lighting all corners with their grace and beauty.

For seven years, however, these Hialeah Park flamingos unaccountably failed to produce young.

Once Thought to Brood Standing Up

Little was known about flamingo matrimonial affairs in the New World. C. J. Maynard, in 1884, and Sir Henry Blake, in 1887, had been the first students of bird life to observe them carefully on their nesting grounds and report their habits. Their discoveries disproved erroneous theories which had persisted for more than 200 years.

Up to that time it had actually been supposed that flamingos did not bend their long legs when nesting, but stood straddled over their nests and propped against them for the 34 days or so of incubation. This myth originated with William Dampier in 1683.

Wrote the English navigator: ". . . And when they either lay their Eggs or hatch them, they stand all the while, not on the Hillock, but close by it with their Legs on the Ground and in the Water, resting themselves against the Hillock, and covering the hollow Nest upon it with their Rumps: For their Legs are very long; and building thus, as they do, upon the Ground, they could neither draw their Legs conveniently into their Nests, nor sit down upon them otherwise than by resting their whole Bodies there, to the Prejudice of their Eggs or their Young, were it not for this admirable Contrivance . . ." (Plate VI).

In 1902 Dr. Frank M. Chapman first went to the Bahama Islands in an unsuccessful search for flamingos on their nesting grounds. Two years later he made a second expedition to Andros Island, largest but least known of the Bahama group, and there, after weary miles of wading through the vast tidal swamps, he finally found a flamingo rookery.

Setting up a blind and exercising great patience, Dr. Chapman photographed the birds in virtually all stages from eggs to adults. He pictured the young emerging from the eggs, the parents feeding them by regurgitation, the little ones climbing for the first time out of their nests by aid of beaks and feet. He marveled that the adults seemed always to recognize their own offspring among the many at feeding time, for the chicks appeared identical.

Blake had reported that the females sat on the nests while the males stood in groups nearby. Through days of study from a palmetto blind, which was set over an abandoned nest almost within arm's reach of brooding families,

*See "The Large Wading Birds," by T. Gilbert Pearson, NATIONAL GEOGRAPHIC MAGAZINE, October, 1932; also the National Geographic Society's *Book of Birds*, Volume I.

Flame-Feathered Flamingos of Florida



© National Geographic Society

Illustration by W. F. Gerrick

First Families of Flamingos Turn Their Hialeah Park Lagoon into a Nursery

Joseph E. Widener brought these flamingos from Cuba to the enclosure near Miami, Florida. During the first seven years of their stay, they raised no young. Park attendants finally made them feel at home in the breeding season by providing stacks of loose soil, sticks, and dry grass on an island in the lake. The birds fell to with a will and erected their turret nests. One hundred and fifteen vigorous fledglings have appeared since 1939.

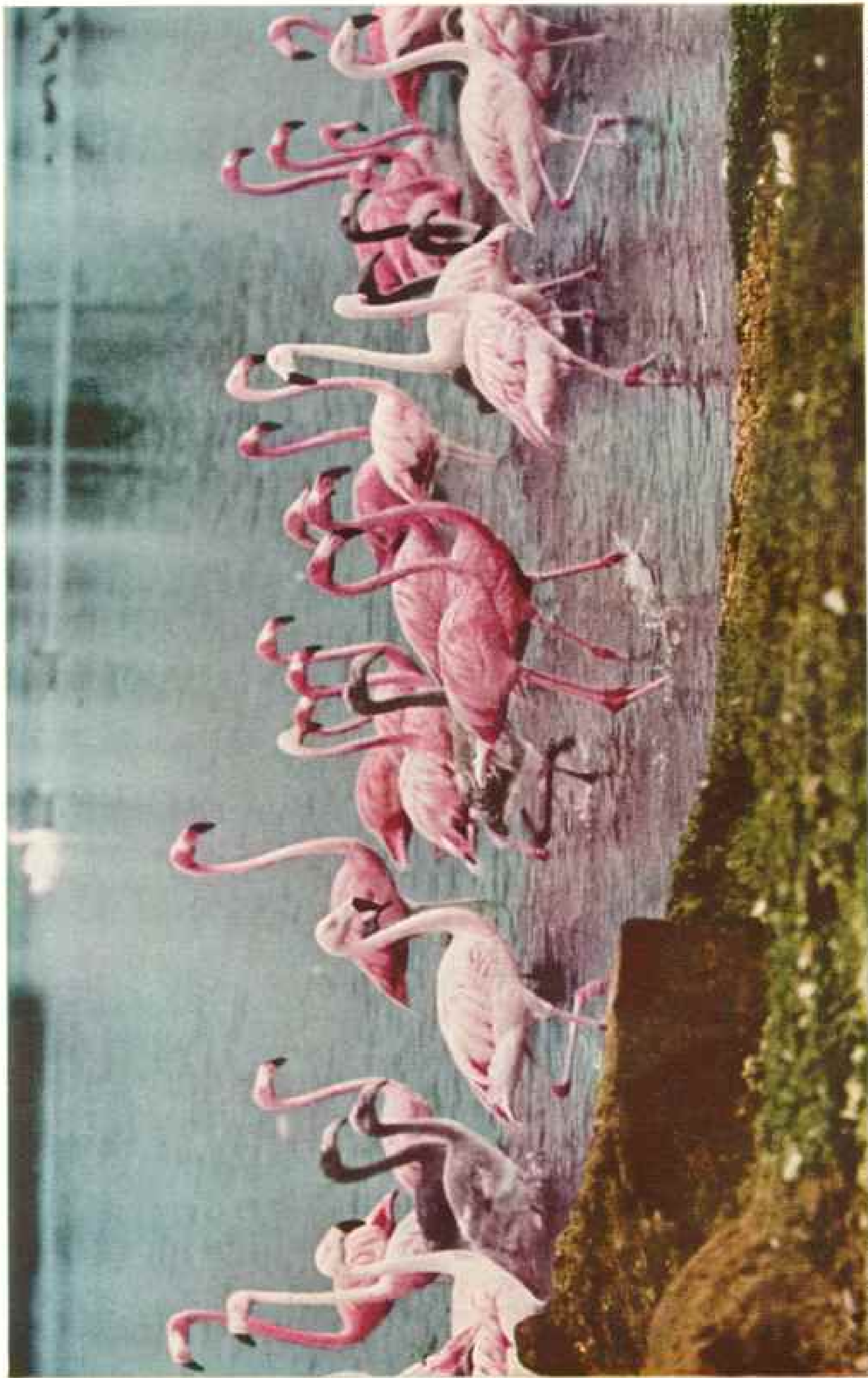


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Pastel Splashes of Pink and Jet Lead Tropic Flavor to This Florida Eden

Illustration by W. F. Getchko

Including yearlings and youngsters, Hialeah's flamingo number about 450. The birds built the first nests and raised the first young of the species ever recorded in Florida, although for a century rumormongers had persisted that they once bred there. The older birds are pinioned to prevent their taking French leave. Native haunts are Great Abaco and Andren in the Bahamas, and the small islands off the north coast of Cuba near Morón.



© National Geographic Society

Illustrations by W. F. Getchko

Hialeah's Pampered Flamingos Flourish on Cracked Rice, Dried Shrimp, Soft Wheat, and Cod-liver Oil

Diet is vitally important. If the birds are improperly fed, their pink plumage will be replaced after molting with grayish-white feathers. Each day 200 pounds of the food mixture is cooked to semi-liquid consistency and placed in steel feeding troughs along the shore line. Flamingos in the wild subsist almost entirely on small spiral shells and their contents. Hialeah's bill of fare is a scientific substitute for the mollusks.



© National Geographic Society

Kulachrome by W. F. Garcke

"Keep on Peckin'—I Can Hear You"

Proud parent apparently listens anxiously as hearty cheeps and chirrups come from within the shell. Flamingo chicks peck their own way through the thick walls—a 24-hour job.

Flame-Feathered Flamingos of Florida



© National Geographic Society

Illustration by W. E. Getchell

Stilt-legged Guardians Tower Protectingly Over Helpless Chick

In six weeks the tiny bundle will develop into an active, long-legged, swashbuckling youngster. Now it just sits, and eats, and grows.

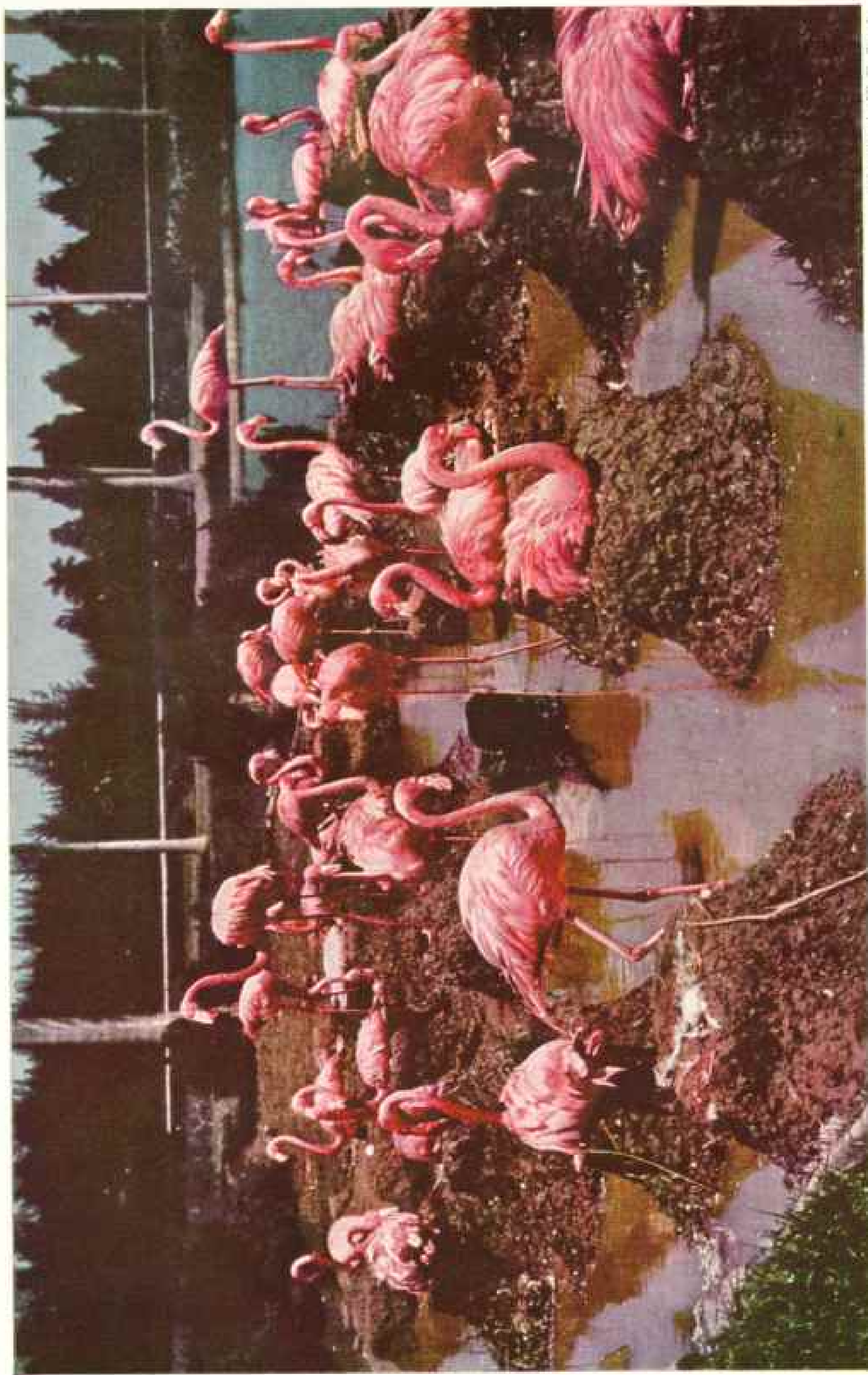


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Illustration by W. F. Orin

Flamingos Disprove an Old Myth—They Do Not Straddle Their Nests, Letting Long Legs Dangle

William Dampier, English "sea hawk," brought back this inaccurate report in 1683. The story was accepted for 200 years, until two British ornithologists proved it false. Doubled-up legs protrude directly beyond the birds' bodies like the ends of billiard cues.



Keelström by W. F. Garreth

Community-minded Flamingos Erect Their Nests of Marl and Soil Close Together

The birds build up layer after layer of wet clay and gravel to a height of about 12 inches. The cup-shaped turrets are about 14 inches in diameter at the top and 22 at bottom. Nearly all contain a solitary egg. Both father and mother bird incubate, working in 12-hour shifts for approximately 34 days.

© National Geographic Society



High Nests Safeguard Downy Chicks from Rising Tides or Heavy Rain



© National Geographic Society

Endochromes by W. F. Gorrick

Stately Flamingos Lose Their Dignity Only When Feeding Under Water

Submerged heads turn completely upside down, bills pointing backward and parallel to the floor of the lagoon. As the birds search for shells in this awkward posture, they dance a kind of jig.

Dr. Chapman definitely proved that both sexes take part in the incubating, the occupant of the nest being relieved by its mate late in the afternoon and early in the morning.

Seven-Year Mystery Solved

As these domestic activities failed to take place among the Hialeah Park flamingos, their failure to propagate became known as the "seven-year mystery."

The department in charge tried several experiments. The terrain surrounding the in-field lake consists largely of sand and therefore is unsuited for building the huge nests. For that reason, each year at mating time generous quantities of loose soil were supplied, together with running water, the dirt being deposited 200 to 300 feet from the lake. Still nothing happened.

Finally, in the spring of 1939, Joseph Morrow, chief of the grounds department, decided to place the dirt on an island in the south end of the lake, and by that decision he ended the seven years of baffled hope. The island is narrow, and dirt deposited there was near the water on either side. As later events showed, the instinctive requirements of the birds called for nesting near the water's edge.

Happy at last, the flamingos promptly fell to work, with such vigor and enthusiasm as to give ample evidence of wanting to make amends for those barren years. Soon the island bore a great colony of nests, constructed in the most approved manner; for, in addition to plenty of soft mud, sticks and dry grass were supplied to be used as reinforcing material by the brilliantly colored engineers.

This success wrote a new chapter in our ornithological history. It definitely marked the first time within the knowledge of man that the flamingo had hatched and reared its young on the North American mainland. The sixty vigorous birds which were produced that year, and the 55 last year, form a remarkable record in view of the fact that the contribution of each female is almost invariably but one egg a year and the period of joint incubation is about 34 days.

With such an encouraging start in this latitude, and with the lower Everglades to become a great subtropical national park in which bird life will be protected, it may not be difficult to envisage the possibilities of the Cape Sable region as a home of thousands of these glamorous creatures. Their flight at eventide would present a scene of such splendor as to challenge the glow of a tropical sunset.

During the earlier days of the Hialeah Park colony, the flamingo complex brought one problem after another. One that called for

much thought and care was the matter of food, for the dietary habits of flamingos are among the strangest of all known fowls.

Related to the heron family, flamingos are wading birds living in the shallow water of the marshlands, preferably the tidal marshes. Because of the peculiar dip to the outer part of the bill, they cannot attack food by moving the head and bill in a vertical plane, but must resort to a scooping motion while the head is upside down under water.

In their wild state they stand in the shallows, treading the marsh bottom with their broad, webbed feet until the mud is thoroughly mingled with the water. They then scoop up the mixture and let the water escape through their fine "teeth," or bill ridges, retaining minute mollusks as their sole bill of fare.

How to Feed a Flamingo

Certainly this process presents a difficult problem for hand feeding even to approximate. A careful study of food chemistry became necessary, for a diet rich in certain vitamins was needed to maintain physical vigor and retain the glorious color of the plumage.

The menu that has given best results at Hialeah Park is composed of cooked shrimp meal, cooked fine rice, special mash, and cod-liver oil. Reduced to semiliquid condition and placed in steel troughs, the food is given the birds once each day.

Strange as it may seem, flamingos appear to be quite immune from the ravages of predatory birds and animals. In 1939 fire in the Everglades caused temporary migration of eagles, hawks, owls, raccoons, and possums, and their invasion of Hialeah Park caused considerable loss of young ducks and swans. So far as known, however, this invasion, which continued for several months, did not cause the loss of a single flamingo.

The severe cold spell of the winter of 1939-40, which this time unhappily reached deep into south Florida, brought periods of sustained cold that killed thousands of small birds and fish. Much concern was aroused regarding the ability of the Hialeah Park flamingos to withstand such low temperatures. Though they no doubt suffered much discomfort, they passed through it without a single casualty.

Thus is offered further proof of the opportunity to create vast colonies of these gorgeous creatures in the lower reaches of the Everglades, once that area becomes a protected sanctuary for wild life. Already, by careful study at Hialeah Park, aids to Nature have been discovered that restore to southern Florida this spectacular species which has not nested there within the memory of man.



Photograph by R. Anthony Stewart

Into the Close of Winchester Cathedral

For more than 1,200 years men have worshiped God on this spot. Today's Cathedral, built on the remains of an early Roman church, dates from 1079. Many kings are buried here; this ancient edifice has seen history unfold: the Black Death, desecrations, burnings at the stake, beheadings, royal weddings, and wars.

Winchester, England's Early Capital

BY FREDERICK SIMPICH

BESIDE an old, old road that winds from Southampton Water up to London there sprawls the ancient city of Winchester, England's first capital.

For all Britons who love their history, as well as for their American cousins, this peculiarly English town of Winchester holds a fascination as deep as it is abiding.

Winchester was a pagan town, known of course by some other name, long before Romans saw it. But its place on the map of southern England, almost within sight of what is now Southampton's harbor, made it an easy stopping place for invaders from Europe (map, page 70). So it came to pass that Roman missionaries, venturing across the Channel, landed here to preach Christianity more than 850 years before America was discovered.

Slowly, as tribes and tribal tongues fused and men learned to write, ancient Winchester saw the English language being born; in lulls between wars law began to take form and to be respected; a hall arose to shelter lawmakers; religion spread, a cathedral was built—and so in Winchester was born the British nation itself.

Signs, relics, and reminders of the city's glorious past are abundant, despite the spread of things modern, from movies to beauty shops.

Here Originated the Bushel Measure and Yardstick

In what was once a guardroom, built over medieval West Gate in the city wall, you can see the dates, initials, and crude drawings cut in stone walls long ago by men bored by monotonous confinement.

Used as a museum now, this strange old chamber exhibits coats of mail, clumsy weapons of Crusader days, man traps, creaking gibbets, shackles, Cromwell's spurs, a jack boot of Charles II, and other odd relics, including bronze standards of weights and measures (page 72).

"This is the original old Winchester bushel," an English friend explained, showing a beautiful bronzed vessel. "I think it's still your standard in the United States. This bronze bar is the standard yard; tradition says King Henry I stretched out his own arm to give this measurement.

"That huge box was the city Treasure Chest. It may date from about 1590. Poles were run through these iron rings at each end so men could carry it. Here's the city's 700-year-old moot horn, forerunner of the town crier's bell. It weighs 12 pounds. The bronze horn

was made for Bishop Peter des Roches about 1250 and was used first at the castle by the warden. Later on, it passed to the City Corporation and was in use for calling meetings of the Council."

Infrequently now, as when a new king is proclaimed, this horn is sounded—if a man can be found with lungs strong enough to "wind" it.

The 14th-century West Gate itself is the last of five that once led into the walled city. High up on it are slits through which archers shot their arrows; there are bullet marks, too, left by Cromwell's men in their assault of 1645 (page 71).

From atop this gate, on a clear May day, there unrolls before you a soul-satisfying panorama of singular beauty; in almost every direction is some spot or some ancient edifice remindful of stirring events in the dramatic annals of this heroic land.

Down the peaceful, green Itchen Valley flows that stream up which Roman, Danish and Norman invaders came from Southampton Water. There is St. Giles Hill, long famous for fairs managed by the bishops and bringing customers from all over Europe.

Beyond the valley rises St. Catherine's Hill, with that conspicuous clump of trees on its summit, a compact grove shaped oddly like a peacock's crest. On this hill armies have camped since Caesar's day; within sight of it American soldiers trained for World War duty.

Three miles farther is Telegraph Hill; on it once stood a crude semaphore—one of a string reaching from the Channel to London, by which news of ship or enemy movements could be flashed from Portsmouth to London in but a few minutes.

A "Main Street" of Roman Times

Downhill from West Gate runs High Street, the original "main street" of the Romans, where today newsstands, gas pumps, and chain stores elbow hoary structures of the past (page 86). Where motorcycles and automobiles now sputter and snort, this High Street long echoed to the rumble of royal coaches, the tramp of armed men, the rattle of swords, shields, and glittering harness, and the angry shouts of foreign enemies speaking in strange tongues.

Nobody knows who built the first settlement here or when; all that is lost in the mists of antiquity.

If any one man can be said, however, to have laid the foundations of the British Empire, it was Egbert, the Anglo-Saxon King



Photograph by Volkmar Westhof

Refugee Children from Winchester, England, Find a New Home in Winchester, Virginia

They are: Brenda Carter, 16; Betty Edmonds, 15, and A. Roger Edmonds, 14. The last two are children of old Winchester's mayor. Mayor Anderson, of the Virginia city, reads a scroll explaining how the comparatively young Virginia town was named for the English city (pages 74, 84).

educated by Charlemagne, who in the year 827 proclaimed himself king over all England and compelled all petty kings to recognize his overlordship. He reigned at Winchester; his bones are preserved in a chest in the Cathedral. From Egbert and his Edict of 827 dates the foundation of the British nation, and Winchester was its birthplace.

A Shrine of English-speaking World

Because Winchester had so much to do with the beginnings of the English-speaking world, it holds a special interest for Americans as well as British. It is only a short ride from either London or Southampton to this birthplace of the English race.

Here Alfred began to set down Anglo-Saxon history. The famous *Anglo-Saxon Chronicle*, a sort of outline of history for the first few centuries of the Christian Era, was written here, at least in part, and now is jealously guarded in the British Museum (page 76).

After all English tribes were united in one nation, their prose and spoken language began to develop here, so that English-speaking people everywhere may look on this old, old town as the original "nursery of their language." To see how it has changed, you have only to compare the original Manuscript Bibles with the Revised Version; or look at any other surviving examples of English when it was young. What with its quaint spelling and admixture of Latin and obsolete words it is not easy for a modern to read.

No matter how many years have passed since one last scanned a textbook of English history, it comes back with a rush when he strolls through Winchester.

Stidious King Alfred; Canute, the conquering Dane who hung his gold crown over the Winchester Cathedral altar; Queen Elizabeth; James I and gallant Sir Walter Raleigh; Cromwell, Charles II, and the flirtatious Nell Gwyn, and all the intrigue and uproar of



Photograph from *Win. M. Spencer & Co.*

Reliefs on This Font in the Cathedral Show Scenes from the Life of St. Nicholas

Carved from black Tournai marble, this early Norman font was probably a gift from Bishop Henry de Blois. Though a fighting man—he once bombarded Winchester—the bishop had his kind side. He founded the St. Cross Brotherhood, which for 800 years has helped friendless old men.

the Reformation—here these people and these events are not phantoms and dreams; they are real. Step into Great Castle Hall, just as you leave West Gate, and the sense of history's realities is overwhelming (page 78).

Where Sir Walter Raleigh Was Tried

"Up there hangs King Arthur's Round Table," our guide said, pointing to a huge wooden disk fastened high up on the Castle wall (page 77). "The 24 names painted on it are those of his knights; they used to gather about this big table with the King and hold their councils." How like romantic actors in some great historic drama many of these old-fashioned names now sound—Launcelot du Lac, Tristram de Lyonesse, Bors de Ganis, Dagonet, Gareth, and Galahad.

Among such notable defendants of chivalry, tournaments involving feats of arms were frequent in early Winchester. After such sport, knights met at these round tables to

dine together in "locker-room post-mortems."

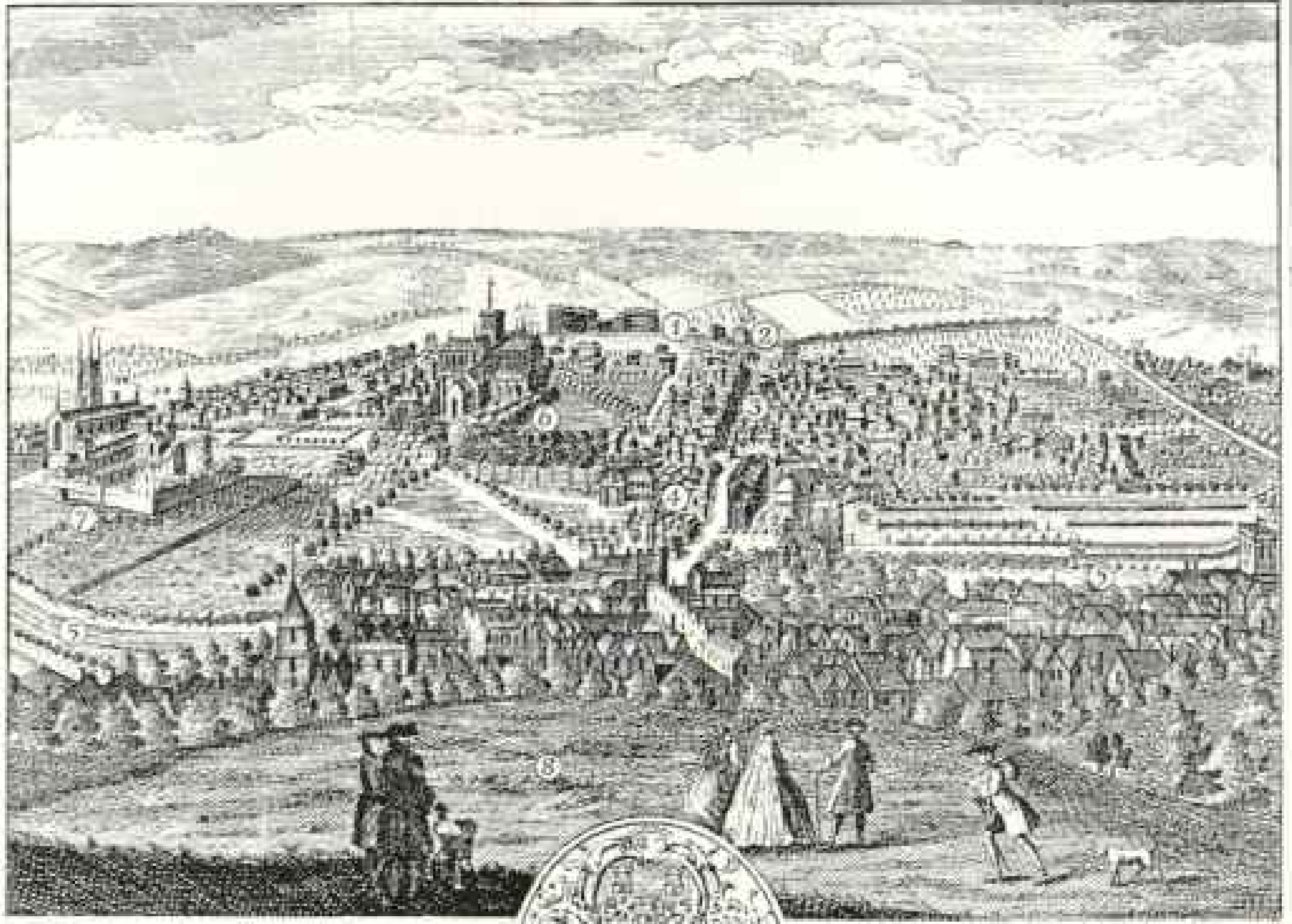
So many men were hurt and slain in these rough contests that in the 12th century Pope Alexander III denounced them as unlawful and deprived men so killed of Christian burial. What harangue the world has heard at all its noisy "round table" discussions since Arthur's knights assembled here!

Whether this particular round table ever was really used by King Arthur is uncertain, though its great age is beyond doubt. Even in the 15th century it was already looked upon as an object of historic interest, and of it an early writer said:

The Round Table at Wynchester beganne
And there it ended, and there it hangeth yet.

This Great Hall, like the banquet hall under the giant arch at Ctesiphon near Baghdad, is all that remains of the royal castle of the Norman and Plantagenet kings. Parliaments met here. On one wall you can still see a crude speaking tube; they say the King, listening

1 Castle Great Hall - 2 West Gate - 3 High Street - 4 The Guildhall - 5 River Itchen
6 Winchester Cathedral (of the Holy Trinity) - 7 Winchester (St. Mary's College) - 8 St. Giles Hill



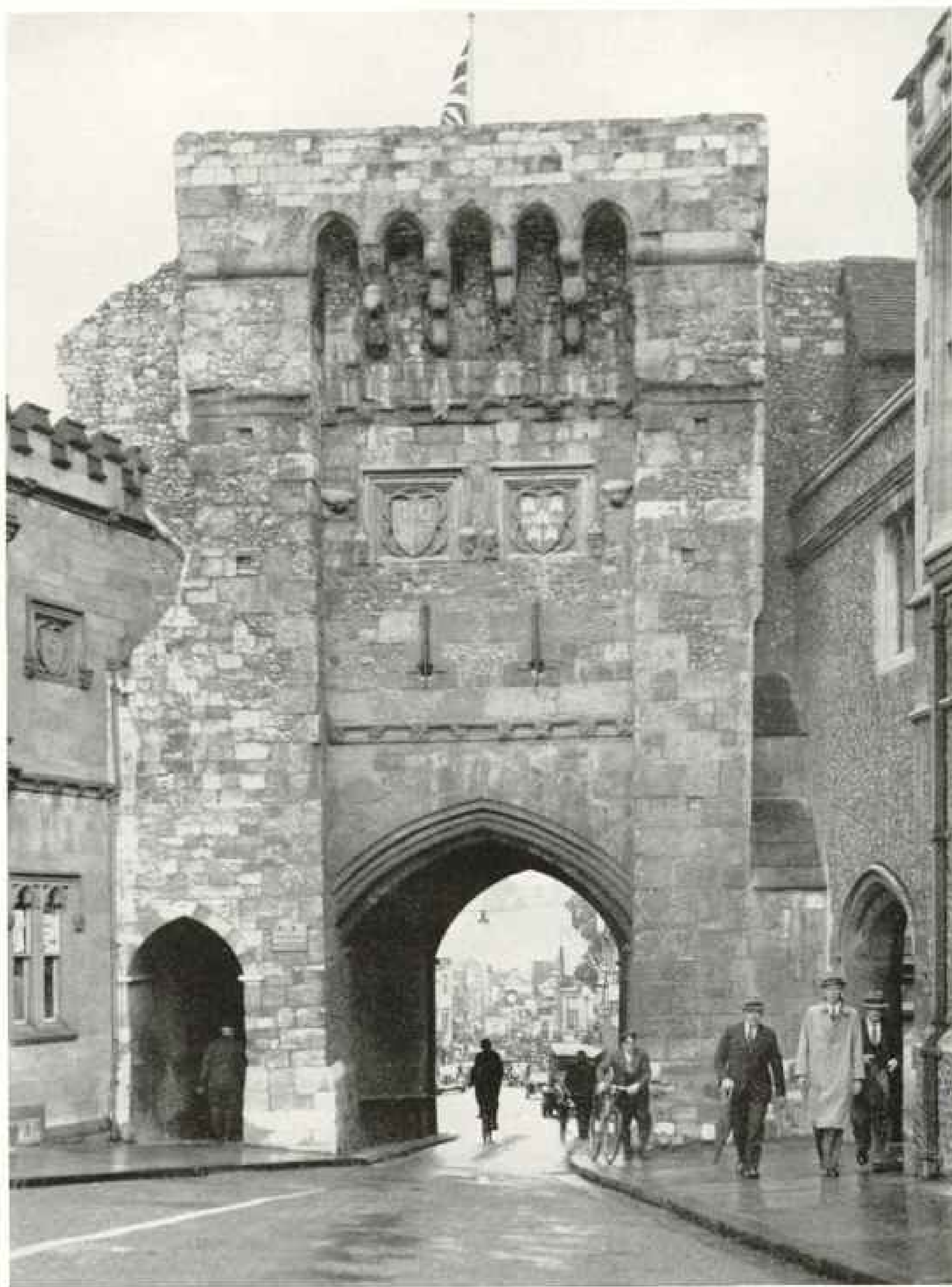
THE EAST PROSPECT OF THE CITY OF WINCHESTER



Prepared by C. K. B.

Winchester Lies in Hampshire, not Far from the Harassed Channel Coast

England's first capital, famous for its big Cathedral and Norman castle, has not changed much since the old engraving above was made in 1812. Winchester still fits the descriptions by Thomas Hardy in *Tess of the D'Urbervilles*. Here was founded in 1382 England's first public school, Winchester College. Now the town swarms with refugee children from London. The print is reproduced from *England in Picture, Song and Story* (D. Appleton-Century Co.) through the courtesy of its author, Dr. J. W. Cunliffe.



Photograph by B. Arthur Stewart

One Entrance to Old Winchester Is Through West Gate

Arrow slits are seen over the arch. Through other holes molten lead was poured on besiegers. Once there was a drawbridge here over a moat. Outside the gate stood the King's hawkhouse and a shelter for lepers. For centuries the city bessele brought nocturnal prowlers to this gate and locked them in a cage near by (page 67).



Photograph from Frederick Clapham

Here Are Preserved Standard Weights and Measures Adopted Long Ago

On the top shelf rests the town's historic moot horn, dating from about 1200; it is blown on state occasions to assemble the townfolk. Below are various containers for liquid measure, and weights for dry measure. The "Winchester bushel," used in the United States, originated here. The imperial bushel of Great Britain is larger.

from another room, used this "King's ear" to overhear what was being said at meetings in the Great Hall.

Though the castle stood unharmed during the sieges by the royalist troops of King Stephen, and again when attacked by the barons under Simon de Montfort, it fell in the assault by Cromwell's rebel army.

It was from here that one queen, Matilda, escaped by a clever ruse: she caused a report to be spread of her illness and death, and then, under a flag of truce, had herself shrouded as a corpse and carried out in a coffin!

Street loafers threw their pipes at Sir Walter

Raleigh, who introduced pipe smoking into England, when he was led through town for trial in this hall in 1603. Raleigh was condemned to death, then reprieved, sent on a gold-hunting trip to the Orinoco, and beheaded in the Tower of London 15 years later on the original charge of conspiracy.

Here in Winchester many famous treason cases were tried. Most familiar to all students of history are the so-called "Bloody Assizes." To carry out his wishes James II named Lord George Jeffreys as Chief Justice. "Work was to be done," says Macaulay's *History of England*, "which could be trusted to no man who revered the law or was sensible of shame."

In all, Jeffreys hanged 320 men and women and sentenced 840 to transportation; these he ordered sold as slaves in the West Indies.

Recent excavations show that long ago tunnels, used as secret exits, led to Winchester Castle from its outer defenses. It may have been through one of these that King Henry III escaped when,

somehow, he eluded the besiegers under Montfort and got out safely and away to the Tower of London. In the glass windows of the Castle Hall are painted the names and arms of Hampshire families famous in early Winchester history (page 80).

A Newspaper's Name Too Long for Its Own Headlines

Published here is a newspaper with a long name—The Hampshire Chronicle and General Advertiser for the South and West of England. First printed in 1772, it is one of the country's oldest provincial newspapers. A

fascinating feature is reprint of news of long ago. For example:

May 9, 1785. Mr. Wharton kissed the King's hand on being appointed Poet Laureate.

The stage cart from Exeter to Ottery St. Mary was entirely burnt, with all its goods, when the axle tree caught fire because the driver had neglected to grease it.

Mr. Blanchard's balloon went up . . . carrying Miss Simonet, the dancer, and her small lap dog.

John Rogers, horse thief who died in jail, left a log book naming the number of horses he had stolen, with the day of the month and 568 owners' names.

Monday, May 11, 1835. British authority in India is paramount. That of the French is almost annihilated . . . Portuguese linger in a few spots . . .

Danes have a few settlements . . . the Dutch retain Sumatra, Java, Borneo and some other islands, but from none of these has Britain anything to fear. Her rivals have fallen, and left her in possession of the most gigantic dominion ever appended to a foreign state.

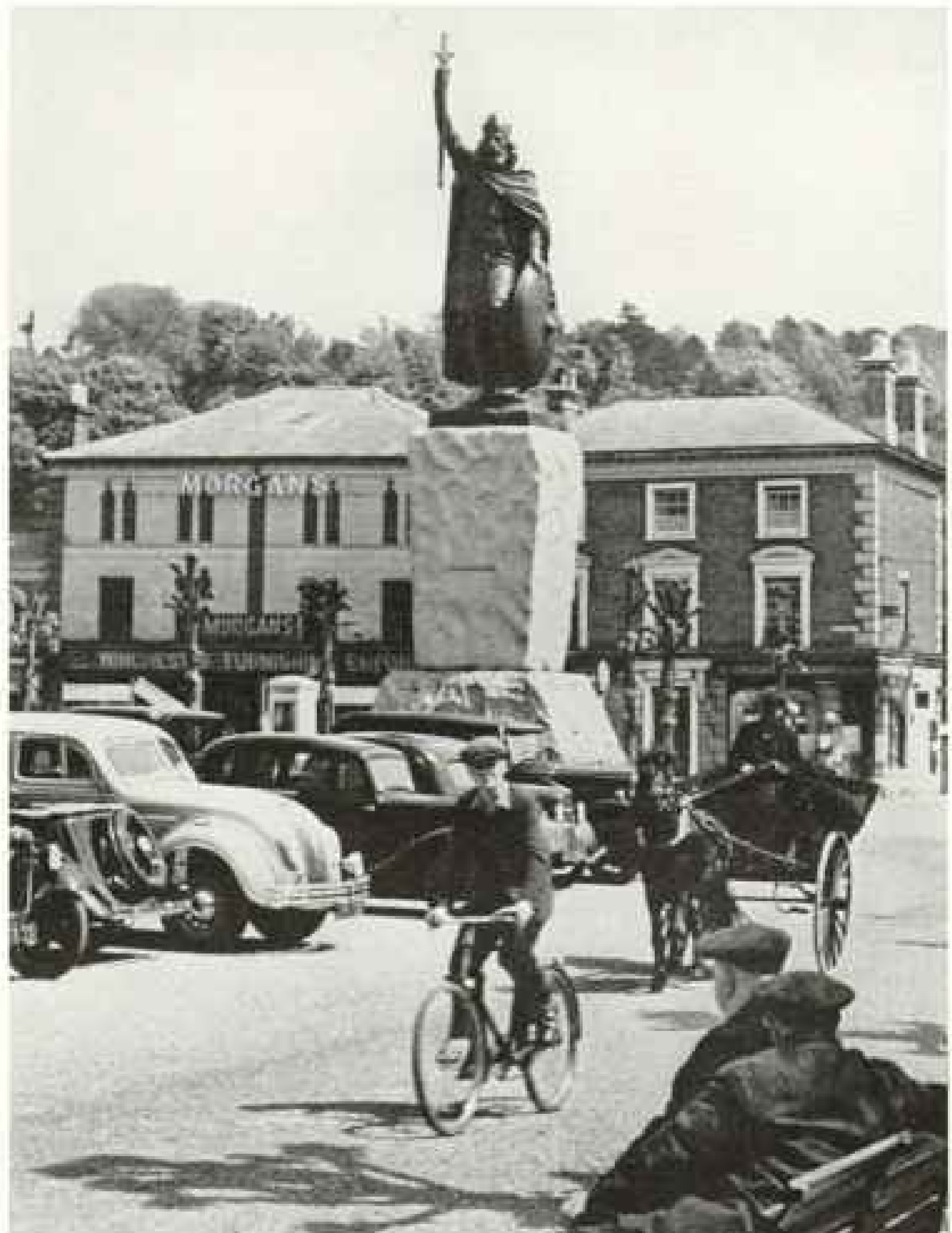
Thus, in the back files of this Winchester paper, you can see how not only the old capital but the nation itself grew up.

Like any American newspaper, this Chronicle advertises bargains in used cars; columns of want ads and clearance sales; boxing; ice skating; lessons in dancing, music, French, stenography; home talent plays; concerts; and chiropody.

I talked with the editor. His paper goes to Hampshire folk now scattered all over the world.

When Men Were Deported for Stealing a Rabbit

"Now and then a visitor comes from the West Indies," I was told, "or from Australia or Tasmania, hunting through old church and court records for information about some ancestor exiled from here in early colonial times."



Photograph by R. Anthony Stewart.

High Street, with Thornycroft's Statue of King Alfred the Great

Here in 827 Egbert, Alfred's grandfather, was crowned king and issued his Edict abolishing tribal distinctions and directing that all tribes in the nation should be called "English." Here Alfred began recording Anglo-Saxon history; all the English-speaking world now looks on Winchester as the nursery of its language (page 68).

A man so punished was said to have been "sentenced to transportation"; usually his exile was for seven or fourteen years, sometimes for life. Incredible it seems now, yet cases are on record of men sent to penal servitude overseas for such trifling offenses as stealing a fleece, a keg of beer, or even for snaring some farmer's rabbits!

Debtors jailed in West Gate prison used to stick a collection box out through the bars so charitable passers-by might drop in a few coins. Winchester College made weekly allotments of ox and sheep heads, oatmeal, salt, bread, and beer—as well as table scraps from the boys' dining hall—to feed local prisoners.



Photograph by H. Arthur Stewart

How Many People, in How Many Lands, Use the Eagle as a Symbol!

This lectern in St. Cross Chapel has an eagle's body, wings, and plumage, but the head is much like that of a parrot. Here adjustable electric reading lamps or microphones may rise above tiles many centuries old, and vergers may clean the old, old aisles with modern suction sweepers (pages 81, 87).

Tragic tales of burnings, beheadings, disemboweling, drawing and quartering, or hanging on the gibbet make sorry reading in the long, turbulent annals of Winchester (page 88).

It was King William, crowned here in 1068, who had the Earl of Waltheof beheaded on St. Giles Hill; it is written that, as the ax fell, Waltheof was saying the Lord's Prayer and that, as his severed head rolled on the grass, it was heard to say, "Libra nos a malo"—"Deliver us from evil."

In model, law-abiding Winchester of today it is hard to imagine that it ever really saw such tragic scenes!

Near the City Museum, in the shade of fine old trees, stand some weather-beaten tombstones. One rhyming epitaph tells how a Grenadier died from drinking "small beer" while he was too hot (page 90).

Just below the Hampshire Chronicle on High Street stands Old Guildhall, its clock hanging over the street. Here curfew is rung every evening. People no longer hurry home when it rings, but this signal, begun by William the Conqueror, was long compulsory. "Curfew," corrupted from *couvre feu*, meant "cover the fire." It warned Saxon peasants to put out their fires and go to bed.

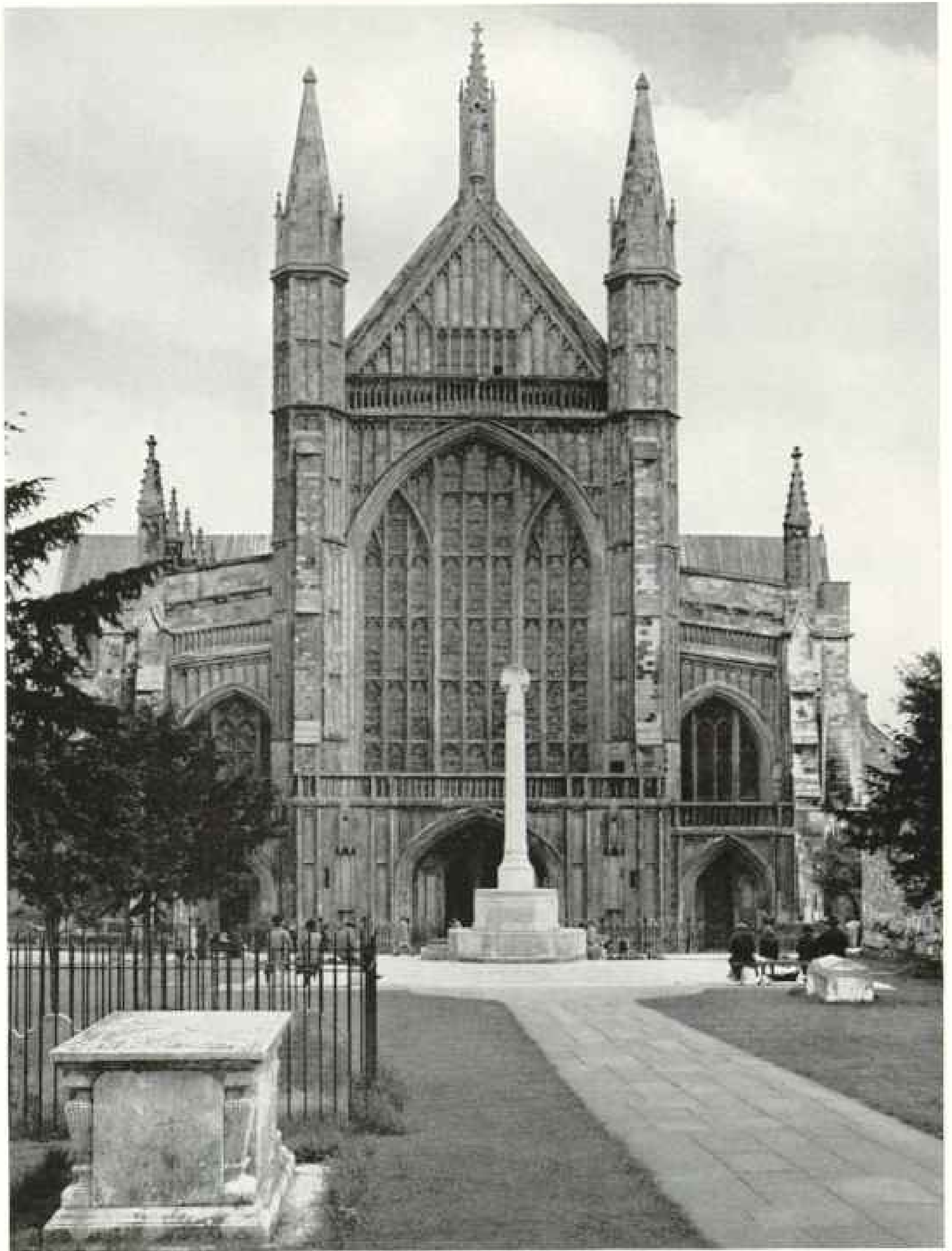
"Curfew Shall Not Ring Tonight" was long a favorite recitation in many an American "last day of school" exercise. The poem's plot has to do with a young Englishman sentenced to die when next curfew rang; his sweetheart, to save him, climbed up into the bell tower and swung on the big clapper when the sexton came to pull the rope.

However, this poem, which so well pictures the quiet evening hour in an English country town, was not written in England at all but in Indiana—by Rosa Hartwick Thorpe when she was a schoolgirl.

Ties with Virginia and Plymouth Rock

"I have published more than 400 articles descriptive of Winchester archeology and early days," said S. Ward-Evans, local historian.

"In 1936, Dr. C. R. Anderson, mayor of Winchester, Virginia, made us an official visit (page 68). Besides a silken flag and a scroll, he brought a model key to his city; it is made of wood from Fort Loudoun, which defended Shenandoah Valley against the French and



Photograph by D. Anthony Stewart.

A Kinsman of William the Conqueror Erected Winchester Cathedral

Although much of the historic edifice has been rebuilt since, the transepts remain Norman. Some of the sturdy beams hewed not long after the Battle of Hastings still are intact. Beneath the pavement, alongside kings and queens, Isaac Walton and Jane Austen are buried (page 91). Before the west entrance (above) stands a memorial to British soldiers who died in the First World War.



"Get Back! My Frog's Going to Jump!"

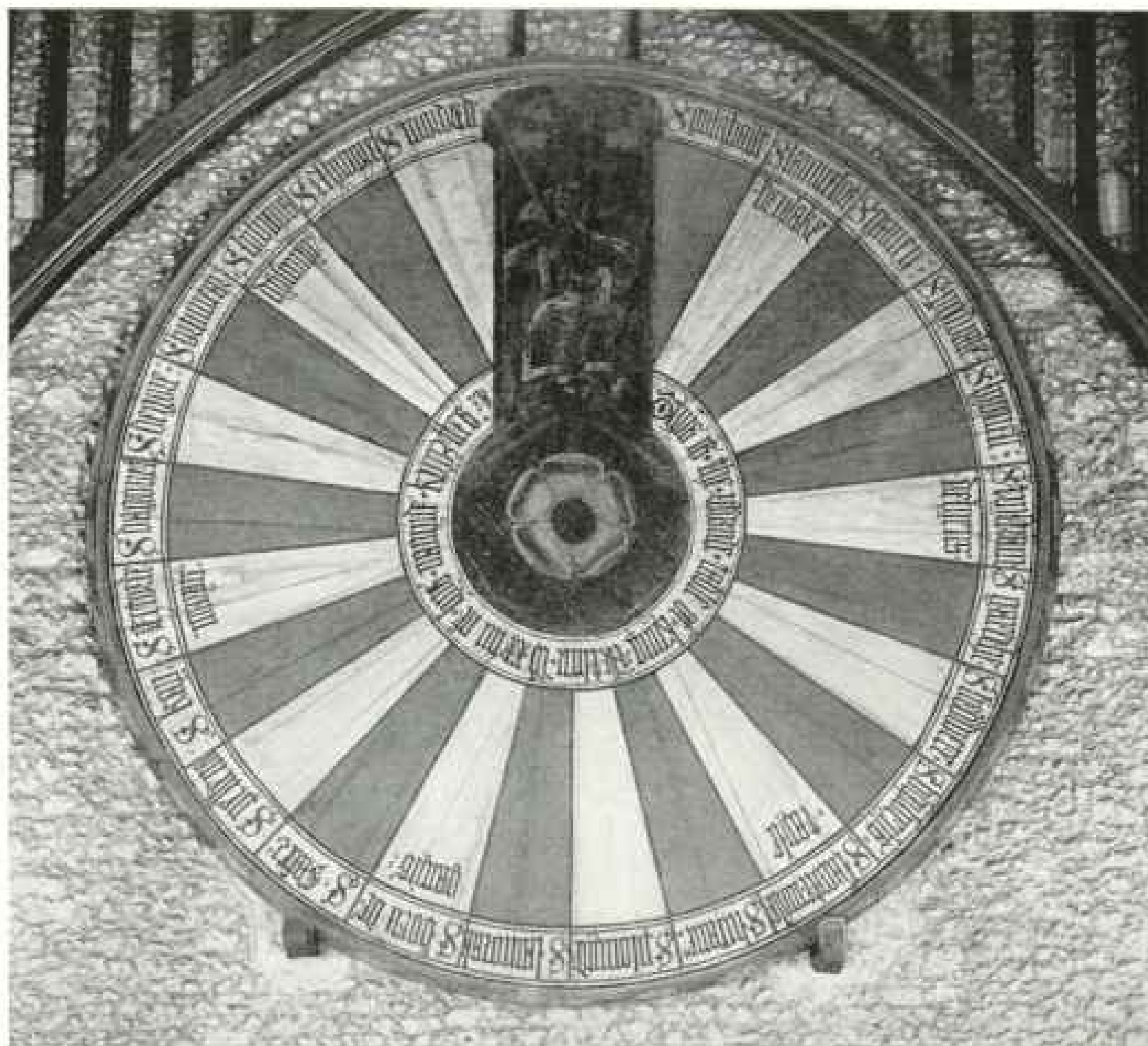
Green meadows along the River Itchen near St. Cross Hospital afford fine playgrounds for Winchester children. Here some have gathered wild flowers and two boys hold tired tadpoles and minnows in glass jars.



Photographs by B. Anthony Stewart

Many Say "Britain's Most Interesting Book"

This *Anglo-Saxon Chronicle*, set down in old Latin and Saxon script, is guarded in the British Museum, London. It reads in part: "A.D. 1. . . . Octavianus reigned 36 years . . . Christ was born . . . A.D. 3. . . . This year Herod died," etc. It records English and other history for many centuries. Alfred wrote some of it at Winchester (page 68).



Photograph from H. W. Salmon and Son

About This Round Table King Arthur May Have Sat with His Knights

For centuries this 17-foot table has hung in Winchester Castle's Great Hall. Mentioned in records of 1253, and once set on legs, experts believe it was an authentic royal table at which knights feasted and planned their military movements and jousting tournaments (pages 69 and 78).

Indians. That fort was built by George Washington and named for the Earl of Loudoun, commander in chief of Colonial forces.

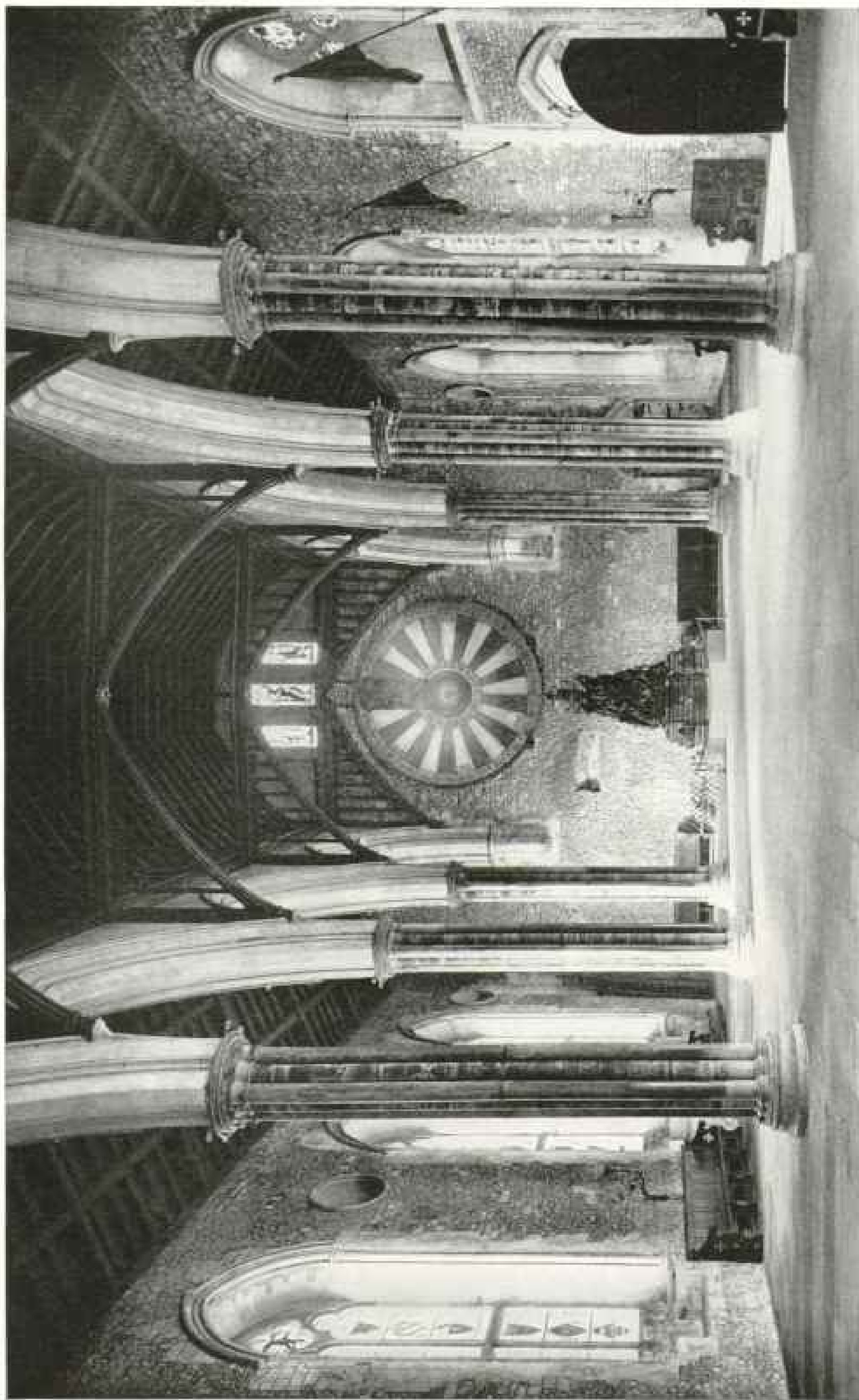
"The American mayor's visit recalled many early associations between our old town and its Virginia namesake. During the reign of Queen Elizabeth, Sir Walter Raleigh sent out a number of ships of colonists to America and gave the name Virginia to their settlement, out of compliment to England's Virgin Queen. Three hundred and thirty-four years ago, Sir Walter Raleigh was held prisoner, awaiting trial, in Winchester Castle.

"King James had bitter hatred for Raleigh, and a 'packed' jury was induced, upon poor evidence, to pronounce the patriot guilty of treason. In consequence, Raleigh's valuable rights in Virginia reverted to the Crown. In

1606 the Virginia Company was chartered and made good all English claims to the colony.

"A few years later, in the reign of James I, six poor boys of Winchester, England, were fitted out with clothes and other necessities just before their departure for Virginia. In this city's archives it is recorded that the money for purchasing the items was taken out of the civic coffer, the coffer now seen in West Gate Museum.

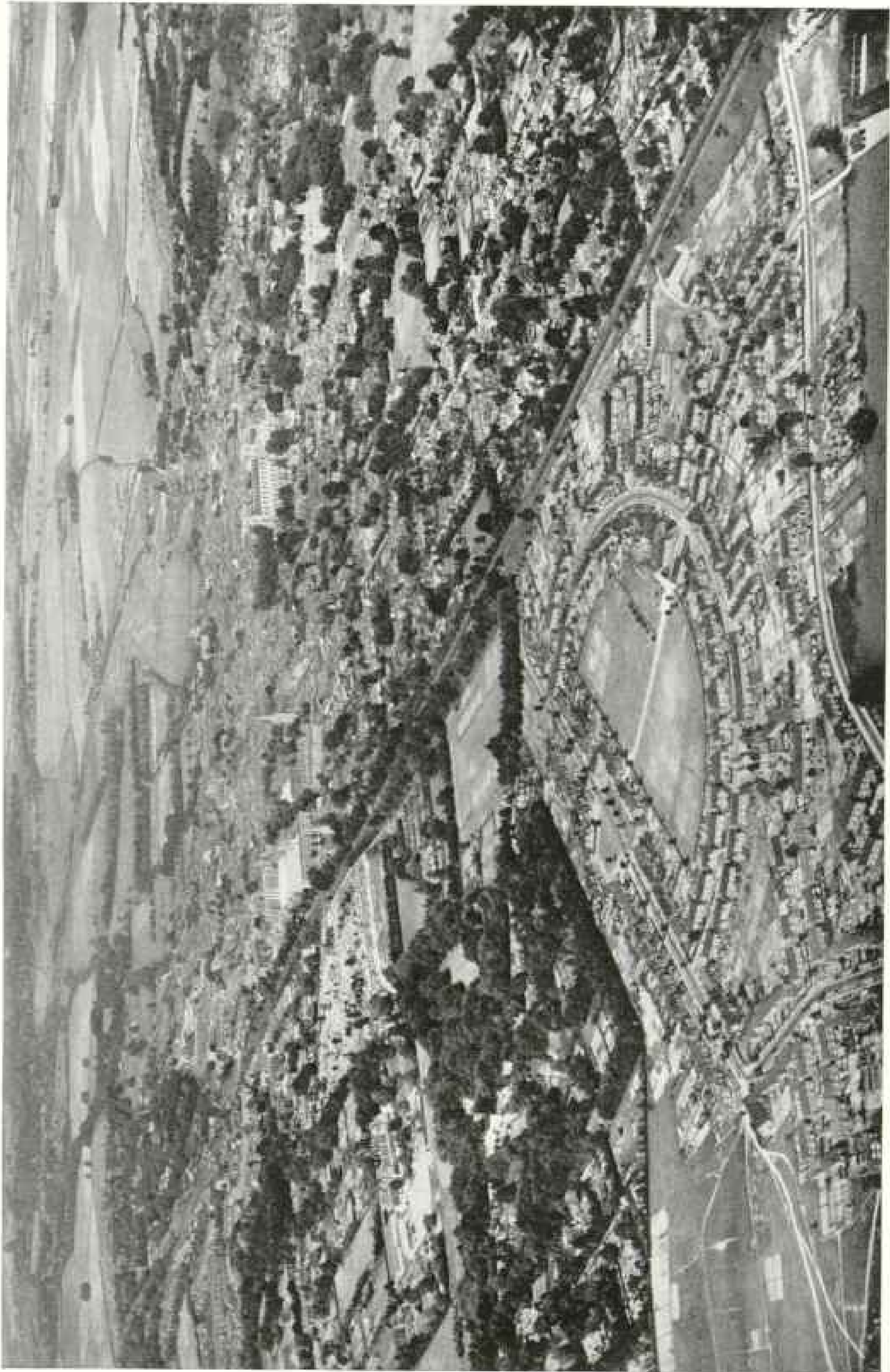
"There are other early connections between Winchester, Hampshire, and the American States. During the reign of King William III, Samuel Sewell, a native of Hampshire and later Chief Justice of New England, came on holiday to Winchester. His diary mentions his visit to Castle Hall and how he broke his rapier upon descending some awkward steps.



Photograph by H. W. Salmon and Son

In this Great Hall of Winchester Castle William the Conqueror Decried the First Curfew

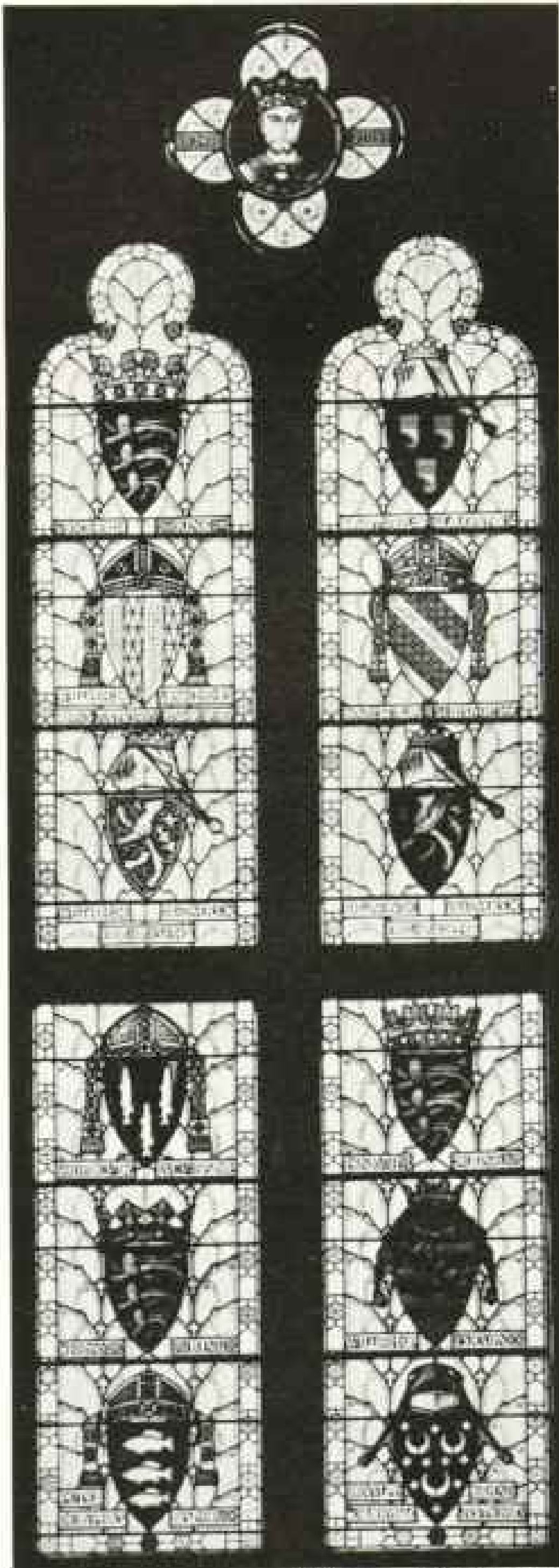
In the background hangs the reputed "King Arthur's Round Table," and above it are 13th-century stained-glass windows. Painted on the table are the names of knights, such as Tristram de Lyonesse, Dagonet, and Bors de Gans. In this hall Parliament met. On one wall you can still see a crude speaking tube, or "King's ear," used by His Majesty to eavesdrop on his courtiers (page 69). Here Sir Walter Raleigh was condemned to death in 1603 (page 72).



© Associated Press

This Is How Winchester Looks from the Air on Clear Days

At right center is the great Cathedral. How planned modern housing can be accomplished without spoiling the symmetry of ancient places is shown by the modern homes grouped in the foreground. Archeologists say a town of some kind has stood here since at least 500 a. c. Today the place has about 25,000 people.



Photograph by D. Anthony Stewart

Arms of Kings, Prelates, and Nobles

Normally enshrined in windows of Winchester Castle's Great Hall, but now removed for safety, these coats of arms are fine examples of 13th-century stained-glass work. In early days glass windows were rare, and they usually belonged to the tenant. When he moved out, he took the windows with him.

"One member of the old Washington family to which belonged America's first President was rector of Chilcomb, Winchester, early in the last century.

"The Pilgrim Fathers sailed in the *Mayflower* from Southampton on August 15, 1620. A column now stands on the western esplanade in memory of the event; a great many who contributed to its cost were actual descendants of those who voyaged to a new land in the *Mayflower*.

"Plymouth and Dartmouth also point out: 'Where the *Mayflower* sailed from'; but the ship really sailed from Southampton and called at the other two ports on her way to the Atlantic."

The First English Census

At the Record Office Museum in London they had shown me the famous old Domesday Book. Concerning it historian Ward-Evans of Winchester says: "When William the Conqueror ordered the making of complete records of men and their property throughout the Kingdom, he sent officers to every district. They called the people together and wrote down their statements. These documents were sent to the palace at Winchester, where scribes copied them and produced the 'Domesday Book.' Its beautiful leather cover, centuries old, testifies to the artistic merit and durability of the local workers' production in leather."

Years of painstaking study and careful inspection of all objects dug up in excavating for new buildings have enabled Mr. Ward-Evans and other Winchester students to gain accurate knowledge of man's activity here through many centuries.

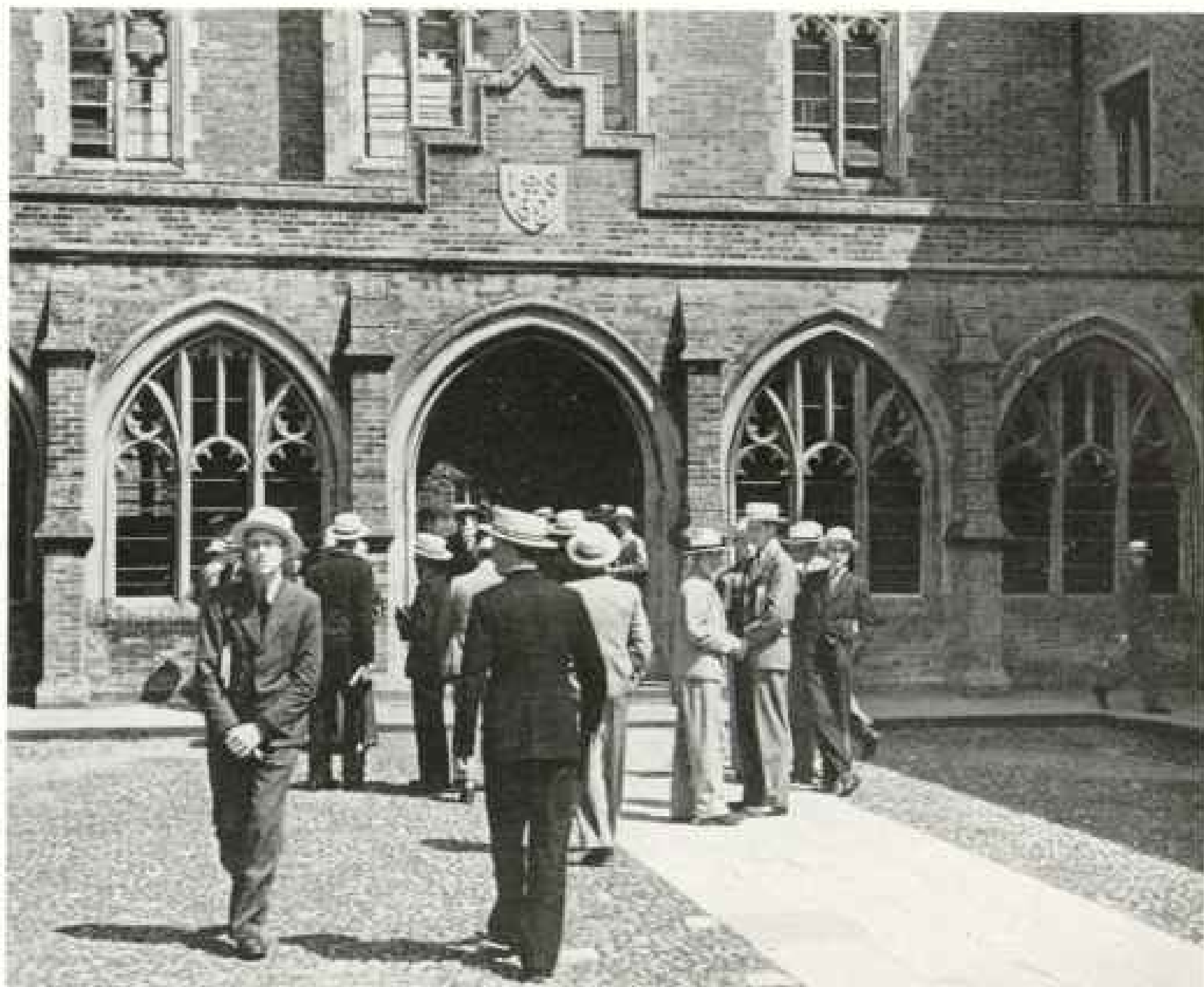
They know that a tobacco shop and dairy now stand where the Conqueror had his forges for making armor and horseshoes. Beneath a grain dealer's place on High Street was found an Anglo-Saxon grist mill with the upper stone intact.

Near where the Guildhall now is stood the vast St. Mary's Abbey. From it came *An Ancient MS. of Prayers*, today over 1,000 years old and still preserved. Between Lower Brook Street and Busket Lane, site now of a bus stop, men found the remains of the Royal Mint. Piecing together all these and many, many other revealing finds, one can trace the cultural growth of Winchester from remote antiquity to present times.

"Where is St. Cross," we asked, "and that home for old men where any visitor can get free bread and beer?"

"Walk out past the College ground and down the stream," they said.

Small boys and girls, wading barelegged after tadpoles, pointed out the path, and



Photograph by R. Anthony Stewart

"Manners Makyth Man" at Winchester College

So said William of Wykeham, who opened this oldest of English public schools in 1393 (page 92). From this nursery of character and learning in centuries gone have come a long list of men eminent in English life.

laughed with us at a loose horse that snorted, kicked up his heels, and galloped off over green pastures when a farm hand, hiding a bridle behind his back, tried to sneak up and catch the animal.

Free Beer and Social Security

Through a stone gateway we came to St. Cross Hospital, founded by Bishop de Blois in 1136, to be "a home for 13 poor men" and to give daily bread to 100 others. Cardinal Beaufort added his support in 1446, and the two orders of brothers are still seen. Those in black wearing a silver Jerusalem cross are the original De Blois members.

In 1151 the Knights of St. John of Jerusalem took control of St. Cross, and the little symbol worn now by the 13 brothers is the insignia of the Kingdom of Jerusalem, a society formed by the Crusaders. After death a brother's cross is pinned on his successor—so now some of these trinkets are very, very old and worn.

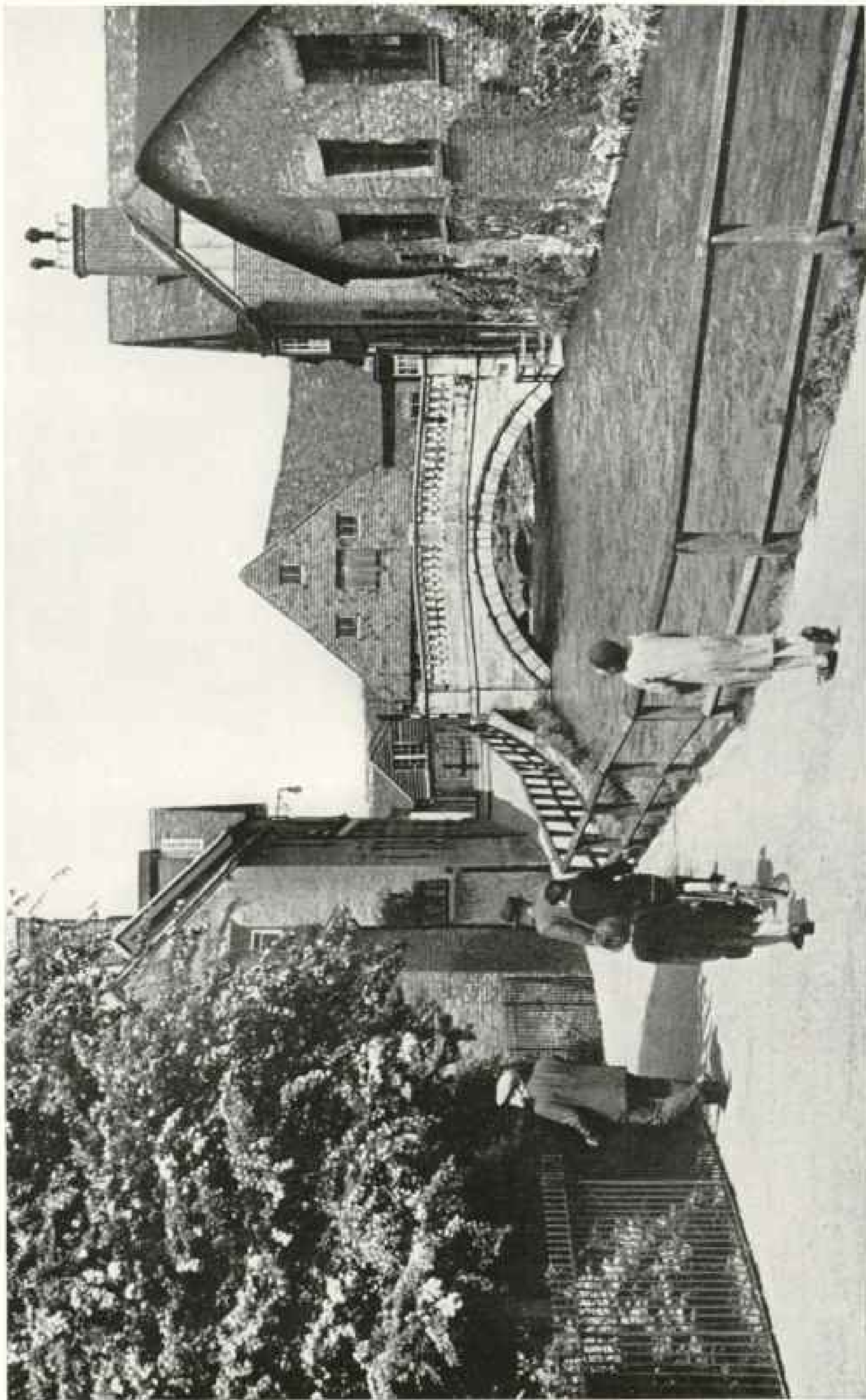
It was the unemployables of his day, the chronically needy, whom De Blois planned to aid. Beaufort, on the other hand, helped those who, after lives of ease and comfort, had fallen upon evil days. You can tell the Beaufort members by their distinctive plum-colored gowns (page 85).

On feast days, such as All Souls or Candlemas, extra good things go to the brothers. In old days it was prescribed they should get enormous roasts of beef and mutton, mince pies, plum broth, and beer.

On Good Fridays they had "in their pot of beer a cast of bread sliced, and three pounds of honey boiled together, which they called honey sop."

Middle Age monastery customs survive as you enter the big gate; there at the porter's lodge each day they give away a fixed amount of beer and bread to anyone who asks—just as in days of old the monks fed the passers-by. They call this the "wayfarer's dole" (p. 91).

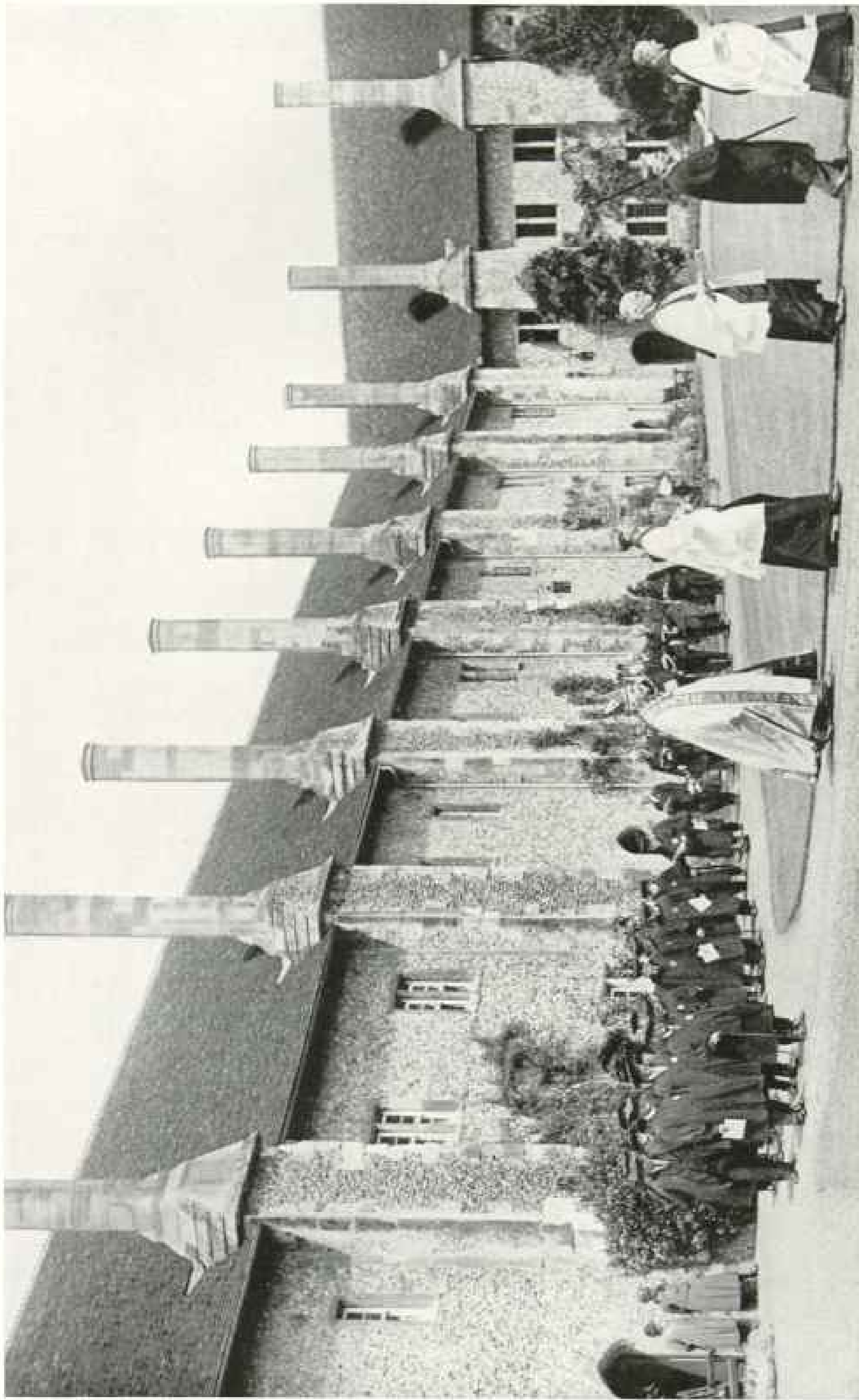
Ancient St. Cross Church, where anybody



Photograph by A. Anthony Brown

Where River Murmurs under Historic Soke Bridge and Past an Ancient Mill

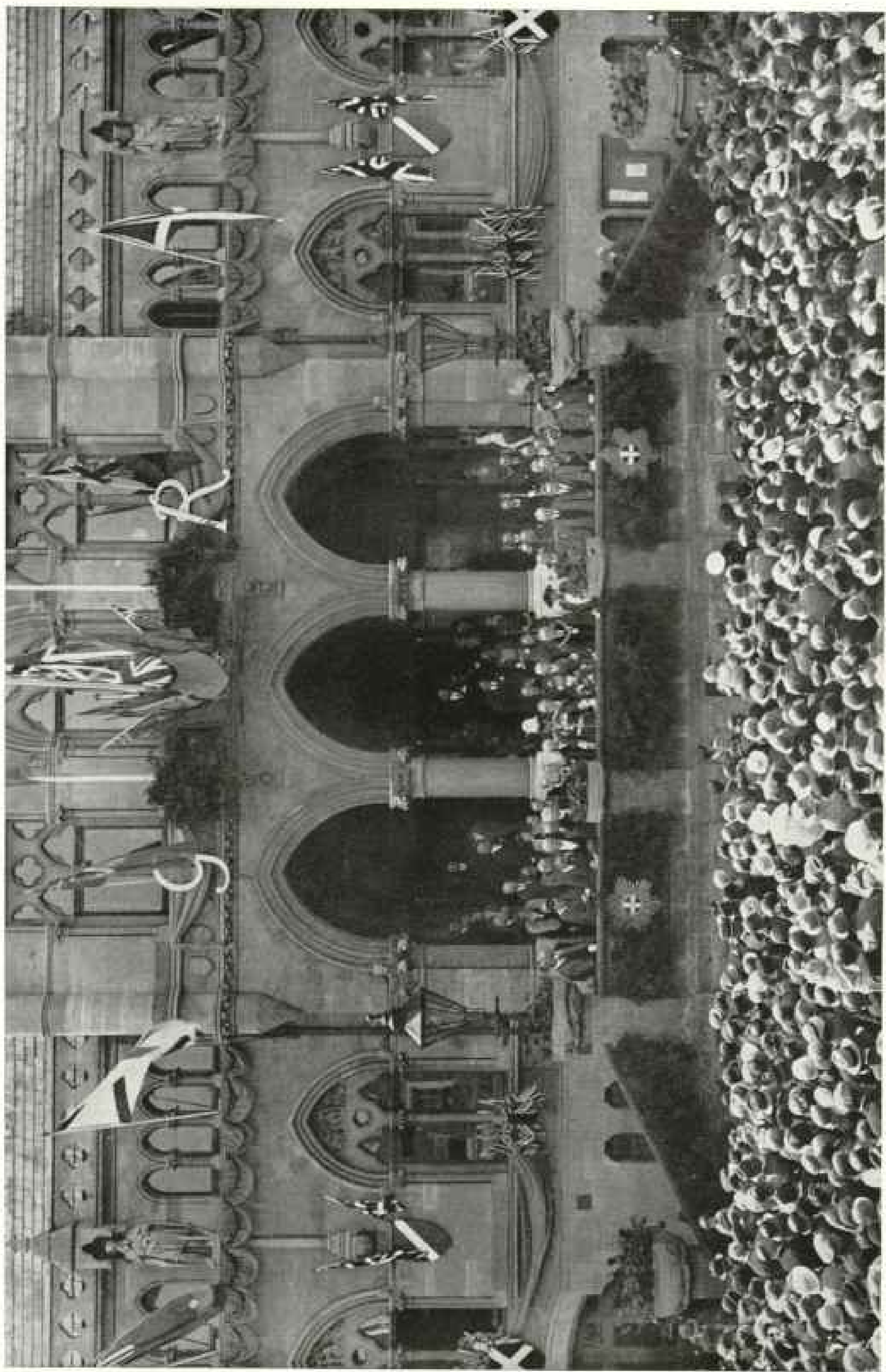
Pleasant footpaths follow the river whose waves lap at mossy foundation walls. Some booms here were old when Cromwell came and captured the castle. This picture was made in late May, when meadows were green and all blossoms at their best.



Photograph by London Lams from Pictures, Ltd.

"Brothers of Noble Poverty" Celebrate the Founding of Their Refuge, St. Cross Hospital, in Winchester

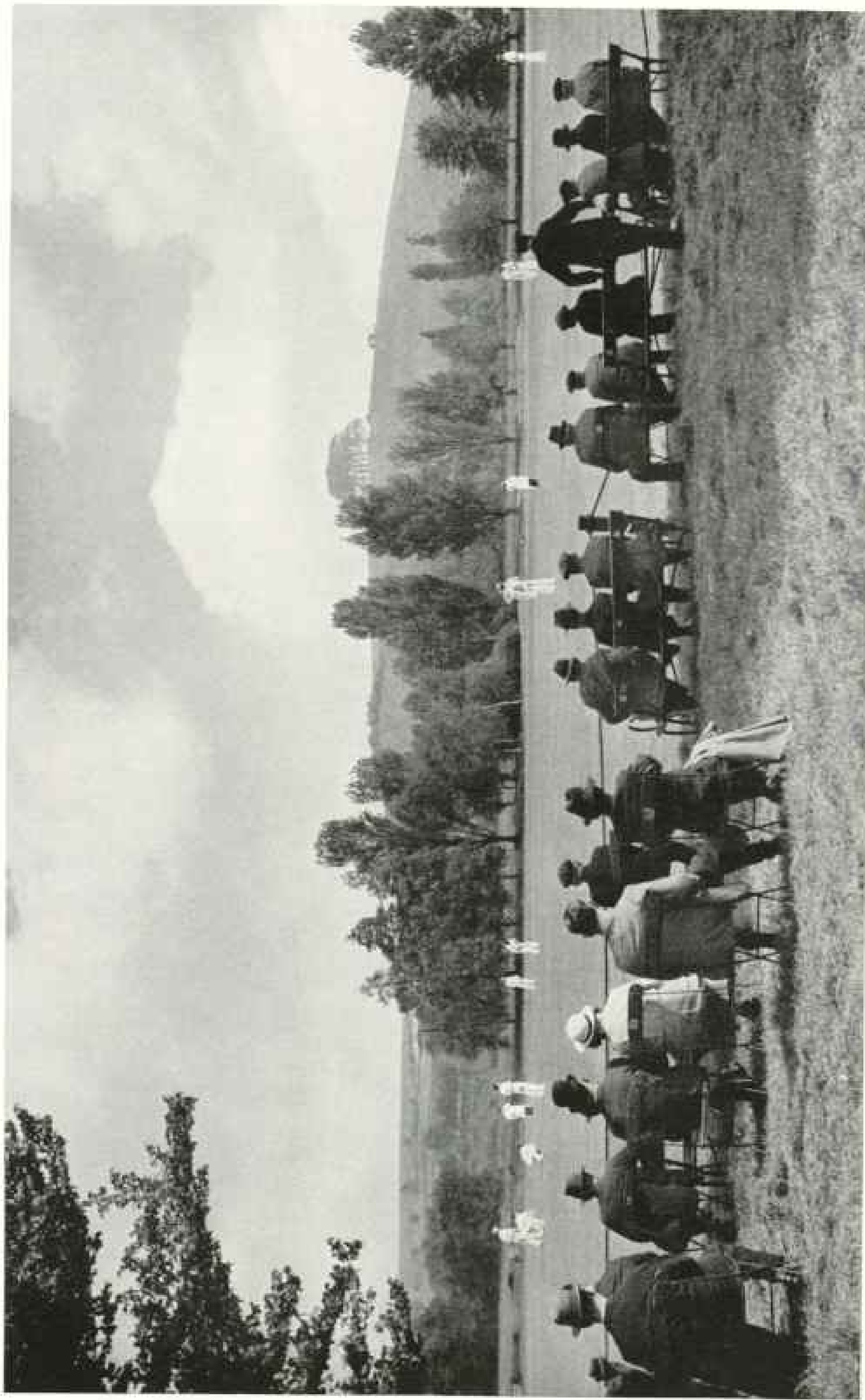
Eight centuries ago, Bishop Henry de Blois set up an order for "13 poor men, feeble and reduced in strength." Later Cardinal Beaufort added another order for 35 impoverished noblemen. Here, in an anniversary celebration on the hospital grounds, today's pensioners walk behind the Bishop of Winchester and his entourage. Some wear black gowns with silver Jerusalem crosses on their breasts in honor of Bishop Henry. Others wear plum-colored gowns with a badge depicting a cardinal's hat and tassels, in honor of Cardinal Beaufort. A few out-pensioners make up the rest of the procession. Nearly every room has a fireplace (page 81).



Photograph by H. W. Hubman and son

Before Guildhall Winchester's Mayor Addresses Its Citizens

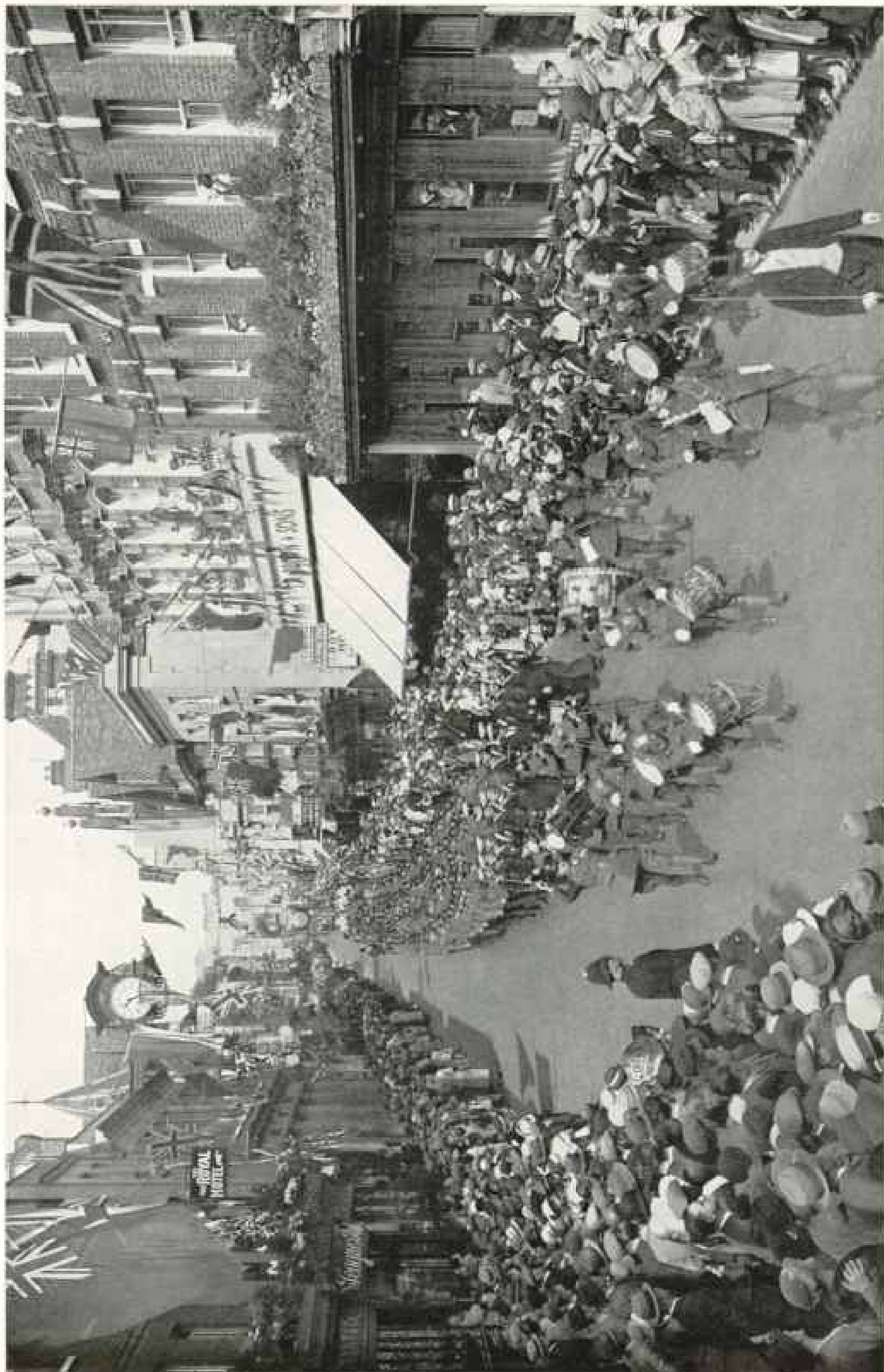
Modern Winchester lives a busy 1941 sort of life, buying and selling, seeing the movies—and dodging bombs. Guilds it still has; but they are less powerful now than when outsiders could not buy yarn for knitting, or when a nonmember of the tanners' guild might go to jail should he buy a raw skin and tan it himself.



Photograph by D. Anthony Prout

Quiet Spectators Watch Winchester College Boys at Cricket

But they don't call students "boys" here; they're all "men." This is one of the oldest of all college athletic fields. Beyond rises St. Catherine's Hill where Roman legions camped; near where American soldiers also camped during the First World War; where soldiers have bivouacked since neolithic times.



Photograph by H. W. Johnson and Son

For a Thousand Years High Street Has Echoed to the Tramp of Marching Men

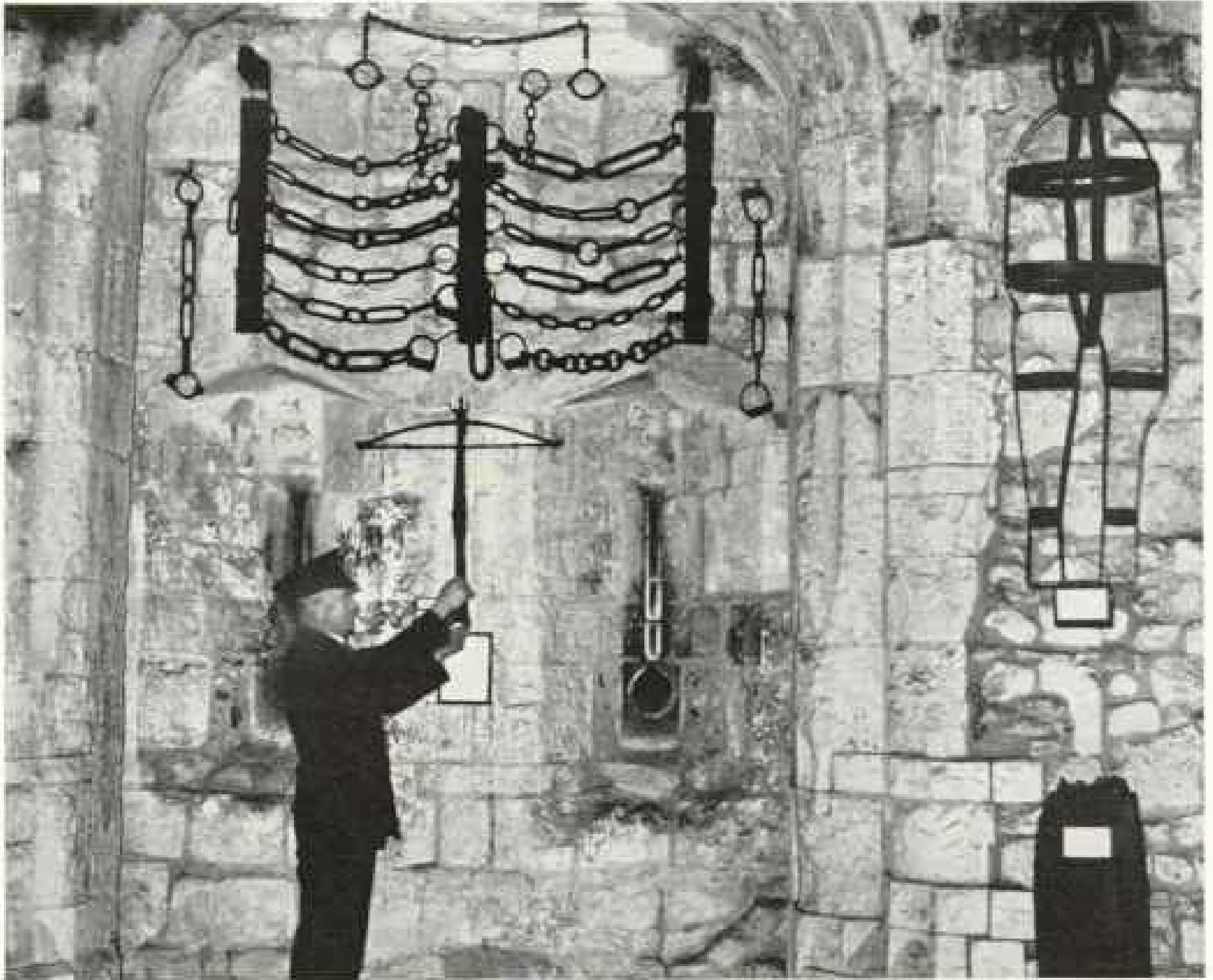
Here Alfred the Great laid the foundations of the British Empire in the 900's. In no small degree the history of Winchester is the history of England. Even before Roman times, Iron Age and Neolithic warriors camped here, and county museums are full of their relics.



Photographs by Marjorie Green, Williams

River Itchen Sweeps Silently by the Ancient Church of St. Cross

Began in 1136 and completed about 1250, this church embodies interesting architectural studies. Much of it has been restored. From far and near artists and architects come to study its lines and to copy the patterns of its ancient floor tiles (page 81).



Photograph by H. Anthony Hewart.

Proof That Man's Inhumanity to Man Is Nothing New

At the right is a gibbet, or iron "cage" in which victims in medieval days were locked and hung up till they died of hunger and thirst. Leg irons, "man traps," and primitive manacles, also crossbows and other weapons, are displayed in this old cell above West Gate (page 71).

can go in and worship with the brothers; reveals many styles of architecture from Norman to early English and Decorative. From all over the world church builders come to see this unusual edifice, where an eagle with a parrot's head sits on the lectern (pages 74, 87). An artist was down on her knees, while we were there, making copies of the symmetrical patterns in ancient floor tiles.

The Plague in Raleigh's Time

Today in Winchester, men may casually read that "plague has broken out in Mukden" or in some other vague, faraway spot.

Yet time was when plague news was no casual matter here. Winchester had it over and over, epidemics worse than the "flu" that decimated our world in 1918.

It was plague in London in 1603 that drove James I to Winchester, where Sir Walter Raleigh was on trial. In such plague years folks were forbidden to let their dogs run loose

about town lest they carry the pest; butchers were punished who threw offal into the streets, and "clean-up campaigns" were ordered.

Cartloads of dead were hauled out to the south of St. Catherine's Hill and buried there in the great plague of 1666. Today visitors go to see the Winchester "Plague Monument." Set in it is a flat stone whereby hangs an odd tale: farmers bringing food feared to enter the town, so they set their hampers on this flat stone which then lay outside West Gate.

Town folk coming to buy food put their purchase money into jars of vinegar that were kept near the flat stone. This was to quiet the frightened farmers, who feared plague germs might be sticking to the coins!

Thus food was sold and bought for cash without either party to the deal ever seeing the other.

Immigrants from Europe mixed to help make the English people; just as later they helped settle America.



Photograph by R. Anthony Stewart

Near the Kitchen of Winchester College Appears This Grotesque Old Picture, "The Trusty Servant"

Latin words beside it say in part: "The porker's snout—not nice in diet shows; the padlock shut—no secrets he'll disclose; patient the ass—his master's wrath to bear; swiftness in errand—the stag's feet declare; loaded his left hand—apt to labour saith; the vest—his neatness; open hand—his faith."

Ruins, ancient objects dug up, and written records reveal how this Itchen Valley about Winchester became a sort of racial laboratory where the English slowly rose from paganism to Christianity.

A Woolworth Store Reveals Relics

On St. Catherine's Hill men show you signs of Stone Age earthworks. After these people came the Belgae, of Teutonic blood; they coined money, traded by sea, and their name for Winchester was "Caer Gwent."

Conquering Romans arrived in the first century; they couldn't resist the lovely green land of forests and streams, so easily reached by boats from the sea. So here they built villas, baths, forts, and roads. They called the town *Venta Belgarum*; and finally this became *Vintancaester*—meaning "fort"; all old English towns whose names end in "chester" were Roman forts or "camps."

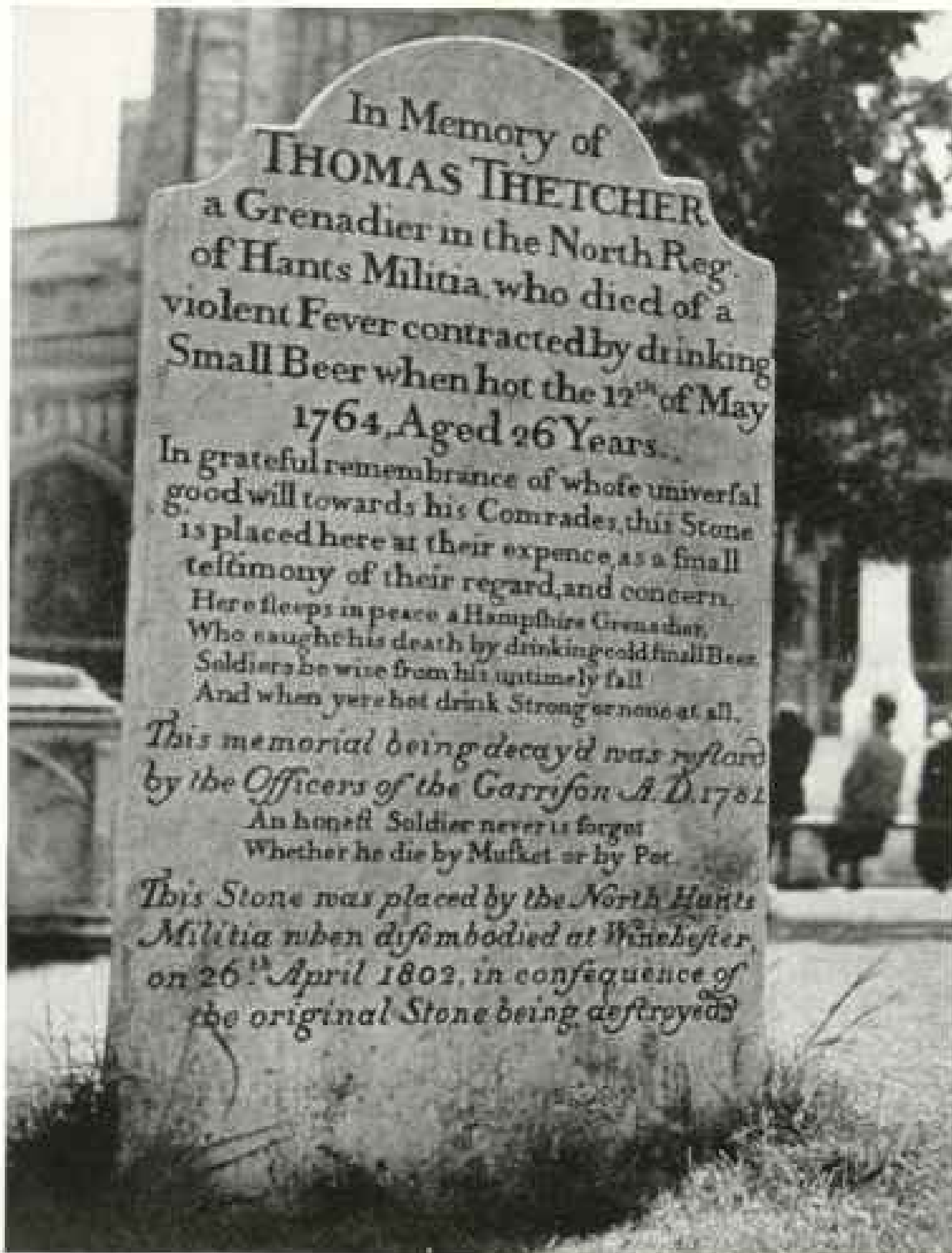
Woolworth's, lately digging foundations for a new chain store, saw its laborers bring up many relics of Roman days.

Says the Hampshire Chronicle: "Excavations at the Southgate Hotel, Winchester, have revealed a large number of ancient relics. More than 40 types of pottery, over 1,000 years old, were discovered, including some choice pieces of Roman and Anglo-Saxon domestic wares.

"Coins were dug up, three of which have special interest, as the Emperors figure prominently in the early history of Britain:

"(1) Hadrian, 117 to 138 A. D.; he visited this country and marched at the head of his legions, sharing in the coarse food and general hardships of the common soldiers; a wall right across northern England was erected by him.

"(2) A bronze coin of Antoninus Pius, 138 to 161, reminds us of a peaceful and happy period of Roman history; he also came to



Photograph by R. Anthony Howard

"Some Die of Drinking Whiskey, Some Die of Drinking Beer,"
Says an Old Army Song

This epitaph near Winchester Cathedral solemnly agrees: "Here sleeps in peace a Hampshire Grenadier, Who caught his death by drinking cold small Beer. Soldiers, be wise from his untimely fall, And when yere hot, drink Strong or none at all."

Britain, and the wall between the Forth and the Clyde is usually ascribed to him.

"(3) A small bronze piece of Carausius; he was at first a skillful naval officer whom the Romans placed in command of their English Channel fleet. In the year 287, having ingratiated himself with both Britons and Romans, he assumed the purple and ruled Britain very efficiently until slain by his minister, Allectus, in 293. (This coin was struck in London, where Carausius set up the first mint.)"

Few relics of pagan worship survive. But Winchester is packed with Christian piles, and the ruins of abbeys and monasteries. Exhorta-

tion against sin and struggles with the devil went on for centuries. Tradition says—and it is only tradition—that monks from Rome were sent here to preach Christ as early as the second century.

But it was Bishop Birinus, landing from Rome in 634, who definitely began converting the West Saxons. St. Augustine's mission was already active in Kent; pagan England was slowly turning from heathenism to Christianity.

Winchester, like Canterbury, played a major role in religious life and instruction in the Reformation, the making of the English Bible, and the rise of the Established Church of England, with its Hymnal and Book of Common Prayer.

More Than a 5-foot Shelf Needed for Books About Winchester

When St. Swithun (Swithin), an early bishop of the first Christian church built here, was canonized as patron saint of Winchester Cathedral, hordes of pilgrims came to worship at his

shrine. Such pilgrimages as this, and that to Canterbury, were the holiday cruises of their time; everybody who could afford one took it, and got in a lot of profane sight-seeing when through with the holy places.

Books enough to start a small library have been written about religious aspects of Winchester; about the Carmelites, Augustinians, Benedictines, Franciscans, Dominicans; about the quarrels between popes and kings, and the adventures of cardinals and bishops in the days when State and Church were one, and when holy men sometimes doffed their clericals, donned armor, and took their places with

fighting men. No one man could live long enough to read it all!

But everyone coming here goes to see the Cathedral (page 75). Begun in 1079 it is one of the largest houses of worship ever built. It is 556 feet in length. It is not structure, however, that is most overwhelming. What halts the thoughtful visitor and strikes him mute is the reflection on what has happened here—and in the grounds about—where Roman pagans once prayed to Mars and Apollo.

Sit alone and think of those first sermons preached in this Cathedral more than 800 years ago! How fervent they must have been! Think of the first choir, before there was any written music here. Then of that early organ, so huge and clumsy that it took 80 men to play it, two of them striking the keys with their fists.

Think of that dark, rainy day when King Philip arrived with his retinue from Spain to wed sad-eyed Mary; there stands her chair, now, in the Cathedral.

Here Cromwell's men came and stabled their horses in this house of God, and Puritans broke open the holy chests and threw the bones of saints through the glass windows.

Izaak Walton and Jane Austen Buried Here

Rivaling the glory of Westminster Abbey is the Cathedral of Winchester, with its numerous tombs of kings, queens, princes, and bishops. Sometimes, in old days, only the dead man's heart was brought. Here is a "cadaver," too, of one bishop. These cadaver effigies, representing half-decomposed corpses, pious men used to set up during their lifetimes as reminders of death.



Photograph by R. Anthony Stewart.

St. Cross Hospital Serves Free Bread and Beer to Wayfarers

Anyone knocking at the porter's hatchway gets this "wayfarer's dole," a surviving example of monastic old-time charity which took care of all travelers. The daily supply provides for about 30 callers (page 81).

Izaak Walton, who lived and fished and wrote his *Compleat Angler* around Winchester, is buried here; so is Jane Austen. So, of course, are Wykeham, Waynesflete, Beaufort, Gardiner, Fox—all famous as bishops of Winchester.

But it is the ancient mortuary chests, unmatched in any other English church, which compel most attention. In them, supposedly, are the bones of such early Saxon and Danish kings as Æthelwulf, Cynegils, Cenulph, Egbert, and Canute. Some of them died more than 1,000 years ago; as the church preserves their bones, so history records their mighty deeds. How much has happened here!

You silently ponder it as you walk slowly

out, past a verger dusting a rug with a modern electric vacuum cleaner.

Across ancient yet vital little Winchester College the shadows of many great Englishmen have fallen; none, dead or alive, ever served his country better than did William of Wykeham, who founded this famous school. "Manners makyth man," was his famous motto. Character, here, is above all.

Founded in 1382, Winchester has set the pattern for English public schools—which are not "public" at all, in our sense. Entrance to Winchester, in fact, is curiously difficult. In peacetime its pupils, one of the most carefully selected groups of students anywhere, number about 460 (pages 81, 85).

Walk through some of the older buildings here, and the atmosphere and surroundings seem more suggestive of a Middle Ages monastery than of a modern school. Over the main entrance is a 14th-century statue of the Virgin and Child; somehow it escaped the iconoclasts of the Reformation. Near by is the original brewhouse where the college brewer made beer for students.

Visitors Greeted in Latin

Remindful, also, of monastery life is the ceremony in Chamber Court when distinguished visitors arrive: here the head prefect greets them with a speech in Latin! No matter how bad the weather, nobody below the rank of prefect may cross Chamber Court with his hat on.

Up worn stone stairs you climb to see Dining Hall, with heavy trestle tables whereon "Wykehamists" have supped for generations. Here square wooden trenchers (flat boards) are still used instead of plates from which to eat bread and cheese.

They show you, in Old Cloister, the gravestone of one student whose epitaph says, "He went to heaven instead of to Oxford."

School, a red brick house, stands west of Old Cloister. Here, before summer vacations, the students and faculty meet for "medal speaking," and to sing the old "Dulce Domum," claimed to be the oldest of all college songs.

Boys from this school who fell in the Great War are honored by a Memorial of singular beauty. Few works of man are so

full of symbolism, so perfectly conceived.

Set in the floor are stones brought from Canada, India, Australia, Africa, and the ruins of Ypres. On the walls are sculptured reliefs; they picture powerfully the old Empire's vast geographic extent and do honor to her allies. Over a niche in the north wall are the arms of the United States of America. Shown also are the arms of Imperial Russia, of Japan, India, Belgium, and the insignia of France.

British trade and cultural relations with the Arabs are shown in Arabia's badge; pack camels, for the ancient Eastern caravan trails; tables of Mosaic Law, and Ankh, symbol of life worn by the King of Mecca.

One of many other striking allegorical carvings is in the Australian corner; graphic sculpture symbolizes the far reaches of English influence; here a field sown with shells signifies the many islands of the Pacific; here are palm trees, a Southern Cross, fern leaves for New Zealand; battleships at sea, with crane and anchors, and symbols for the great naval bases at Singapore and Hong Kong.

Most compelling of all is the magnificent prose poem, in Biblelike language, set in stone letters of Lombardic script, which runs about the Cloister walls some 10 feet above ground. Only a dull mind indeed can read these words without emotion.

One powerful sentence says: "In the day of battle they forgot not God, who created them to do His will, nor their country, the stronghold of freedom, nor their school, the mother of godliness and discipline."

Subdued by that poem, you step softly out.

How significant a place is this tiny school! Like Winchester itself, what a source it has been of English culture and heroism! How much more English is Winchester, in its best sense, than are smoky factory towns, or seaside playgrounds like Brighton.

Thinking thus, you cross College Street for a last walk. Sheep graze with quick, eager nibbles, and shades of ancient trees dance over tombs of forgotten men. Inside the vast Cathedral people are singing a long-familiar hymn—"the solemn voice of old England itself." How deeply in old, old towns like Winchester or St. Albans, from whence all earthly glitter is gone, you still sense the pure flavor of England as it was in the beginning.

INDEX FOR JULY-DECEMBER, 1940, VOLUME READY

Index for Volume LXXVIII (July-December, 1940) of the NATIONAL GEOGRAPHIC MAGAZINE will be mailed upon request to members who bind their copies as works of reference.

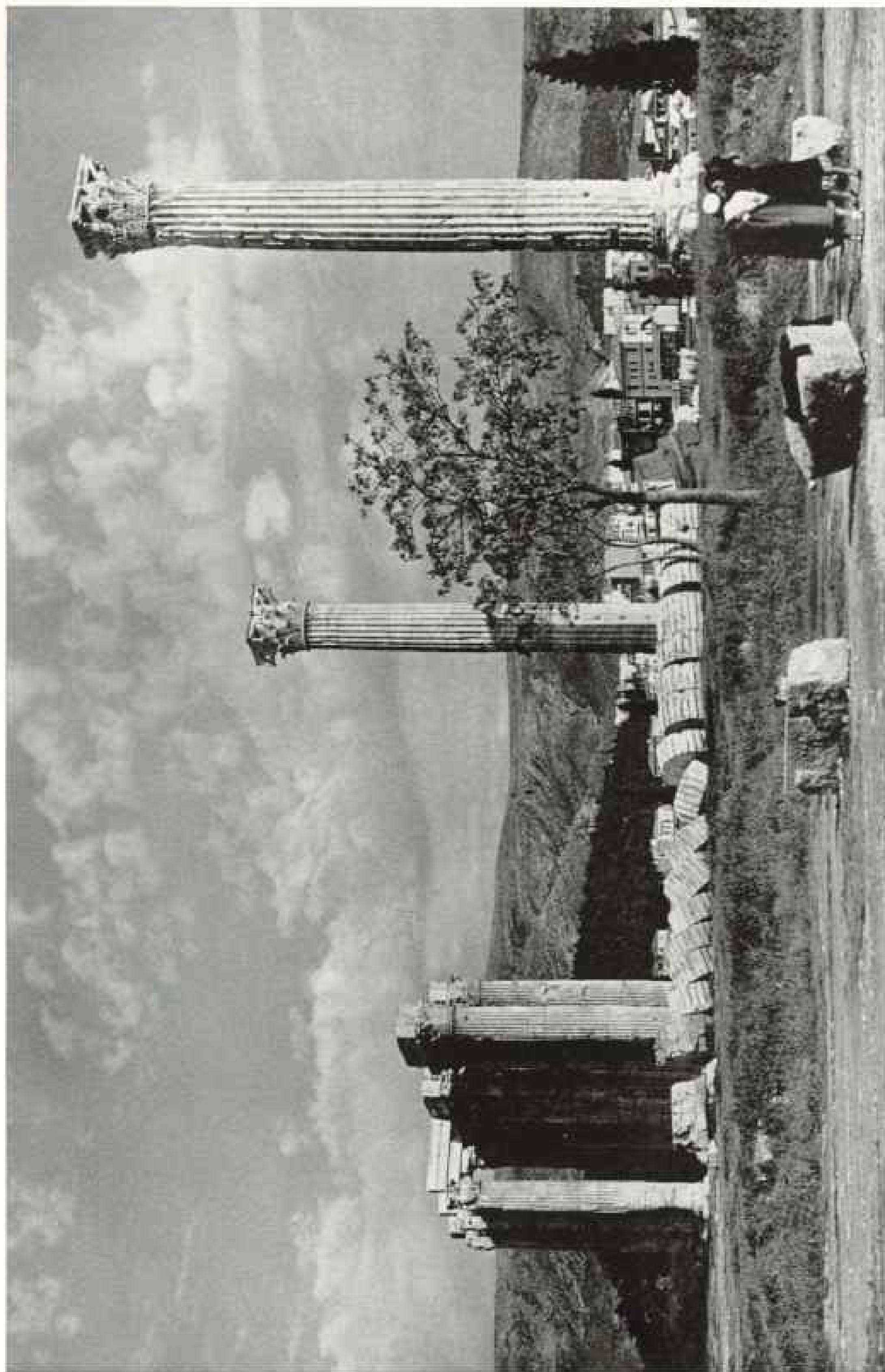
Classic Greece Merges Into 1941 News



Photograph by B. Anthony Hansen

Her Costume Is of Crete, Where British Forces Now Stand Guard

Equidistant from Europe, Asia, and Africa, this big island is the naval and aviation key to the Aegean.



Photograph by B. Anthony Bissonet

Greek Tyrant, Syrian King, and Roman Emperor Took 660 Years to Complete This Largest Temple in Greece

Still standing after 1810 years are 15 of the original 104 columns of the Temple of the Olympian Zeus at Athens. Copies of such Corinthian columns, here outlined against Mount Hymettus, now decorate imposing buildings throughout the world.



The Good Shepherd Tradition Lives in the Green Pastures
Near Métsouva

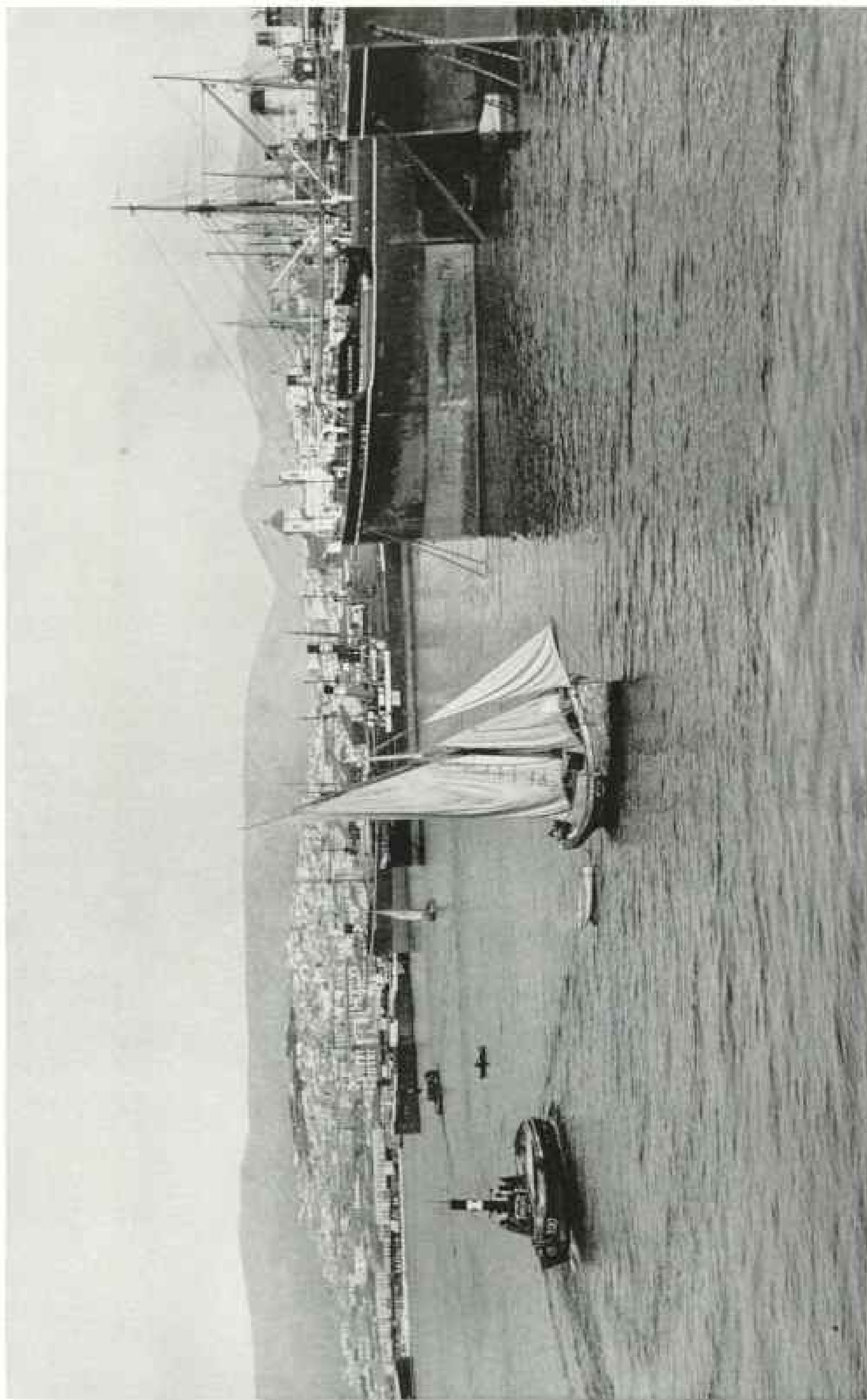
These people in peace times tend their flocks along the new military high-
way across the Pindus, where an Italian column was defeated by Greek
troops in November, 1940.



Photograph by H. Anthony Howard.

A Shoeshine Adds the Urban Touch to the *Fustanelles*,
Mountaineer Dress

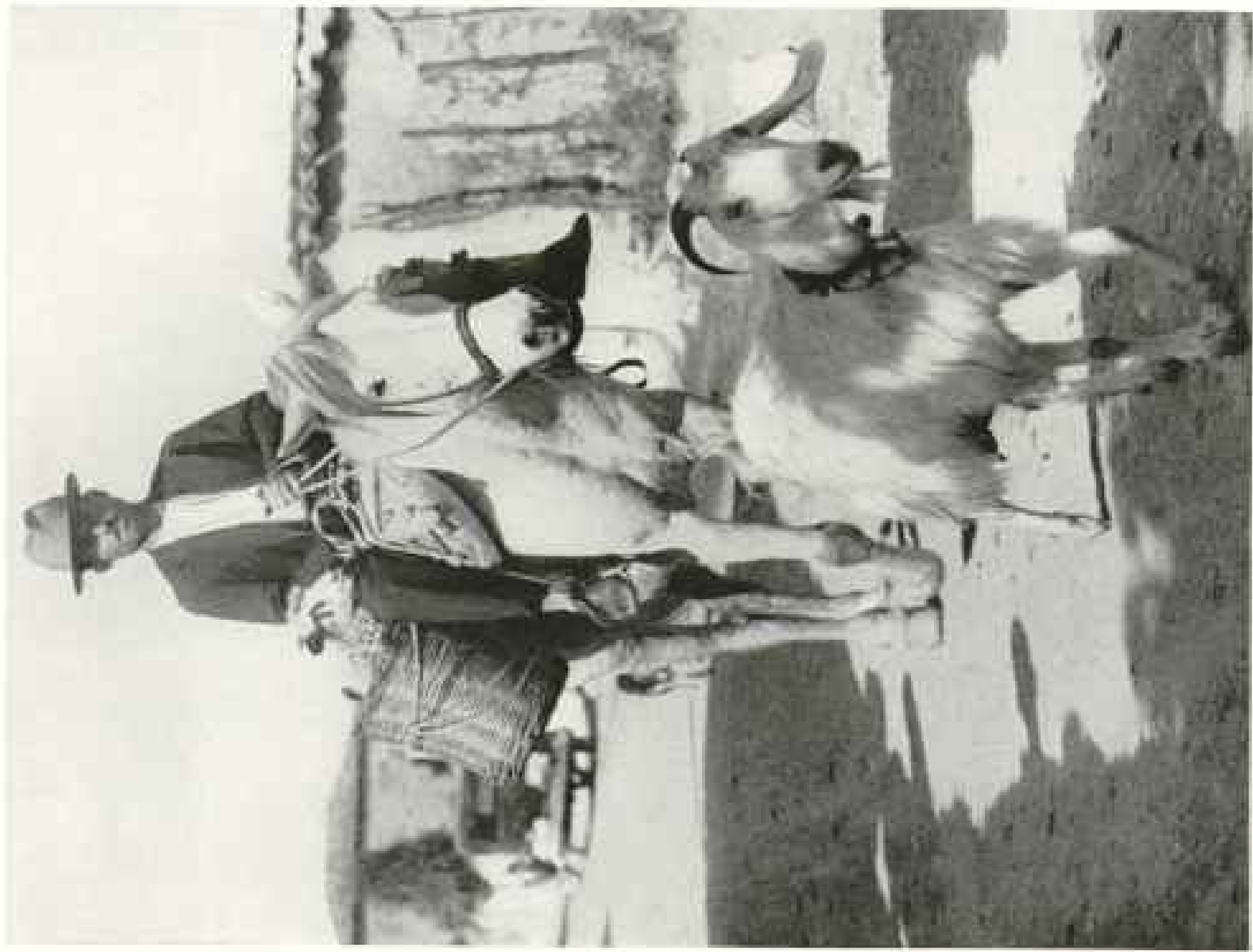
Many Greek defenders in northern Epirus wear these kilts. This man paid
the equivalent of one cent for his shoeshine in the market place of Kalavryta,
on the Peloponnesus Peninsula.



Target for Italian Bombs Is Piraeus, Reborn Port of Athens

Greek maritime life centers in this harbor, improved by Themistocles and once joined to inland Athens by double walls. Four hundred years before Christy democracy (rule by the *demos*, or people) here developed among sailors and stevedores, industrial workers and tradesmen. From 86 B.C., when it was destroyed by the Romans, until 1834 when Athens became the capital of new Greece, this port was neglected.

Photograph by H. Anthony Stewart.

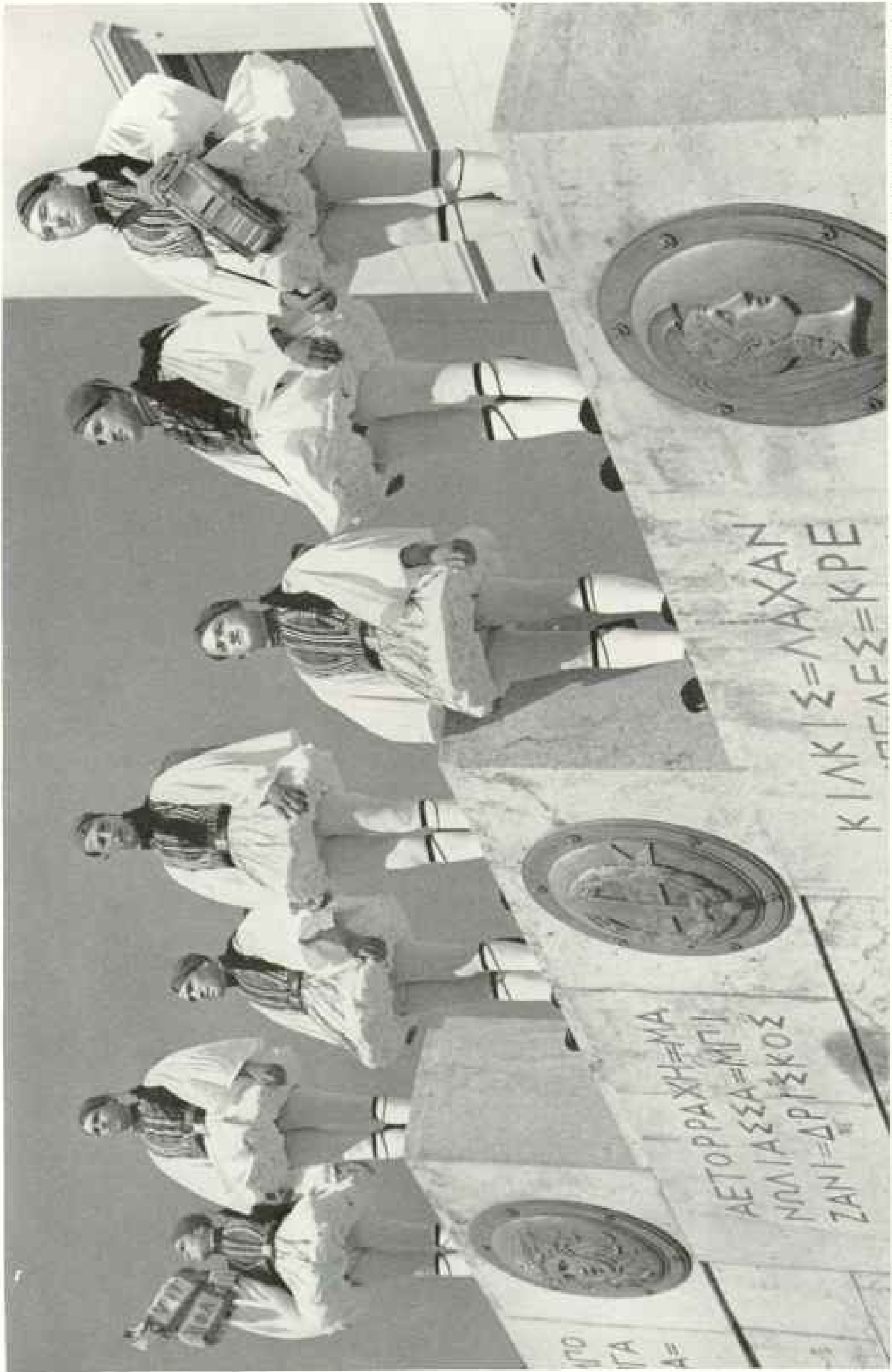


Photographs by D. A. Abbott

"Blessed Are the Meek"—Lamb Rides, Goat Walks



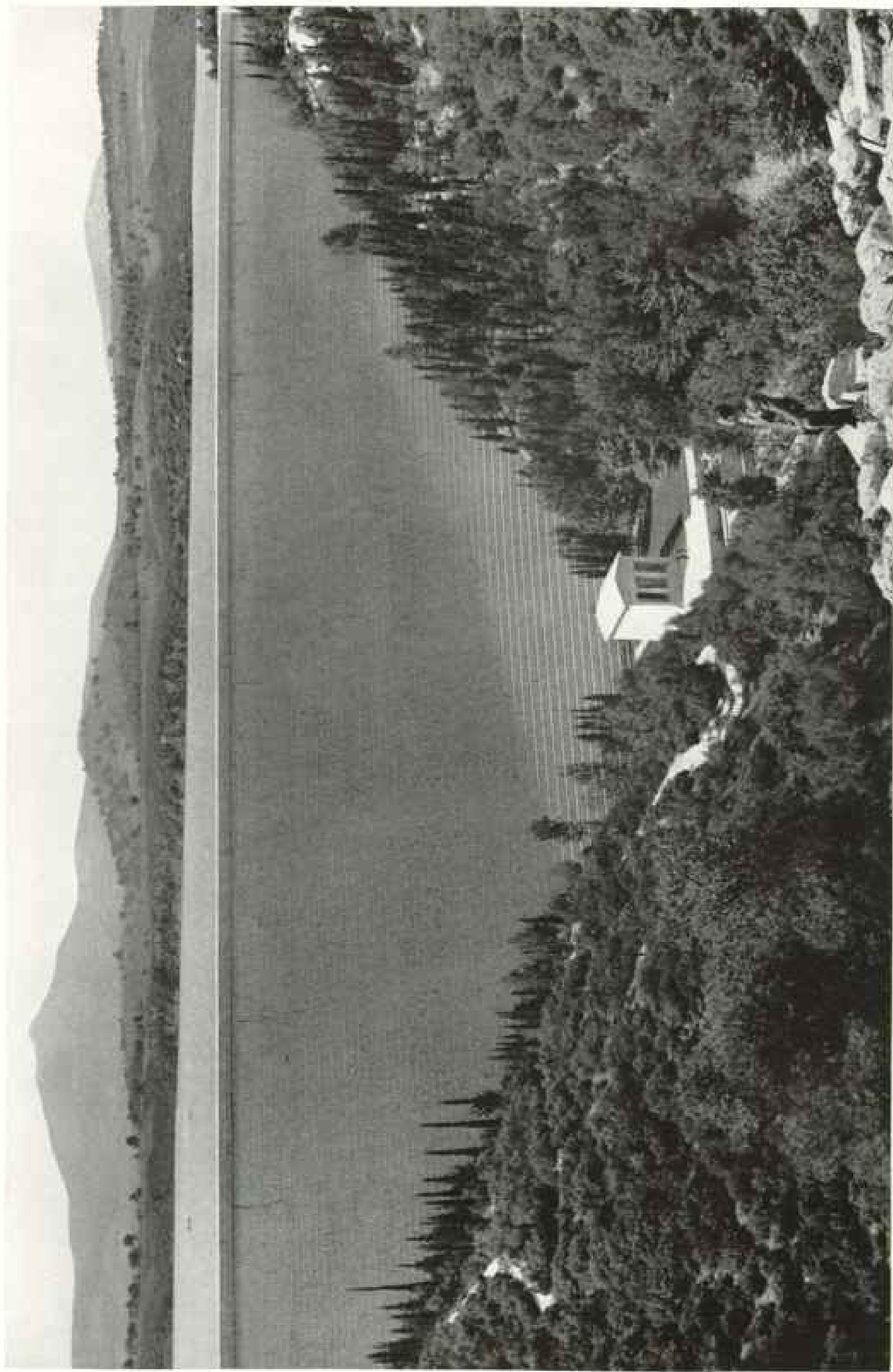
"Piggy-Back"—The Last Mile Made Comfortable



Photograph by H. Anthony-Beyratt.

Above Victory Names of Half-forgotten Wars Stand Hellas' Kilted Royal Guards

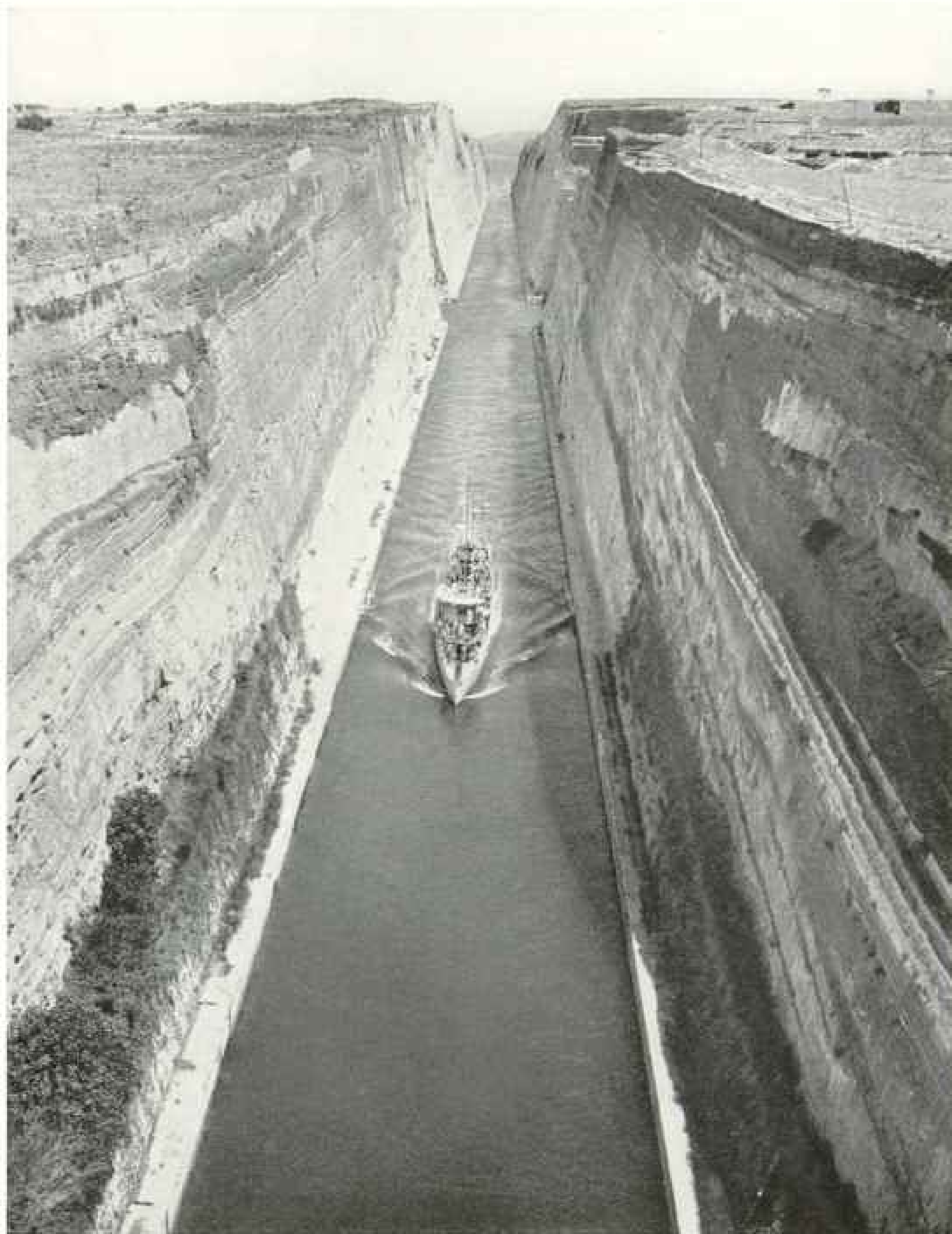
Evzones beside the tomb of the Unknown Soldier in Athens wear the many-pleated *fustanella*, which came from Albania. Carved in the wall are the names of battle sites in the Balkan wars when Greece threw off the Ottoman yoke.



Photograph by H. Jackson Sumner

Not Captured Booty but Water Inspired This Tiny "Treasury" at the Foot of Marathon's Marble-faced Dam

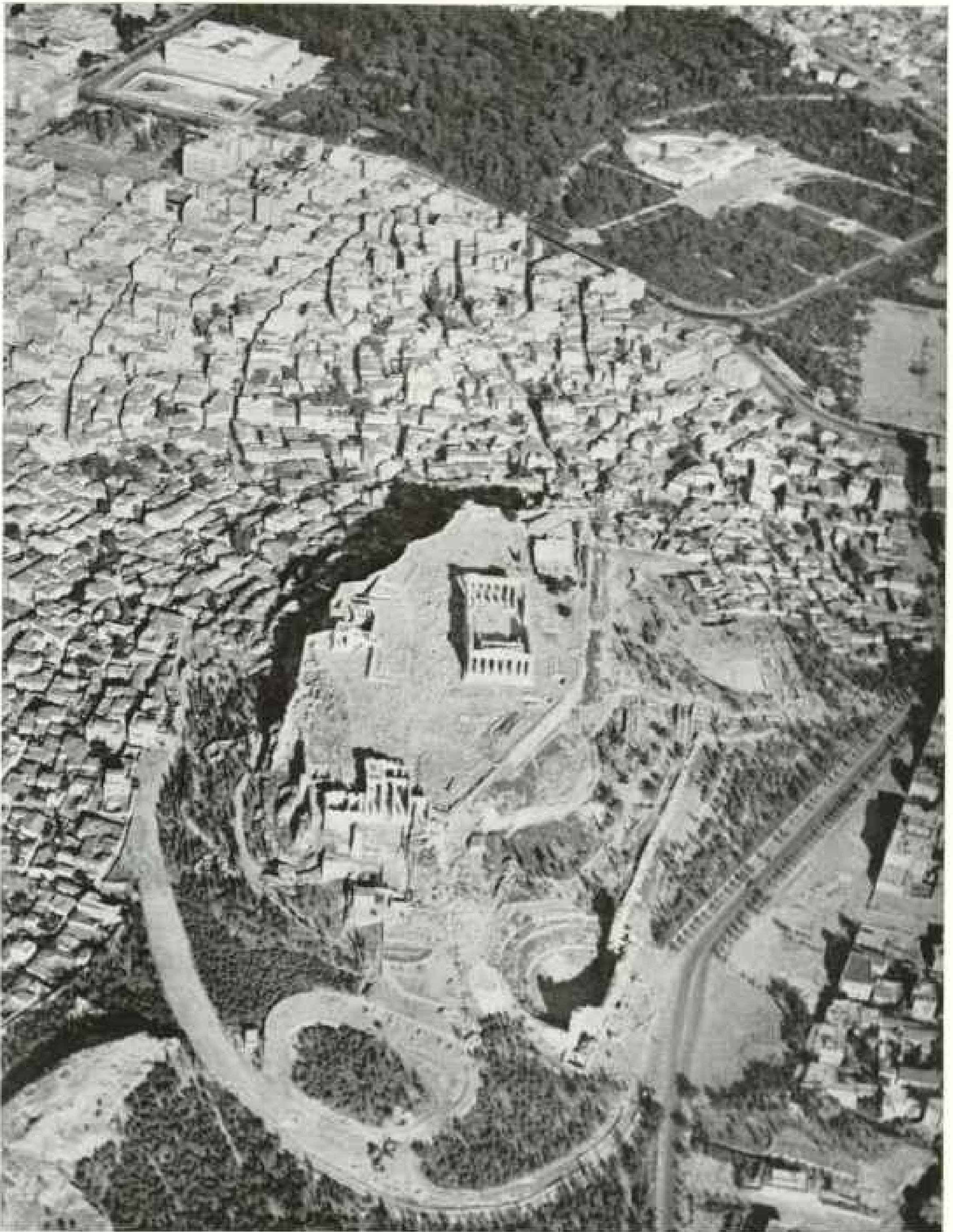
At Delphi the Athenians built a treasury in honor of the Greek victory over the Persians at near-by Marathon. Here modern Athenians have copied the temple in honor of the water that brings grass and flowers to the once-thirsty capital.



Photograph by Margaret Owen Williams

Greek Warship Steams Where Toiling Ancients Dragged Their Craft

This arrow-straight canal, cut through the Isthmus of Corinth, has been bombed recently. Even in peace times it is often blocked by landslides. In 1936 some 20 steamers a day saved 200 miles each by using the short cut from the Gulf of Corinth to the Saronic Gulf. Carrying out a dream of Caesar, Nero, and Hadrian, the four-mile canal is 81 to 98 feet wide at the waterline; its rock walls tower 130 feet above the surface. Twenty-six feet of water make it available for most steamers plying between Piræus and Patras or Istanbul and Marseille.



Photograph by Donald Owen from Menkammer

A Pilot Looks Down on the Acropolis, Crowning Glory of Athens

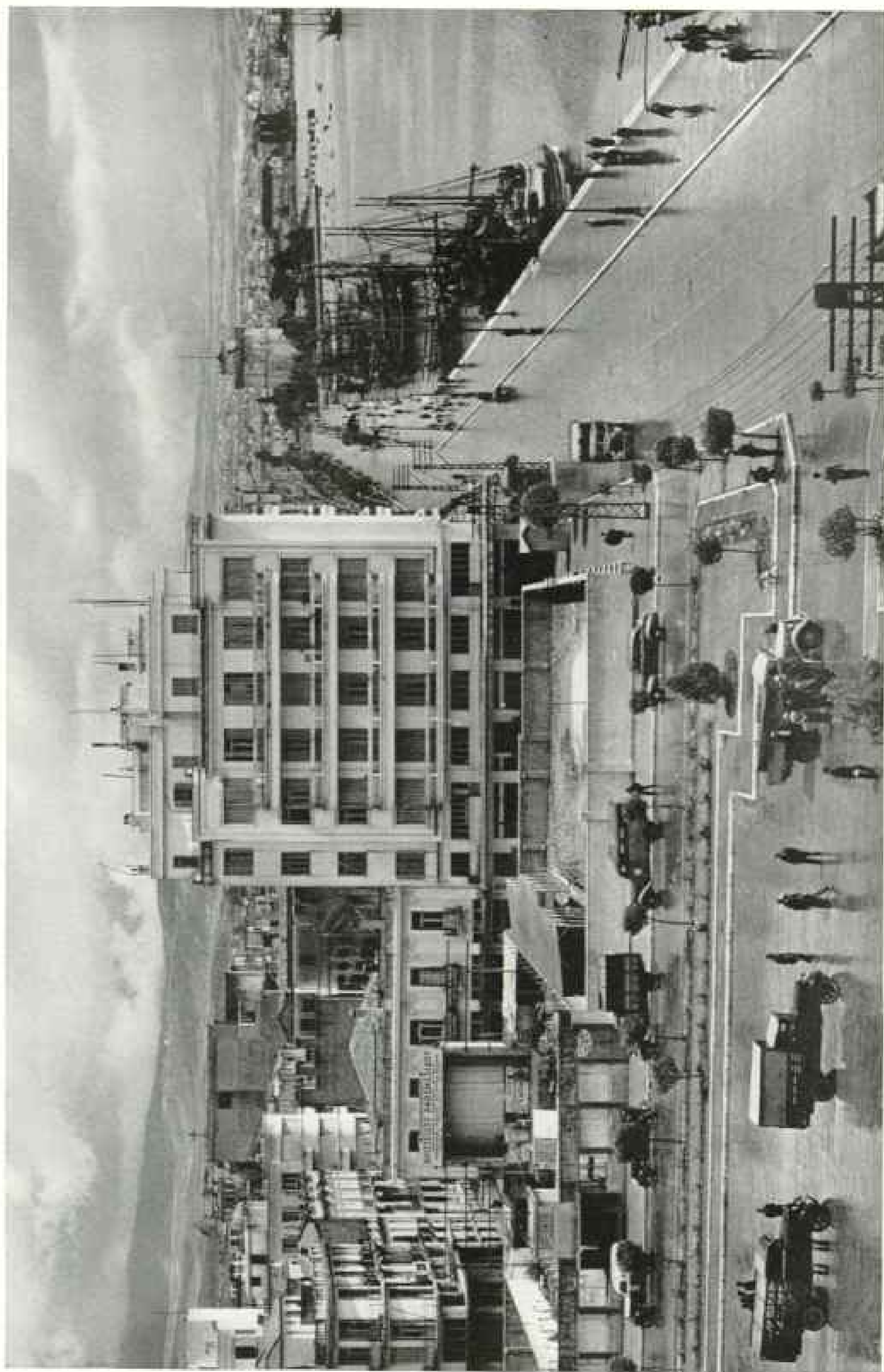
Clockwise around the Parthenon are the Propylaea (gateway, lower center), the Erechtheum, with its Porch of Maidens, and Acropolis Museum. Cut into the rock (right) are stadiumlike Theater of Dionysus, where Aeschylus and Sophocles presented plays, and Odeion Theater erected by the Romans. Below the curving road is the wooded hill where Pericles defamed his golden age before the Athenian assembly. On the barren Arcopagus (lower left) St. Paul preached; before the Old Palace (upper left) is the Unknown Soldier's tomb (page 98).



Photograph by H. Anthony Stewart

Corfu Natives Say That This Cypress-clad Island Is Odysseus' Ship Turned to Stone as Told in Homer's *Odyssey*

Closer at hand is the shining convent of Vlacherni. On the far slopes Austria's Empress Elizabeth, tragic consort of Franz Josef, had her retreat. Kaiser Wilhelm purchased the property in 1907 and there set up his famous work chair, shaped like a cavalry saddle.



Photograph by H. Anthony Stewart

Base for Allied Victory in 1918, Salonika (Thessalonikē) Is Now Scarred by Bombs

Part the Mediterranean Palace Hotel the busy waterfront boulevard leads to the White Tower which stood at one corner of the city walls. Behind the camera is the Pier Zone through which Balkan nations have access to the Aegean without Greek customs inspection or tariffs.

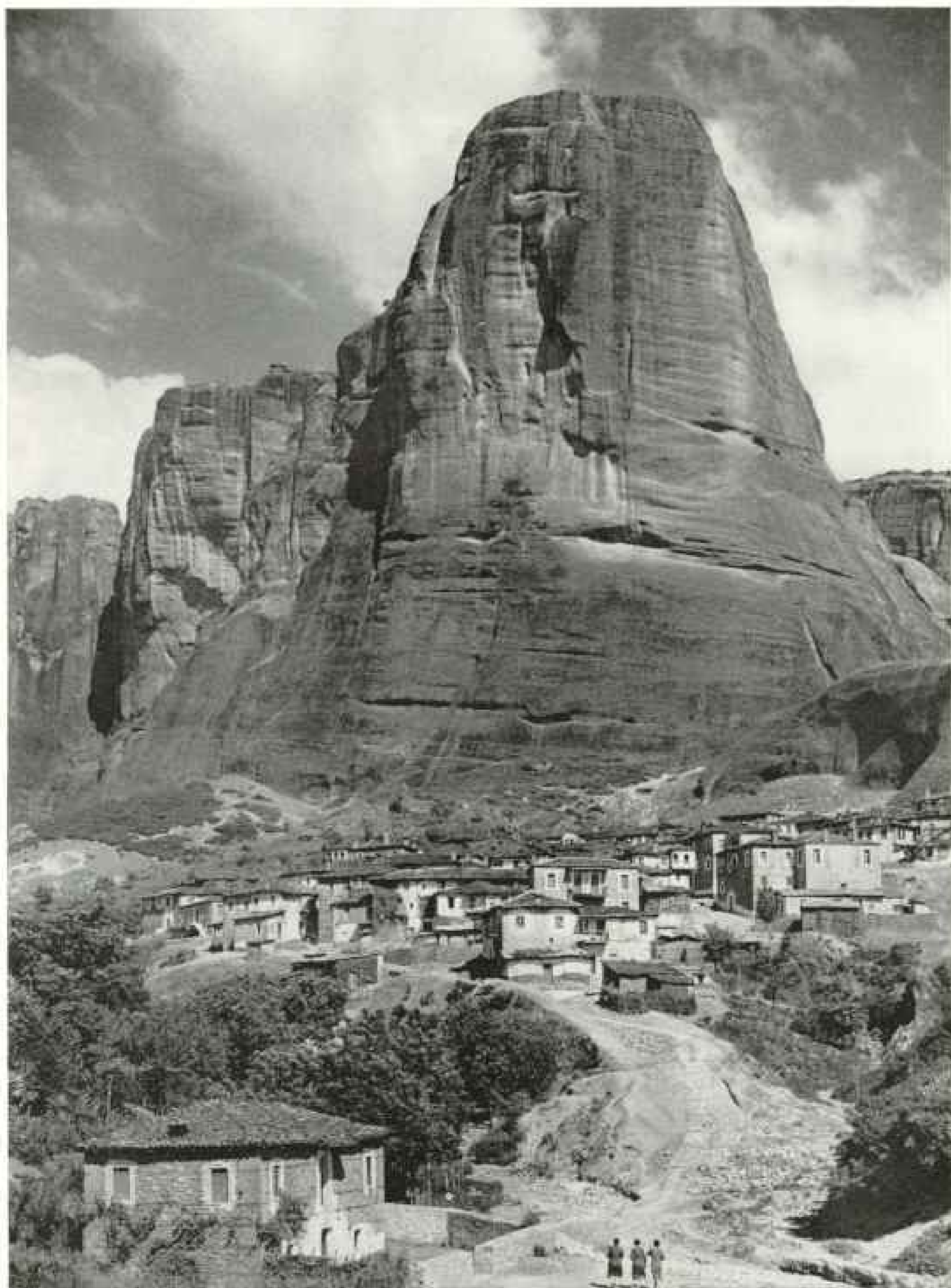


Wet Umbrellas Greet a *Geographic* Photographer of "Sunny Greece" Near Kalávryta



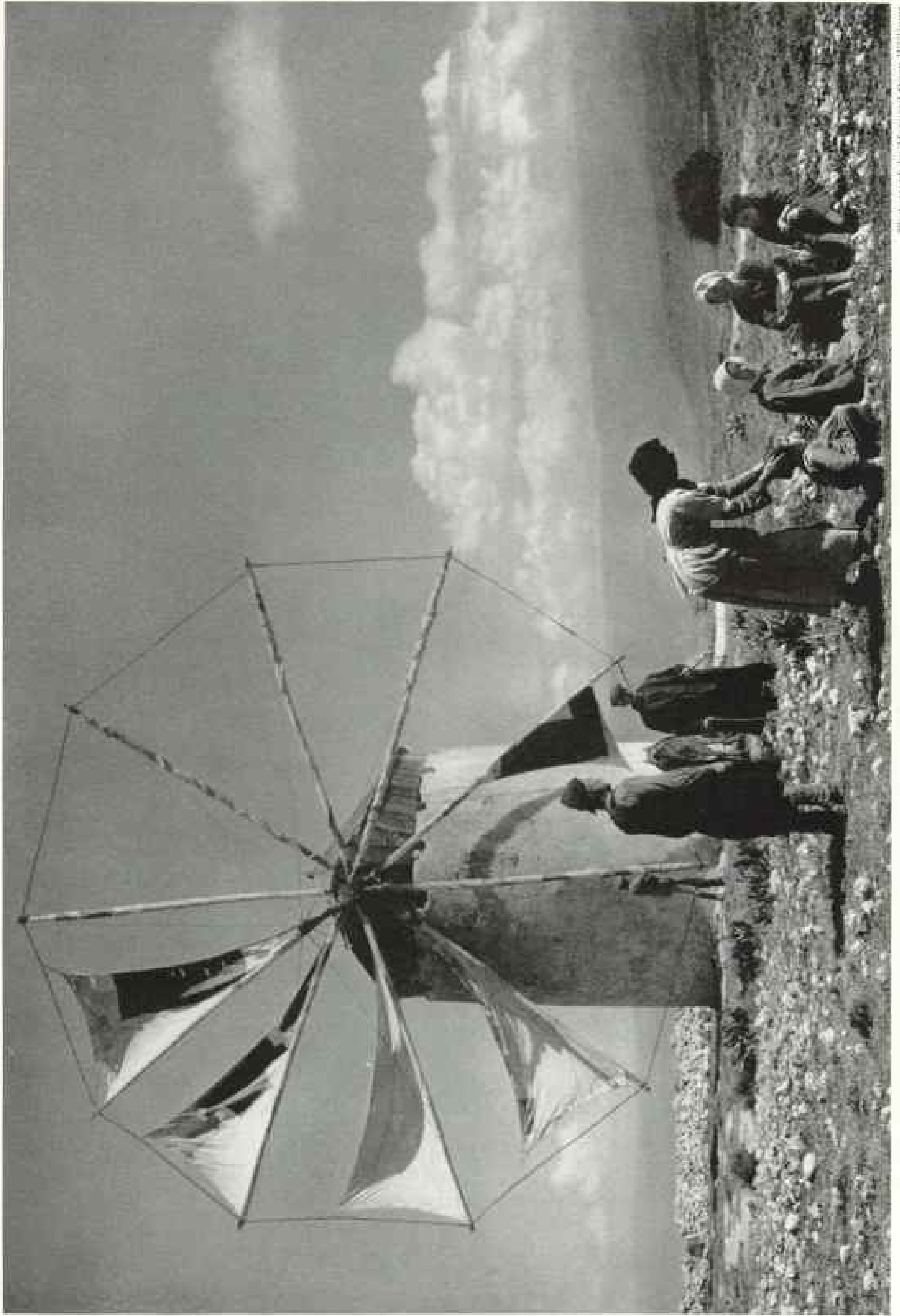
Photographs by R. Anthony Howard

"Cigars, Cigarettes, Postage Stamps, and Hurrah for Our Country" Say These Signs at Pýrgos
As elsewhere in Europe, tobacco shops must sell postage and revenue stamps.



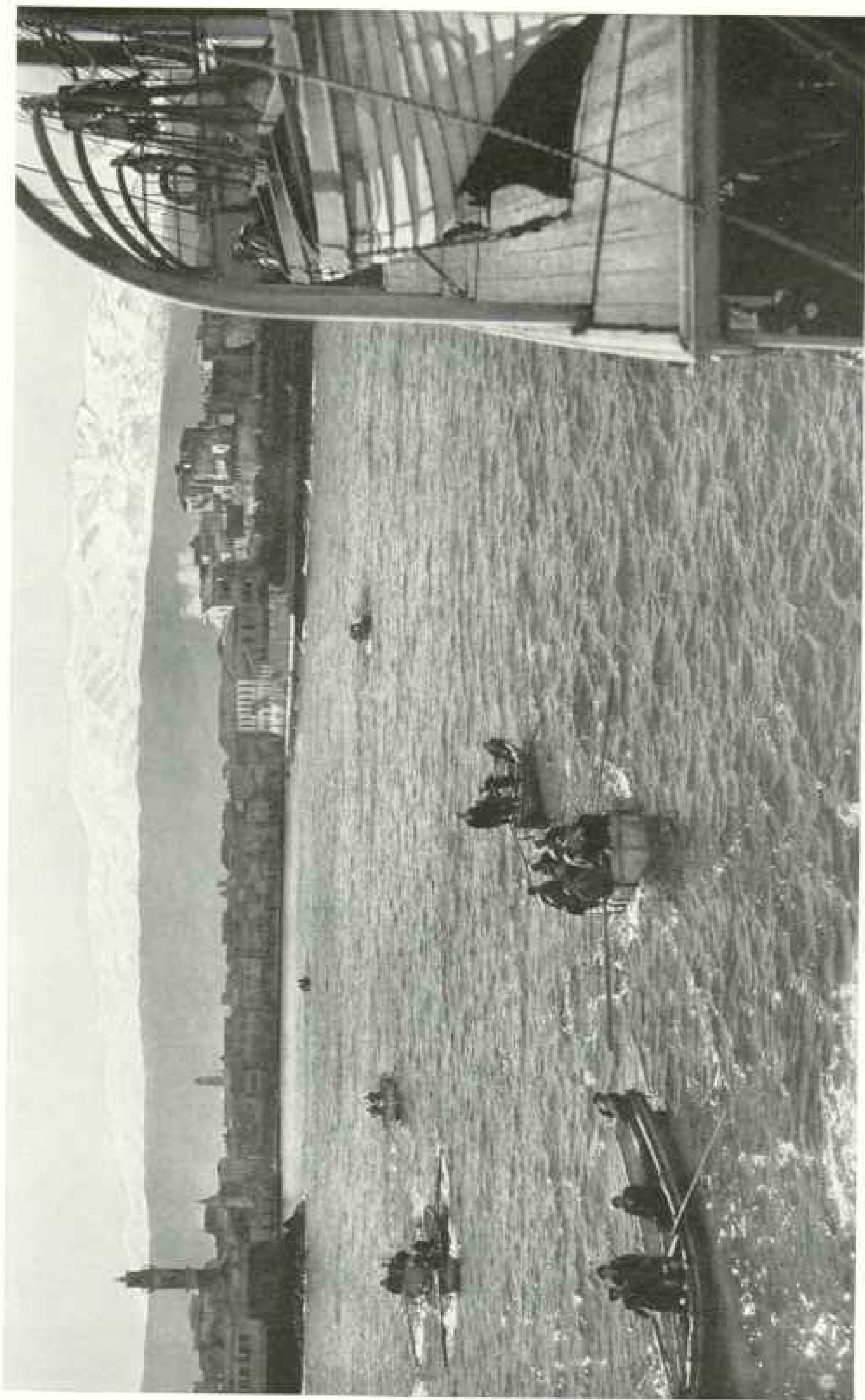
Photograph by R. Anthony Stewart

Kastraki's Tall Gray Cliffs Mark the Junction Point of Railway and Military Road
From here Greek fighters advanced along the new highway to hurl back Italian invaders in the Pindus Mountains. Perched on such rocks are the almost abandoned monasteries of Meteora.



Photograph by Majumdar Owen Williams

Warplanes Now Fly Where Rustic Windmills Comb the Cretan Sky



Photograph by Meredith Street Williams

Within 800-year-old Venetian Walls, Canea, Capital of Crete, Listens to the Friendly Roar of British Planes

Across a narrow isthmus to the left lies Suda Bay, seaplane port and naval base, which commands the sea lanes between Europe, Asia, and Africa. Covering an area of 8½ square miles, the harbor is safe in all weathers.



Photograph by R. Anthony Stewart

At Stormy Sunion Where Mariners Raised This Temple to the Sea God, Four Maids of Athens Form a Frieze

Breezes sweeping this much-fetted cape blow the hand-woven fabrics in folds suggestive of classic Greek sculpture. Wind erosion so cleans the white-marble columns that they borrow a bluish tinge from blue sky and bluer sea.

Turning Back Time in the South Seas

By THOR HEYERDAHL

With Illustrations from Photographs by the Author

WE WANTED to go back to nature. Though the cold of the northern winter had settled on Oslo, already we felt the heat of the Tropics as we made our plans, poring over maps of the southern seas speckled with tiny dots of islands.

For the thousandth time I put my finger on one small yellow dot in the vast Pacific.

"Fatu-Hiva," I said to Liv, my fiancée. "That's the place for us."

Once again we were deep in argument. Why couldn't we carry out the plan we had in mind? Surely, we reasoned, there is room enough in this modern world to escape civilization. We had gone over the possible places—Greenland, the Sahara, the jungles of Brazil.

Each had been considered and each in turn dismissed, for to these places one must carry something of civilization to keep life going.

"I'll go with you," Liv had said, "if we can do the thing thoroughly—go right back to nature; not take any bit of civilization with us; renounce both its benefits and its evils."

With all the courage of her 20 years she was prepared to face whatever the future might hold for us in whatever unknown paradise we selected.

I agreed with her. If we were to do this thing, we should do it right.

"We'll go back thousands of years and start where our primeval ancestors left off," I said, enthusiastically. "With our bare hands we will make our living and be one with nature."

"Then," I mused, "we can tell whether or not this modern world is as much of a blessing as men think."

Prescription for "Escape"

Knowledge gained during my years of geographical study was brought into use as we considered the different countries of the world, and one by one eliminated them as useless for our purpose.

We needed a depopulated piece of land, fertile and rich in fruit and other forms of food. But nature was niggardly where man had avoided settling; and where nature was generous, men were plentiful.

This was so even in the South Sea. Island after island was eliminated. This one had a car road all around; that one was a center for tourist business; here was one without water; there, one without fruit.

Many were only copra plantations. More were densely populated with natives. There were thousands of islands and reefs, but none like Fatu-Hiva (map, page 112).

This little island, described by botanists as one of the most fertile in the South Sea, and beloved for its beauty by the comparatively few travelers who had seen it from within, had another advantage for us. Here was space enough.

Ninety-eight per cent of the natives had gone from the island forever. The jungle had crept down from the mountains and reoccupied the deserted gardens, covering the ruins and man-made habitations.

Yes, here was space enough for us two, and food enough, where once thousands of natives had struggled to survive.

In an overgrown, forgotten garden in some lonely valley, we could, perhaps, build ourselves a home of branch and leaf, live on fruit and fish, and stroll through the lush tropical foliage among birds and semiwild game, at one with nature.

We chose Fatu-Hiva.

And so we were married and set out on our honeymoon.

Bound for an Island Eden

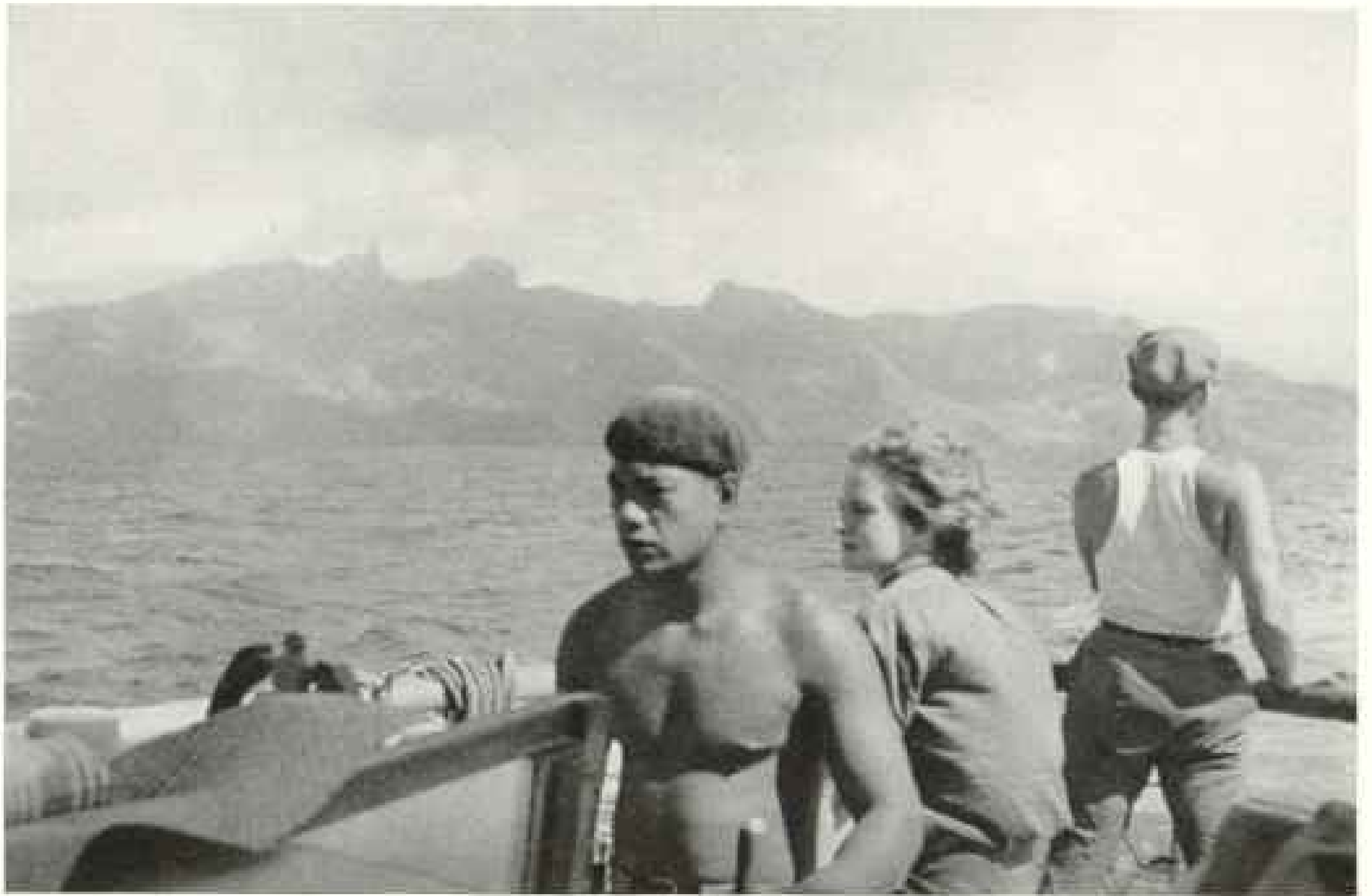
Six weeks later the tropic sun beamed in reality on our helmets as we stood on the beach of Tahiti, watching the big French steamer that had brought us disappear into the horizon. We had made our first step toward our goal.

For a month we waited in Tahiti for the little schooner that was to take us to our far-off island in the Marquesas. Meanwhile, we went far from Papeete, the capital, to the Papénoo valley home of Teriieroo i Teriieroo-terai, chief of all the chiefs of Tahiti (p. 117).

A full-blooded native of proud demeanor was Teriieroo, conscious of the past culture of the islands and bitter at the shadows cast over them with the arrival of the white man.

This charming, stout-bodied man, with his keen mind and sense of humor, was intensely interested in our undertaking. He made his home ours, for our stay. Under his friendly eye we learned much that was to be of value to us in the life ahead.

Madame Teriieroo, hopping about a pile of hot stones that served as an oven, familiarized Liv with the secrets of Polynesian cookery.



Across the Waves, Liv Catches a Glimpse of Her New Island Home

Seated between two husky Polynesian sailors, the author's wife scans the shoreline as the schooner nears Fatu-Hiva. This island once had a population of thousands, but today only a handful live there.

The chief and I, leaving our wives discussing rare dishes as they bent over concoctions in leaves and coconut shells, went off to the woods. I had to be taught what was fit to eat and what must be left untouched, and especially I had to learn the art of climbing a palm trunk.

Mr. and Mrs. Blue Sky

One day the chief invited us to a big feast, for he had decided to adopt us as his Polynesian children. During the ceremony our Norwegian names of Liv and Thor were taken from us forever among the natives.

"We can't pronounce them," said Teriieroo. "You need a simpler name. We call you Teraimateata Tane and Wahine—Mr. and Mrs. Blue Sky."

Thus we left Tahiti as true children of the island world.

Our little native trading schooner beat its way across the sunny seas toward the Equator with every available inch of deck space piled high with cargo that included fruit, pigs, chickens, natives . . . and Liv and me.

The air jangled with the happy jabber of native men and women returning to their small islands from a trip to metropolitan Tahiti. Mingled with the native chatter were

the shrill cries of pigs and babies and the soft music of the ukulele.

The bow cut the water. The moon laid a silvery path across a world of sea by night, and the tropic sun rose and set in a riot of color.

Thus three weeks passed.

There was no land, only twinkling shoals of flying fish, jumping tuna, and whales. The schooner, moving through the dashing waves, seemed to stay in the center of a blue and eternal sea.

At last, among the waving palms and sunny beaches of the coral atolls of the Tuamotu Islands, our native friends disembarked (pages 111, 118). But we were bound for the mountain islands of our dreams, where the schooner was bringing sugar and pants, matches and corrugated iron in trade for native copra.

One day Ua-Pu, our first Marquesan island, emerged from the ocean. Miles away, high and furiously torn, it looked like the shadow of a castle against the sky. As we approached, it slid forward to take color and dimension. Numerous valleys appeared in the reddish rocks, emptying their green floods of waving palms into the sea.

Ua-Pu, Nuku-Hiva, Hiva-Oa, Tahuata—we visited them all and marveled at their beauty,



Bound for Fatu-Hiva, the Trading Schooner Puts In at a Marquesan Island

The author and his wife, young Norwegian couple on their honeymoon, boarded the small vessel at Tahiti. They lived for a year in their island paradise with only a few Polynesians for neighbors. The only contact between the islands is maintained by the trading boat, which calls occasionally.



Setting for a South Sea Honeymoon

The author and his bride selected remote Fatu-Hiva, southernmost of the Marquesas Islands, for their jungle adventure. This fertile isle, with a romantic and tragic history, lies 850 miles northeast of Tahiti, in the Society Islands. The Marquesas are part of French Oceania, administered by a governor whose headquarters are in Tahiti. The islands lie 4,350 miles southwest of the Panama Canal.

so unreal to us. As one sank into the sea, the next arose out of the blue stretches of water. Eventually they all lay behind us, and we were headed for Fatu-Hiva, southernmost island of the group (page 110).

Isle's Fragrance Wafted Far to Sea

Even before we could see its land, we caught the warm and living scent of earth and growing things wafted to us over the salt seas.

And when we sailed into the shadow of the island, where the blue ocean turned to green like the jungle creeping downward from the hills, we knew we had chosen a land of unsurpassed beauty.

A warm, sweet air like that from a greenhouse assailed us, and we felt a sudden desire for the shore that we might penetrate into the mysterious forest, be engulfed in the green wilderness, and start a new life in its depths.

Slowly the schooner crept along the steep coast, where deep valleys passed in review,

opening their rocky gates to disclose their lush beauty. Red rocks shut out the sight of waving palms, a sunny beach, and the white foam of breakers until the steep mountain wall opened on the next valley.

Where to land? This was our present problem. Luckily a young native lad on board had been born in Fatu-Hiva. He alone knew the place from within, for even our captain had never been there.

As the valleys succeeded one another, he described where the natives lived, where drinking water was to be found. And finally, under his guidance, we were in the lifeboat, our hearts hammering with excitement, while natives rowed us toward the island. The roaring breakers rose and burst into snow-white foam before they reached the shore.

Riding in a furious race on the tumbling crest of the green wall of water, we were thrown amid dancing foam far up on the soft black lava sand. Overhead the trade wind ruffled the fringed leaves of coconut palms. Green hills rose around us. The air was heavy with a haunting, tropical scent.

The natives climbed back into the boat and rowed toward the schooner (page 115). Soon the white sails of the *Tercera* melted into the horizon.

We stood alone with our trunks that contained the clothing we had worn during the voyage, and with nothing else save the materials I had brought for scientific research on this little-explored island. A strange feeling of loneliness assailed us.

What to do next?

No White Men, No Radio Here

There were no white people on the island, no radio or other communication with the outside world, save for the uncertain arrival of the schooner that made its unscheduled visits months apart to pick up copra.

We didn't know a word of the native language except *kaoha*, which means "good day," and *panhakanohau*, which means "very good." But we could laugh, and that is the main thing in a Polynesian conversation—and overhead the giant nuts told us that whatever happened we wouldn't starve.

With a mutual impulse we turned to our trunks and began to drag them toward the shade of the trees.

We had been landed at Omoa, largest of the island's valleys. Once thousands of natives lived here, building their homes even on the steep mountain sides. Three kings ruled over the island then, and their people were continually at war with one another, save when they united to fight a common foe.



Cooling Breezes Sweep a Hillside Path in a Tropic Eden

Surf booms, palms wave, as the author's wife rests her pony on the climb from valley to mountain. Tioti, who became a warm friend of the Norwegian visitors, holds the pony's bridle.



He Aims His Three-barbed Spear at a School of Multicolored Fish

Islanders are adept at hurling the "harpoon" from dugouts. The waters around Fatu-Hiva are a vast aquarium. Fishing with a line, the author never knew what he might hook—shark, deep-sea eel, or strange fish with parrotlike beak or needle-covered body (page 121). Lobsters abounded in holes and caves.



Fruit for the Picking—Red Mountain Bananas

Leaving the Omoa settlement far behind, Thor and Liv tramped up the valley, selecting a site on a hillside. Here they worked all day, clearing space enough for their little tent. As the shadows lengthened, they stopped work and roasted the ripe, luscious fruit in the campfire for their first jungle supper (page 118). When their task was done, they had a fine view of the valley.

Those who had lived at the valley's mouth depended for their food mainly upon the sea and never ventured inland except when on the warpath. The people of the inner valley had subsisted on fruit and roots and avoided the sea, except when they stole across the steep mountain walls under cover of dark. And the central dwellers could venture neither to sea nor to the interior.

Now ruins, covered with ferns and creepers and sometimes broken by tropical trees, met our gaze, and everywhere were the remains of overgrown gardens (page 129). Wherever we turned, our eyes saw fruit. But monarch of all was the jungle, advancing down-

ward from the mountains toward the sea.

As we looked up the valley we saw that the once overpopulated spot was completely deserted. Only on the beach, some distance from where we stood, was there any sign of human habitation. Here was a native village. This, and another in the valley of Hanavave, made up the island's present total population of fewer than 300 natives.

As we stood, uncertain what to do next, we suddenly realized we were no longer alone. The parting whistle of the little schooner had stirred up the natives. Now a small group was gathered at a respectable distance, clad in European clothes and gazing at us wide-eyed.

Surprised and startled faces were turned to us, but they were also friendly faces. An old woman with a blue tattoo mark round her lips finally broke the spell. Advancing cautiously, she lifted a dirty finger and rubbed it against Liv's cheek to see if the color would come off.

The others gathered closer. White women were rarities here, and Liv held their undivided attention.

Pestilence in Paradise

A half-breed next brought himself to our notice. He spoke French and invited us to spend the night in his shack. I had already written in Norwegian a list of the most important words needed on a South Sea island, and now through the medium of French I found the Polynesian terms for them.

That night, so far as I know, the first Marquesan-Norwegian dictionary came into existence. We had gained the key that would open

to us the speech of the island.

We slept little that night. The very friendliness of the natives terrified us, for our first sight of them had shown us that they had in their midst elephantiasis, tuberculosis, leprosy, and venereal diseases. We realized we must settle as far from them as possible, for there were no hospitals here, nor medicine.

Early next morning, before the sun was high and while the air was still cool, we started up the valley.

We soon passed the last cottages of the village, and dogs and natives swarmed around us. They waved, shouted "Kaoha," and chattered unintelligibly.

"Good day," we answered. "Very nice, very nice. Good day." And then we laughed together and were friends.

They were very happy despite their diseases, though some of them could hardly walk, their legs being thicker than their bodies.

The elephantiasis from which they suffered had come to the island, so the natives charge, when the white man brought the mosquito ashore. The parasitic worm which causes the disease is transmitted in the larval stage by the bite of the female mosquito.

Today, Fatu-Hiva, like most of the islands in the group, is forbidden land to white men. A French law gives visiting yachts only a 24-hour stopover privilege. We had already obtained special permission from the French Government to remain ashore, but we had been forbidden firearms.

We left our new friends and walked slowly along the old, overgrown "royal path" toward the interior, while small birds gave a lively concert around us. Above the village the dirty river grew clear and the forest gradually



The Polynesian Crew Says Goodbye at Fatu-Hiva

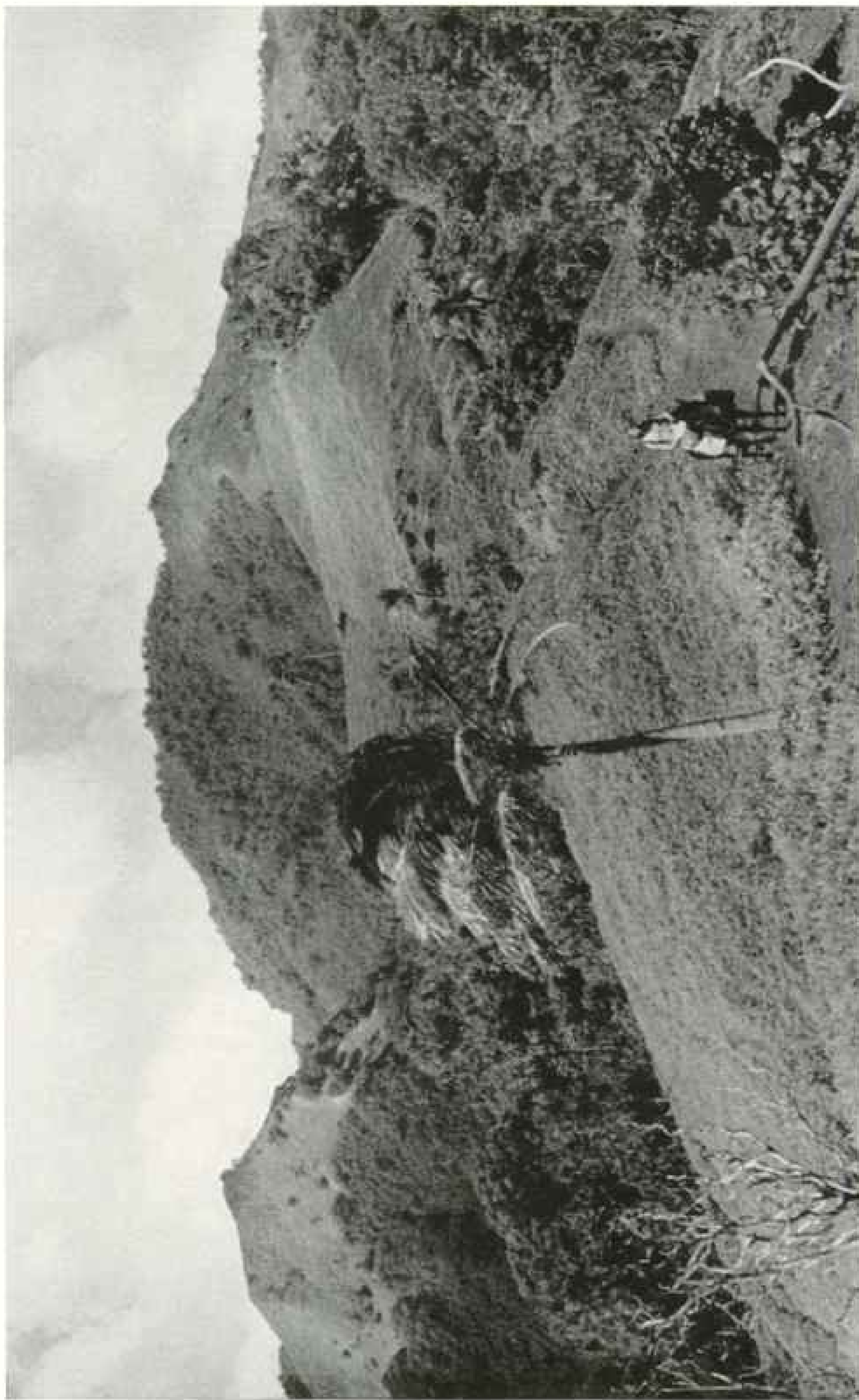
With all their worldly possessions, the author and his wife were landed in the lifeboat at Omoa Valley. When the *Tercera* had melted into the horizon, Liv and Thor were left alone for months with the islanders (page 112).

closed in. Soft green banana plants and orange and lemon trees heavy with golden fruit grew here in abundance, and above all the giant coconut palms waved against the blue sky.

The overgrown ruins were always with us. Sometimes they were gigantic rocks piled up in the form of big walls, sometimes platforms where once houses had rested and which were now beaten down by the forest.

Home, Where Dwelt a Native King

Far into the valley, across the river, and up the hill we went, until we found the site we wanted for our first home. It was a royal site, literally, for once the king of the inner valley had chosen it for his residence (page



Trail's End—Leaving Dense Jungle Behind, the Author Pushes Through to an Open Hill Carpeted with Grass and Ferns

Deserting the hot coast of Fatu-Hiva, Mr. and Mrs. Heyerdahl lived for weeks in the uplands, searching for traces of prehistoric life and enjoying the exhilarating air and splendid views. Giant spiders, centipedes, and clouds of mosquitoes plagued them, but these pests gave way to colorful bees and butterflies on the heights (page 132).



Liv Samples a Fatu-Hiva "Candy Stick"

She likes the palatable juice in the joints of the sugar cane. Chewing the fiber, she found, was not only pleasant, but benefited her gums.



Hospitable and Friendly Were This Chief of Tahiti and His Wife

Terüeroo adopted the Heyerdahls and named them Mr. and Mrs. Blue Sky. They were the chief's guests at Papénoo valley for a month (page 109).



On Shore Leave in the Pearl-rich Tuamotu Islands

In the shade of a sheltering palm, Liv makes friends with Polynesian residents of Takapoto. This atoll encloses a lagoon in which native divers, carrying chunks of lead in each hand, descend to great depths to find pearl shell. Black pearls frequently are brought to the surface. The trading schooner put in at the archipelago on her way to the Marquesas (page 110).

134): Now the jungle had recaptured the clearing.

Exploring the thicket, we discovered a cold, clear spring with the remains of a bathing pool built of huge stones. Near by, platforms and terraces of equally big rocks had been built into the hill.

The dense vegetation entangled itself over our heads, shutting out both sunlight and any view of the surrounding country. But here was good water, and if the site had suited a king, who were we to find fault?

I cut a piece from a bamboo tree, pierced the joints with a stick, and thrust the cane between the stones of the pool. The water came through the bamboo clear and cool, and never did water taste better than this.

Without wasting time we started to clear. Our Tahitian machete cut the thick green banana stem as if it were an onion. Even the mighty breadfruit tree fell crashing to the ground. Liv tore away brush, creepers, giant leaves and ferns, and soon a faint breeze together with sunlight reached the old ruins.

Before long we were able to look out upon

a marvelous view. Below was the green roof of the palm forest, with here and there a glimpse of blue stream. Above was the mighty mountain range where white dots marked the presence of mountain sheep.

Before nightfall we had cleared sufficient space to erect our little tent against mosquitoes and poisonous centipedes, and I had cut some red mountain bananas which we roasted before we retired to our bed of palm leaves (page 114). We slept to the sighing of the palms and sounds like distant shots that marked the falling of coconuts.

Meals for the Picking

Strange noises pierced our slumber. Was that a boar or a wild dog, or maybe a wild cat jumping for a fruit rat? The gay song of small birds awakened us next morning, with a larger blue and yellow bird making a deep bass to their melody. Flitting about in the palms, this beautiful creature sounded his deep *hoo* that carried for miles.

After a dip in the clear waters of our pool, we breakfasted on coconut, finishing with a



Honeymoon Cottage on a Jungle Isle

Plaited bamboo provides the walls for the couple's Fata-Hiva home. Palm leaves make a waterproof thatched roof. As an added luxury, the kitchen (left) occupies a separate structure.

few ripe oranges hooked down from a tree. We laughed for sheer joy.

What a country! What a life!

It took us three days to free the old plateau from the grip of the jungle. Around the site we cleared a sunny garden of coconuts, bananas, papayas, mangoes, oranges, lemons, and breadfruit, and of many of the less-known wild tropical fruits. Except for the breadfruit and mangoes, which ripen in regular seasons, many of the bushes and trees carried blossoms and green and ripe fruit at the same time all year round.

The red mountain bananas, or *fei*, so difficult of access in Tahiti where they grow on precipices, were abundant in the Omoa Valley forest. This fruit was on our daily menu. Being inedible raw, it was roasted over our open fire and eaten with the white oil of the grated and squeezed coconut kernel.

Equally important on our daily bill of fare were the big green breadfruit, which also had to be cooked.

We placed them in the center of a small fire and left them until the rind was burned black and cracked loose from the delicious

white meat inside. It was a starchy and heavy dish, tasting like a cross between fresh-baked bread and potatoes.

But down in the swampy soil below the spring we found our real potato field. Here grew the taro root with its big, heart-shaped leaves.

These foods, with bananas and coconuts, formed our staple diet. We never tired of coconuts, which we had for breakfast and for our evening meal, and the cool milk of the young green nut was always on hand. Orange and lemon juice with squashed sugar cane were also favorite cold drinks, while for hot beverage we had a sort of tea boiled from withered leaves of orange trees.

But we discovered more than food as we cleared the site for our home. Among the old ruins we found utensils of stone, shell, and bone—true collectors' pieces.

When our clearing work was completed, we called on the friendly natives to help raise our cabin atop the ruins. Where once a king's castle stood, we reared our modest home, six feet by twelve when the framework of strong branches was completed.



Bait Lures a Boar to the Cabin

Each night Liv tossed food scraps outside the house to attract the animals. Often they became so tame they were easily trapped in snare^s of bark. This big porker is totally oblivious of the bride, perched above him.

Giant palm leaves were split along the central stem, and Liv and two native women plaited the fringes together. Then we tied the plaited pieces together on the roof with ropes of tough bark. When the roof was finished, we plaited a floor between the poles, a foot from the ground.

Then, under the direction of the natives, the walls were put up. Green bamboos were collected and beaten flat with stones. Each wall was then plaited flat on the ground and carried to the house to be tied in position.

Finally squares were cut from the walls and fastened into place again with hinges to form a door and three shuttered windows. In addition to our cabin, Liv had her kitchen—three

stones placed together as a stove with a palm roof above (page 119).

Our little home received us with the freshness of spring, and we never tired of the beautiful color which changed as the bamboo aged. The plaited walls turned from green to reddish brown and yellow.

We made a bed from branches and covered it with piles of palm leaves. Then I made a little shelf, a table, and two crooked stools. Our plates were giant mother-of-pearl shells, which we gathered on the beach. For glasses and spoons we used bamboo joints, while coconut shells were our cups and bowls.

When we felt like having a tablecloth, we picked ourselves a large banana leaf. Water tubs were made by hollowing out a kind of green gourd and drying the rind brown over our open fire. Flowers and tropical shells were perfect for interior decorations.

Far away from the village, we sometimes went for weeks without seeing the natives. Now and then we met them in the woods gathering fruit, or we were guests at one of their feasts, at which strange dishes were served us.

One of the most important native dishes was raw fish or octopus cut into morsels and soaked in lemon juice. Another was the Marquesan *poi*, or *popoi*, fermented breadfruit, which is served at every meal and gives a peculiar smell to the Marquesan home.*

When the sea was tolerably calm, we went fishing in dugout canoes with a couple of the natives (page 113). Since there are no coral reefs around the Marquesan islands, the heavy seas that roll across thousands of miles of open ocean thunder on the coast of Fatu-Hiva. Yet for days and nights the vast Pacific may lie like a shining mirror around the island. Such nights, when the moon was full, we would go fishing for flying fish.

Flying Fish Pepper the Canoe

Two or three dugout canoes, with outriggers, slipped out on the black velvet water. Behind us lay the torn silhouette of the islands against the tropic sky, and before us, in the bow of each canoe, was a flaming torch of dried canes.

Blazing and sparkling along the water, the torches attracted the flying fish from the black depths and they would come shooting through

* See "A Vanishing People of the South Seas," by John W. Church, NATIONAL GEOGRAPHIC MAGAZINE, October, 1919.

the air like torpedoes. Sitting in the bottom of the low canoes, we tried to catch them with big nets. It was immense fun. With the speed of arrows the fish shot around the canoes.

They hit us on the head, in the stomach, and on our sides, and several flew right into the canoe, where they floundered helplessly about, unable to take off except from the water.

When the torches burned down, the fish disappeared, and we, with our palatable catch, would start deep-sea fishing in the moonlight.

We never knew what we would find on the end of our lines. Sometimes it was a shark or a giant deep-sea eel of the moray family, with sharp and dangerous teeth; sometimes a fish with a beak like a parrot's or with a needle-covered body. We caught fish of all sizes, shapes, and colors, for the waters around Fatu-Hiva are a vast aquarium.

Most of our time, however, we spent alone in the jungle, often wearing only native garb. We went on little expeditions for ripe fruit or pandanus kernels, or we made our way along the river bed, trapping the delicious fresh-water shrimp with chewed coconuts as bait.

Our enjoyment of life was deep. It was as if our senses, dulled by the noise and speed of civilization, had awakened from a substitute life to actual living.

Back with our loads from a hard day in the open, we flung ourselves in the fresh mountain stream and relaxed in its clear, cold water before enjoying our main meal. Having no watch, we ate when our stomachs said it was meal-time and slept and rose with the sun.

We learned there were two man-made things we could not do without in our new life. One was a pot in which to cook many of the fruits and roots which were inedible raw, and the other a knife to open the thick outer armor of the coconut.

There is no problem in cracking the shell of the nut; it is the outer covering that causes the trouble.

Fed by the Jungle for a Year

The natives do it by splitting the nut on an iron-hard stick stuck in the ground. We found, however, that we needed some sort of knife with which to shape the stick. And not only in this one instance, but time and again we had to face the fact that modern man can't get along without a sharp tool. Thus, with an ancient pot for our cooking



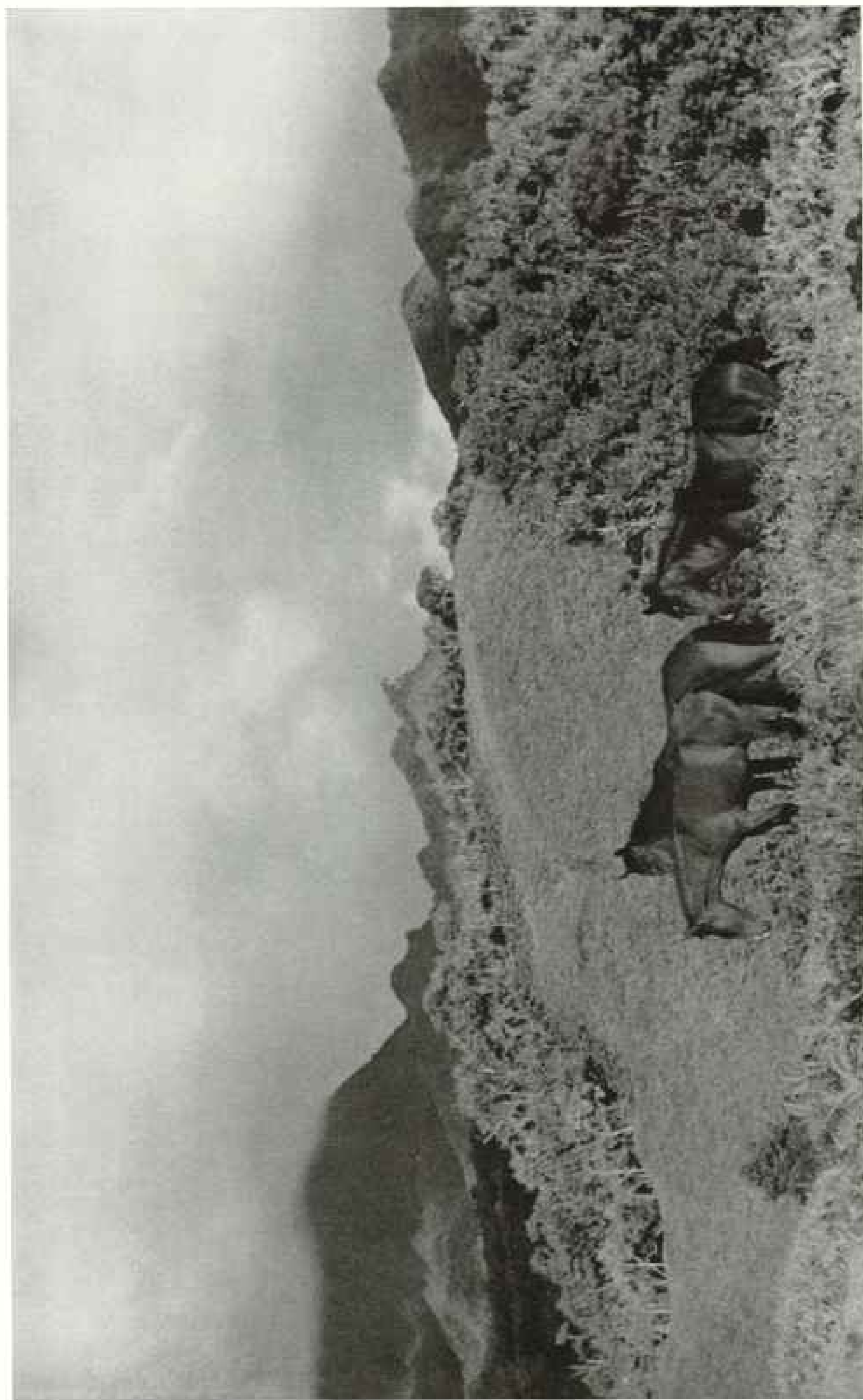
Silent Sentinel of the Jungle

Tropical vegetation hides the ancient stone, which stands on Hiva-Oa. Here the author and his wife found scores of grotesque figures. On this island scientists have unearthed relics of a long-forgotten cult of one of the most famous of all Marquesan gods.

and with a Tahitian machete, we fed ourselves from the jungle for a year.

From one old native we learned how to make fire by rubbing two pieces of wood. Simple though tiresome on hot, sunny days, it was a problematic business in wet weather when the jungle damp penetrated everything, and mold and fungi grew indoors as well as out.

During our daily expeditions into the jungle for food and zoological specimens, we stumbled across temples with great images carved from red stone, burial caves in which skulls and human hair hung from the roof, and hiding places for old, forgotten art carved in stone,



Semiwild Horses Find a Grazing Paradise in the Interior Highlands of Fatu-Hiva

Cattle and goats also roam over the uplands. All are descendants of animals brought to the Marquesas by early mariners (page 132). Occasionally the islanders go up to the mountains to keep a foal or a milch goat, but most of the time the animals are undisturbed.



Pabo Catches a Wild Boar with His Bare Hands

The author and his wife joined a hunting expedition in the uplands. They were amazed when the boy suddenly leaped down the fern-decked hill. Catching the little boar with one hand and closing its sharp jaws with the other, he escaped the charging parents by long side jumps.



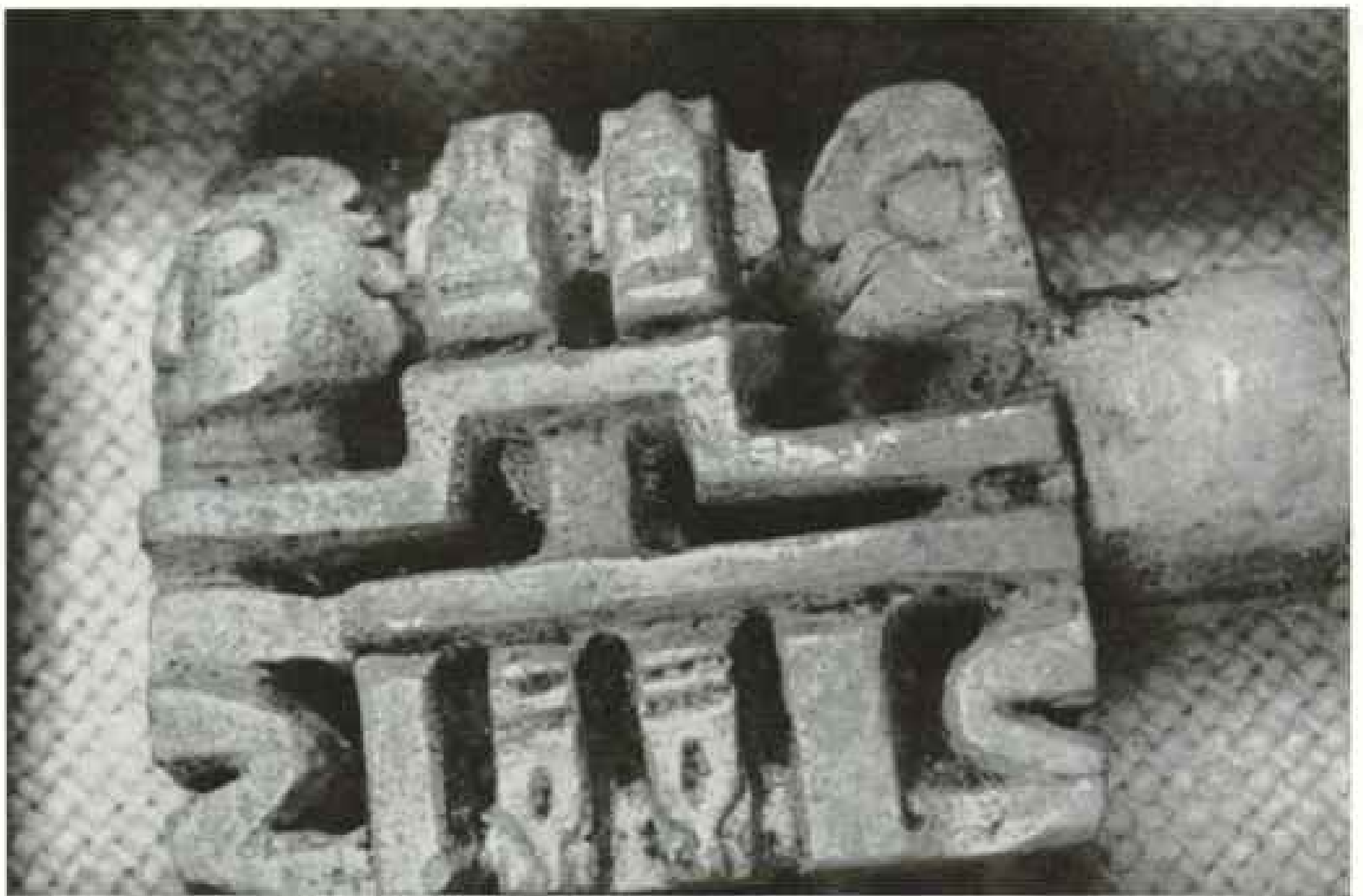
Liv Gathers Dinner Along the Rugged Lava Coast

When the ocean was calm, the author's wife and her friend, Tabla Momo, clambered into caves along the water front, searching for edible creatures in the sea-sprayed, salt-water ponds. Red and green sea anemones covered the bottom like a soft carpet.



Thor and Tioti Lower the Canoe Into "The Water of the Night"

Val Po, the islanders call this underground lake beneath a mountain at the northern end of Fatu-Hiva. Because it is a talu region, the Polynesian guide was fearful. By the faint light Thor could see clear, deep-blue water and a shore of snow-white sand (page 126).



Geometric Patterns and Human Features Blend Grotesquely in This Miniature

It is one of the specimens of ancient art in stone, bone, and teeth brought back by the author.

wood, and human bone.

Seeking a "fish of stone" seen by a native, we found a six-foot-long carving of a stylized shark cut in a half-buried rock. After scrutinizing this rock carefully, we began tearing away the turf and soil. Our suspicion that it was a marker was well founded, for some 400 square feet of flat rock appeared, and this, when swept clean of soil, was found to be covered with carved figures.

Peculiar faces with great eyes gazed up at us. Rows of double-lined men and women swayed in a perpetual dance. There were turtles cut into the rock, and even a big vessel with a series of oars or paddles. Close by, another large rock was covered with carvings, and all was surrounded by a wall where several boulders were marked with concentric circles (p. 131).

We could also trace markings where the bygone sculptors had sharpened their stone adzes.

It was with strange feelings that we looked on the curiously carved figures that had been hidden from human eyes—who knows how long?—by the encroaching jungle. What secrets did they hold?

Exploring a Forbidden Forest

Our researches provided many strange experiences. Once we left the valley for several days on a canoe expedition with Tioti and Fai, two of our best native friends. We set out in small dugouts with one little wooden bowl holding our provisions. The smell that emanated from the leafy covering left no doubt that the contents were old poi-poi.

However, our companions promised to supply us with fresh fish and fruit on the trip. By promises and persuasions we succeeded



Old Tei Blows Through His Nostrils on a Bamboo Flute

With folk tunes and tales of Creation, cannibalism, and tribal wars, the chief of Oula Valley entertained Liv and his adopted daughter, Tahia Momo. He also told many stories of the early life of his people (page 136).

in getting our two friends to guide us into a certain forest in picturesque Hanavave Valley (page 131). This particular part of the valley was once proclaimed tabu by the ancient medicine men, and no one had since set foot on the conjured soil for fear that a great disaster might befall him. Neither did anyone know the secret of what the forest concealed.

Tabus such as this were associated with a number of places, articles, and even people or acts, in the olden days. Extremely few, however, were still venerated in Fatu-Hiva.

Forcing a passage through the dense dark forest, we came upon its secret. Before us was a high wall of great rough-hewn rocks covered with moss and creepers. I managed



Early Fatu-Hiva Artists Had a Weakness for Big Ears

The photograph greatly enlarges the miniature carving, from Mr. Heyerdahl's collection of Marquesan relics. In all such ancient images, large or small, the ears and eyes are exaggerated in size.

to climb up and pull Liv after me, and we found ourselves standing on a lofty stone platform.

Something rose into the air at the end of the platform, but it was totally concealed by thick vegetation. Tearing away turf and roots, we disclosed two large rectangular slabs, beautifully cut, of deep-red rock. They were placed against each other like the ridges of a roof and on each was fantastic carving.

Grotesque supernatural beings with big eyes and with ears like those of elephants grinned at us. Some had their hands over their heads, some had one hand below the chin, and still others had both hands placed over their stomachs.

Isolated in the center of these carvings were two small artistic figures, like twins, side by side, with their carved hands over their bellies. Effective, too, was a group of three dancers with large, hanging ears. Between the carved figures the red stone was ornamented with geometric designs.

I discovered and managed to remove a white stone which I found led down into a dark chamber. Crawling backward into the hole, I found myself in darkness between moist, slippery stone walls. Something stretched on the floor proved to be a badly

preserved human skeleton. There were no other remains in the little chamber.

Often the property of the dead was sealed up in rooms blocked by rocks, and the size of the huge stone platform, in comparison with the tomb in which I found myself, suggested that there were other rooms concealed between the great blocks. If so, they were too cleverly hidden for us to find.

To "The Water of the Night"

Our little expedition continued in the two outrigger canoes on the open ocean toward the northern part of the rugged island. We had heard a native legend about an underground lake, Vai Po, or "The Water of the Night." Two of the natives even claimed to have seen the opening that led to it. We had carefully made a note of the location, and now we were off to investigate.

It was evening when we arrived at the Taio-kai Valley, and before we could reach the shore the tropic sun had set.

The native, Tioti, was filled with fear, expecting some revenge for the breaking of the tabu, and in his nervousness he upset the canoe in which three of us traveled. We rode the roaring wall of a breaker toward the rocky shore hidden in darkness and



"Come and Eat," Fatu-Hiva Islanders Call to Passers-by

Once the invitation was given in all seriousness. Today it is politely answered by, "No thanks, I am full." This family is dining on *poi*, a sour paste pounded from fermented breadfruit which had been buried in the ground for many months. A carved ceremonial stone, with a double-headed image at the top, still is used for pounding. Islanders mix the concoction with fresh breadfruit, dip it in coconut oil, and then eat it with the fingers from big wooden bowls.

miraculously reached it unscathed save for a few cuts and bruises from the lava stones.

Taiokaï, once a densely inhabited valley, today is filled by a titanic rock slide. A few native ruins still appear at the edge of the slide, but elsewhere the jungle has grown like a green wall to the shore.

We lit a fire between the boulders and slept that night on the beach. Never have I passed a more restless night. Large hermit crabs by thousands crawled over the pebbles in the moonlight to fetch fallen fruit from the forest above. They crawled over us and tried to press their way under us, many of them nipping our flesh in the process.

If we shook ourselves, they just curled up in their stolen shells, only to pop out again when everything was quiet.

We were up before the sun and while Fai penetrated the woods to return with a load of breadfruit and oranges, we others sought what food the beach had to offer. With his long three-barbed spear, Tioti caught a large red fish between the lava blocks. This we roasted on the coals, while a few hermit crabs and clams were fried in their own shells.

After our hearty breakfast we set out to see

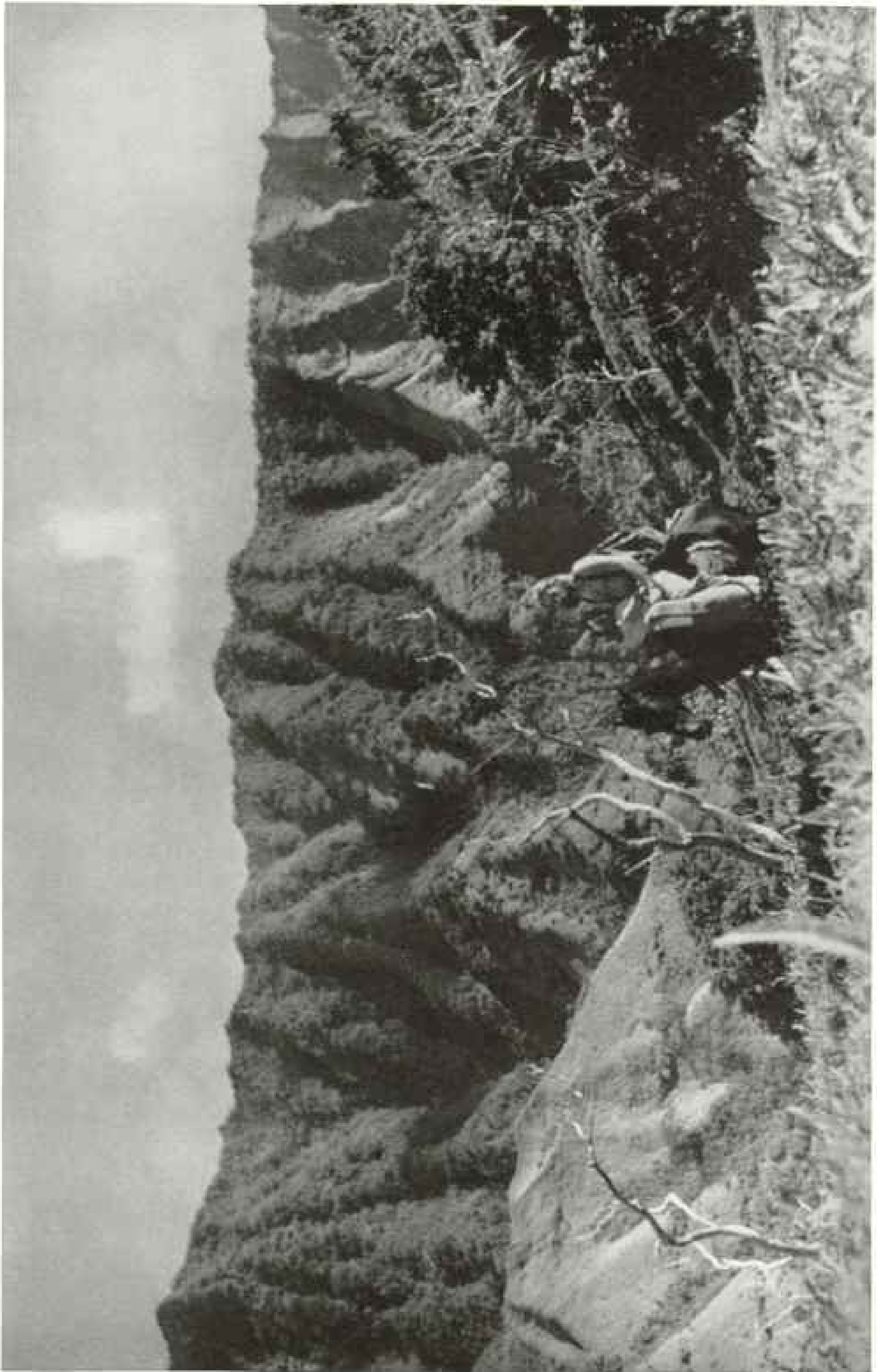
Vai Po. At the foot of a mountain wall that lifted itself for hundreds of feet we found a dark opening, partly hidden by huge boulders and fallen rock. Carrying the smallest canoe to this point, we got it through the opening and down a rocky hillside. We groped down in the semi-darkness till we came to a shore of snow-white sand (page 124).

A Subterranean Lake, and a Legend

Only a faint light from the opening behind reached the beach, but by it we saw an unforgettable sight. A lake of clear, deep-blue water disappeared into the darkness, while stalactite fingers like petrified waves hung from the roof above, which in turn supported its unknown tons of rock.

Launching our canoe, Liv and I paddled slowly into the darkness. At first an eerie silence enveloped us, but suddenly the darkness was filled with soft music. It took us some moments to realize the noise came from the small waves spreading out from our canoe into the hollows of the rocky walls.

We moved slowly, apprehensive of what might lie ahead. Once we dipped our hands overboard and tasted the cool crystal-clear



Tangled Jungle Growth Impedes Horse and Rider in Fatu-Hiva's Uplands

Rows of jagged peaks rise nearly 3,000 feet above the sea. Few white men have explored the interior of the island, despite its small size (page 132). Tropical rain forests of incredible density bar the way. After hours of cutting through strips of jungle the explorers were rewarded by coming upon pleasant, open plateaus.



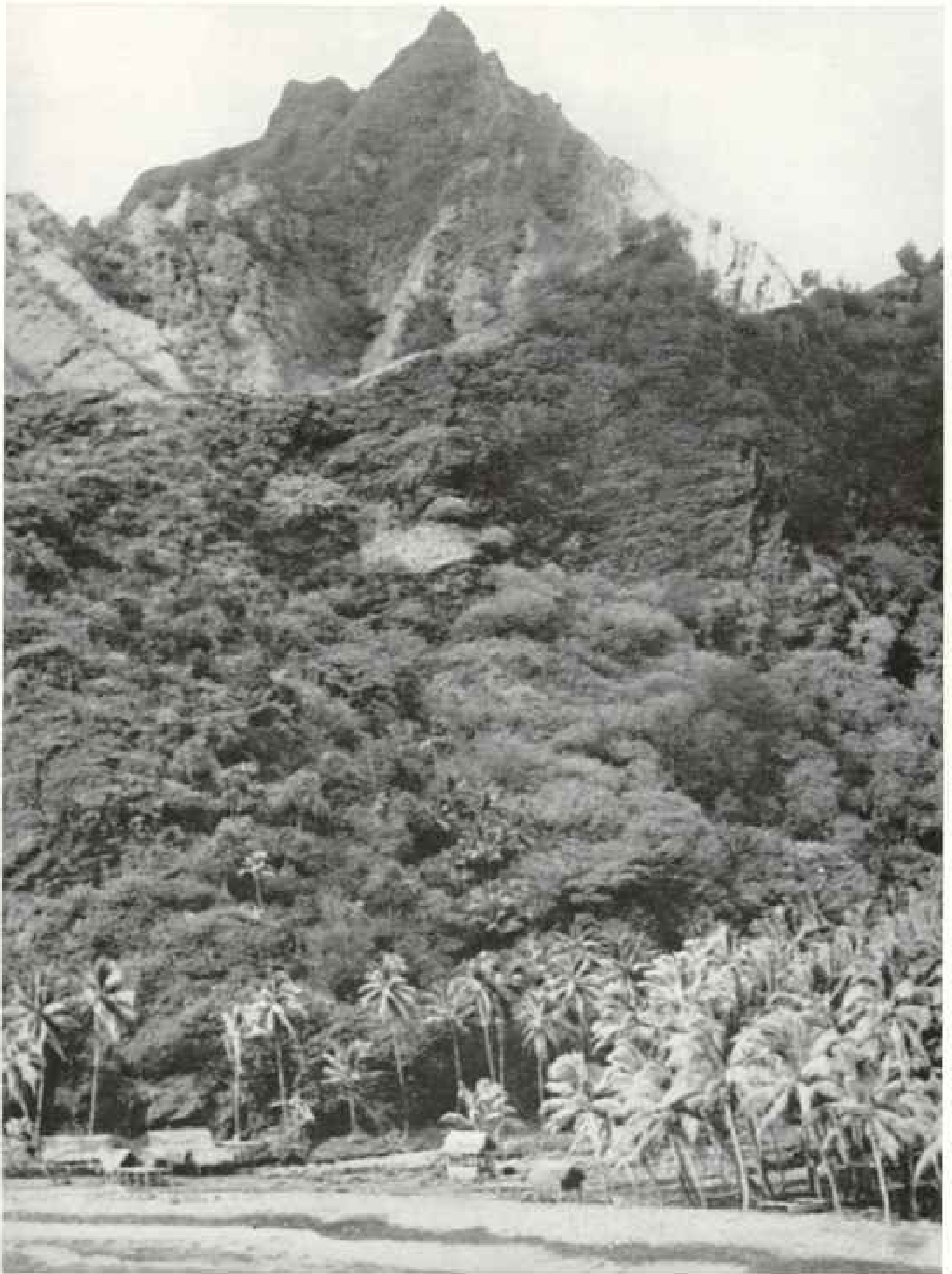
An Abandoned Garden Still Bears Fruit

Here in Oufu Valley old Tel Tetui gathers wild fruits from which he will prepare palatable dishes. He brought home delicious oranges in baskets plaited from coconut leaves. Remains of an old wall can be seen beyond the tree.



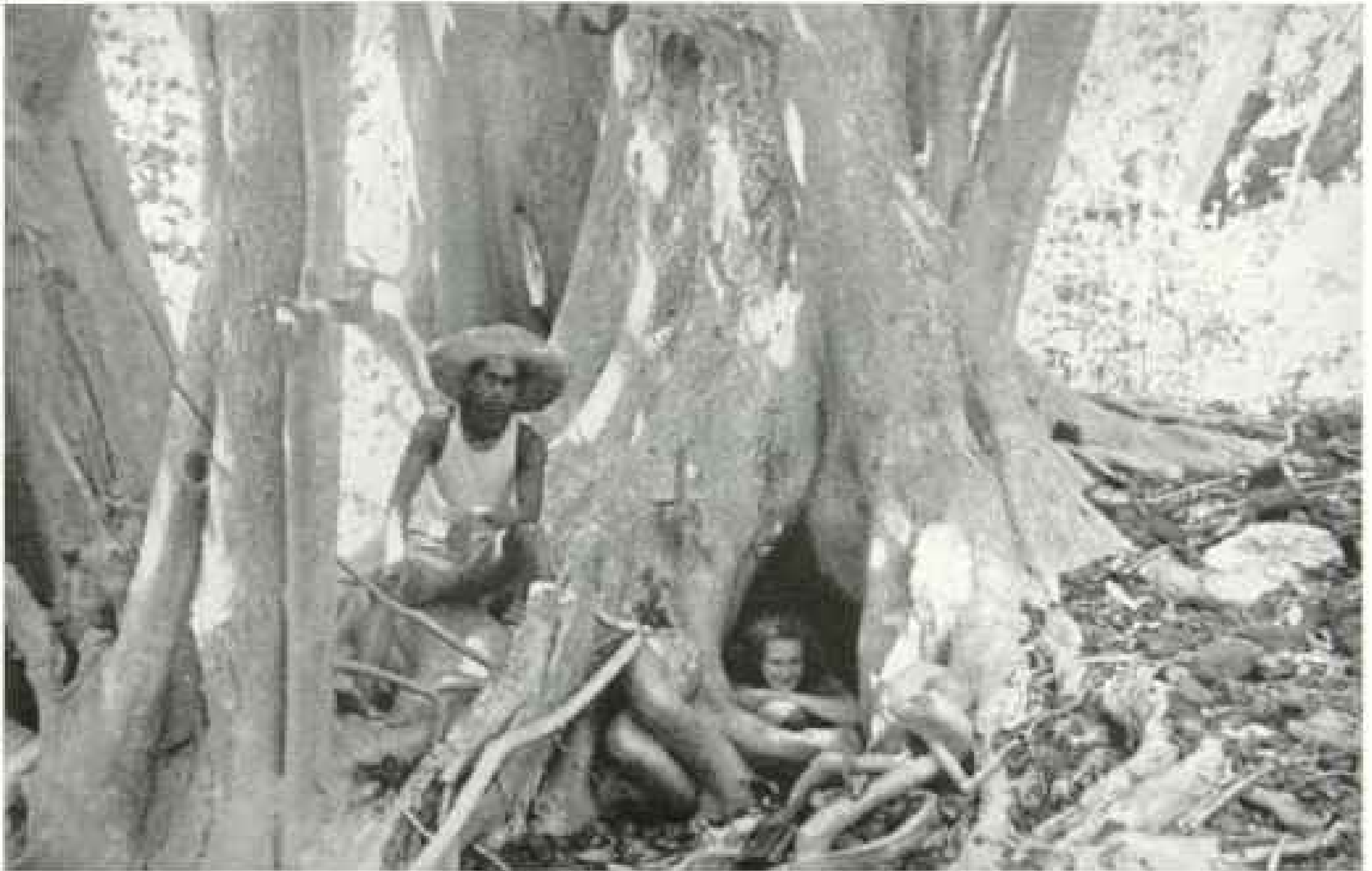
Awaiting Division of the Spoils

Back from the chase, the dogs anticipate a taste of raw boar's meat as their reward. The hunter wraps the fresh meat in breadfruit leaves before roasting it between hot stones. Red fet, or mountain bananas, hang from the roof.



Thor and Liv Come to the Valley of Ouia to Recuperate

They had left the island for a month to seek treatment during an illness. Upon returning, they found their cabin eaten by insects and their clearing swallowed by the jungle. Moving to the eastern side of the island, they lived here with Tei Tetua, valley chief, in his tiny village (pages 129, 132, 133, and 136).



Sacred Trees of Mysterious Hanavave Valley Guard Their Secret Well

Islanders know that ancient medicine men proclaimed this section tabu, but none remembers why. Skulls and old carvings abound in the burial place, long ago reclaimed by the jungle (page 125). Liv peeks from a cave in the gnarled roots of one tree.



Key to a Storehouse of Ancient Art—a "Fish of Stone"

The image, outlined in a half-buried rock, was a clue to a jungle-hidden enclosure. Tearing away turf and soil, the author uncovered 400 square feet of flat rock covered with queer carved figures. Islanders today have no knowledge of the rock's meaning (page 125).



Tei Tetua Cooks the Meals for His Guests

When Thor and Liv arrived in his valley, the old chief regarded them as his personal responsibility and would not permit them to do their own house-keeping. He prepared their food in his kitchen and carried the many peculiar dishes to the Norwegians' cabin (page 136).

water, which contained just a trace of salt.

Our canoe rounded a corner of rocky wall, and soon our heads were touching the roof of the cave so that we were forced to lie down. We kept moving, however, till our bow scraped the rocks above us and forced us to stop.

According to old legend, deep below the surface here a diver might find a hole in the rocks and, swimming through, come into a tunnel leading upward to another cave above the water. This was the secret chamber of an old Polynesian medicine man, and his skeleton should still be sitting there in a stone chair beside an altar.

Vai Po, says the legend, rose to close the entrance when the mountain peak fell and buried

his valley and his people.

We did not take that swimming trip, so I cannot guarantee the truth of the story more than to vouch for the existence of the beautiful subterranean lake of Vai Po.

In addition to our coastal expeditions and our penetrations into the valleys, we found a most interesting field for exploration in the highlands. Few white men have ever seen this country, and parts of it are completely unknown and untrodden by whites, despite the comparatively small size of *Fatu-Hiva*. Aside from the torn peaks and giddy precipices, there are real tropical rain forests of incredible density.

This jungle, hanging down the steep mountain and hillsides, will, however, suddenly open up to show vistas of wonderland. Though we lived for weeks on end in this beautiful country some 2,000 to 3,000 feet above the sea, we never tired of its exhilarating air, its splendid views, and its unending variety of terrain and vegetation (pp. 116, 122, 128).

Cutting our way for hours through a narrow strip of dark, dense jungle, where giant spiders and centipedes abounded and where clouds of mosquitoes swarmed about us, we might suddenly break through to the bright sunlight of an open hill, or a plateau carpeted with grass and flowers or small ferns.

Here bees and butterflies flitted about, and we came upon seldom-seen species of colorful beetles. Such places are the home of semi-wild horses, cattle, and goats, whose ancestors were first brought to the island by early European mariners.

Uninhabited and healthful, with fresh breezes to blow away the disease-carrying mosquitoes, the plateaus were a paradise to



An Island Boy Leads the Way to Fatu-Hiva's Cool Highlands:

Exploration trips to the mountains provide a pleasant escape for the Heyerdahls from the heat of the deep valleys, but their guide will insist on a return by nightfall. Islanders, accustomed to the warm climate of the lowlands, believe a night spent in the "cold" upper air might prove fatal.



Strong and Wiry, Tei Tetua Brought Heavy Loads of Fruit from the Mountains

The old chief of Ouia Valley once had been a leader of four tribes. He survived his people, including twelve wives, and his only dependent, before the arrival of Thor and Liv, was his small adopted daughter.



Thor Reclaims a Royal Site

Once a Fatu-Hiva king lived on the spot selected by the author and his wife for their home. A deep pool of clear, cool water made the location desirable, but vegetation had closed in on all sides (page 115).



Cave Dwellers on Fatu-Hiva's Rocky Coast Watch for a Sail

During the final weeks of their stay on the island, the Heyerdahls lived in the wild cliffs at Tahaoa beach. There they waited for the trading schooner to appear and take them back to civilization. They returned to Norway, but were in British Columbia when their country was invaded.



Mrs. Heyerdahl Steams Tropical Fruit for a South Sea Mountain Picnic

us. But we were dependent on the valleys for food. Only wild pineapple, an occasional mango tree, and other scattered fruit trees grew there, and only rarely natives came with dogs and spears to hunt game or lasso fowls.

Illness Compels a Flight from Eden

To picture the South Sea islands as a perfect paradise would be untrue. The lavishness of nature and her beauty probably give this part of the world more claim to the title than any other. But the snake has entered Eden. Although unafflicted with poisonous reptiles, these islands are filled with the danger of disease from insects and even from the jungle mud. One must, in honesty, mention this.

The tiniest cuts or scratches, particularly on our feet or ankles, had to be guarded against. Once there they did not heal, but grew and spread. Often our troubles started as boils that left growing wounds. We tried old native remedies of leaves and flowers, and sterilization with boiling water, but nothing gave lasting help.

As months passed and no schooner called at Fatu-Hiva, our situation became serious. For weeks we could scarcely crawl from our cabin in quest of food. Then we made a desperate decision. On the beach near the native village lay a decrepit lifeboat, discarded long since by some schooner. Urged by my insist-

ence, the natives patched this up, fitted it with sails, and stocked it with provisions.

Finally, one day Liv and I, with a crew of eleven rowers, set out from our island. Brisk winds soon carried us from sight of land, and with no compass or other instrument we set our course, old Ioane steering by means of an oar toward the neighboring island of Hiva-Oa, hidden beyond the horizon.

The trip was a nightmare. The fair wind turned to bad weather, and mountains of water rose around us as we sat or lay in our uncertain craft, our swollen feet wrapped in banana leaves.

Liv and two of the native boys lay helpless on the bunches of bananas and coconuts that were our only provisions, but the rest of the crew showed themselves masters of seamanship. They maneuvered through the crushing breakers towering over us, bailed continuously, and kept the little boat moving steadily across a raging ocean a distance three times the width of the English Channel.

Thus we arrived at Hiva-Oa a few hours ahead of the trading schooner from Tahiti, its cookroom damaged by the heavy seas.

Hiva-Oa, main island in the south Marquesan group, has a Catholic mission, a French policeman, an English shopkeeper, a Norwegian copra planter, a few Chinese, and several hundred natives. One of the natives,

who had studied in Papeete hospital, acted as doctor for the island. He quickly opened our wounds and dressed them, and a month later, when they were completely healed, we were ready to return to Fatu-Hiva by schooner.

We found our bamboo cabin had been eaten by insects and overrun by ants, poisonous centipedes, and giant spiders, while our little clearing was once again in the grasp of the jungle. Therefore, with the aid of a few native friends, we moved to the Valley of Oua, on the eastern side of the island, where an ancient native lived with his adopted daughter. Once chief of four tribes, he had survived his people and his twelve wives, Tioti explained to us.

It was a strenuous trip over the interior highland, through dense bamboo forests and thickets of fern trees, but a warm welcome awaited us. From his cabin between the palms, the old chief Tei Tetua came running to greet us. Breathless for a moment, he finally began to gasp out in his native tongue:

"Come and eat. Eat pig. No more pig, eat chicken."

Next morning our friends departed, leaving us with Tei Tetua and the little girl, Tahia Momo (pages 123, 125, 129, 132, 133).

Down near the beach, where the refreshing trade winds swept away the mosquitoes and the evils of the jungle, we built our new home on high poles with one wall open and no furniture save a heap of leaves for our bed.

Life in a "Bird's Nest"

We felt we were living in a bird's nest. When a storm swept in from the open ocean, or when wild boars, roaming the valley, stopped to scratch the poles of our home, it swayed like the palm tops outside.

Old Tei Tetua came running in protest when I went to seek porous crack-proof stones to form Liv's cookstove.

"You guest in my valley. You eat my food," he said. And he grasped our single pot and went away.

In the months that followed we did not cook a meal. Every day Tei Tetua came climbing the ladder to our doorway with big wooden bowls filled with strange but palatable food. His specialty was a dish consisting of small edible-shell crabs boiled in coconut milk, and boar that had been baked in leaves between hot stones and dipped in a piquant sauce, all served with heaps of boiled taro root.

Together with old Tei, who was strong and wiry, I spent most of my time seeking fruit and edible roots, or exploring old caves and ruins for carvings of the early days.

Unforgettable were the evenings we four spent together around the campfire, old Tei

telling us of days gone by. Our own world was far away. Nothing existed save us four around the glowing fire, with the moon cutting a path over the dark ocean and lighting the top of the palms up the valley where the world ended in a wall of dark precipice.

Sometimes we spoke to Tei of big cities and of modern marvels like airplanes, but even in the telling we found ourselves wondering: "Is it really true?"

Perhaps the music Tei blew on his bamboo flute by means of his nostrils was crude and monotonous, but it fascinated us and interpreted the spirit of the jungle night (page 125). When he sang the old native story of Creation, we marveled that it was our own religion with other names for Adam and Eve and Jehovah.

We often shuddered as Tei told stories of cannibalism and of cruelties during tribal wars, but we felt our own civilization was none too advanced in spite of superior knowledge.

Still to be seen at an old tribal meeting place was an oven where once enemies of war were roasted and eaten by the medicine man in honor of Tiki, one of the characteristic Marquesan gods. Cannibalism seldom occurred among the common people, though Tei, with great respect, mentioned that his father, Uta, preferred the old but sweet man meat—which they called "long pig"—to anything else.

We loved to hear him tell stories of his people, of their skill in trepanning, tattooing, in wood and stone carving, and in making *tapa* (bark) cloth. He also told us how they treated disease.

Several months after we first met Tei and his little adopted daughter, we bade them a regretful farewell. Alone we managed the exciting climb over the mountains and down to the other coast to make our final home on the island in a cave in the wild cliffs at Tahaoa beach (page 134).

Here we lived for a few weeks, collecting our food from the shallow water between the rocks, always watching the blue horizon for the white sails of the little schooner.

When it came, and we clambered over the gunwales from the rope ladder, we almost frightened the native crew by our wild appearance.

"Monsieur," said a polite Tahitian native in French, "you look like a real savage."

As our ship moved out to sea, Liv and I stayed by the gunwale to catch the final glimpse of our island, a blue torn shadow disappearing into the ocean.

"Fatu-Hiva," I said to Liv, "certainly was the right place. But you can't buy a ticket to paradise!"

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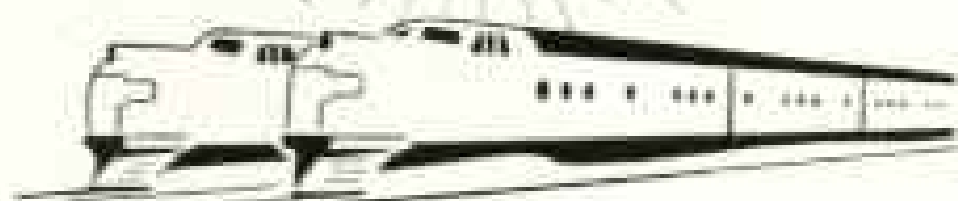
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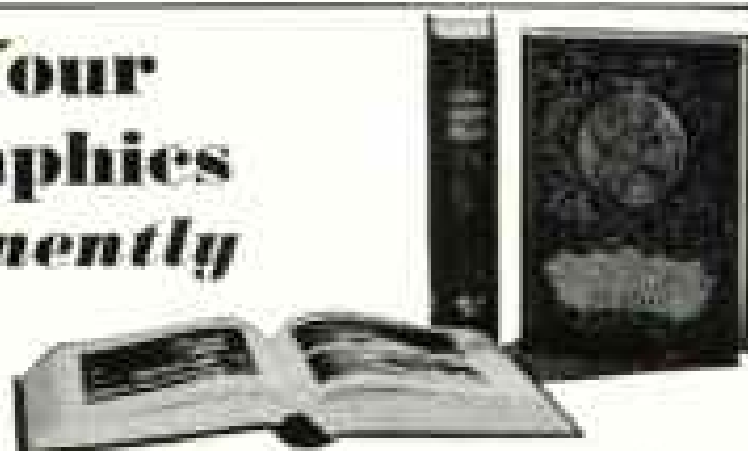
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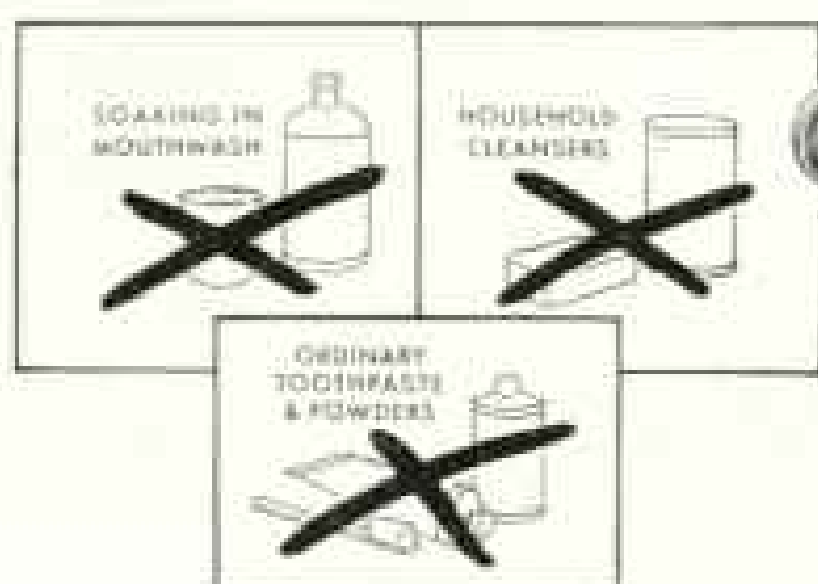
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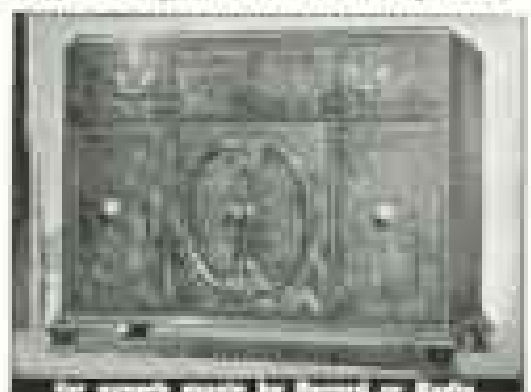
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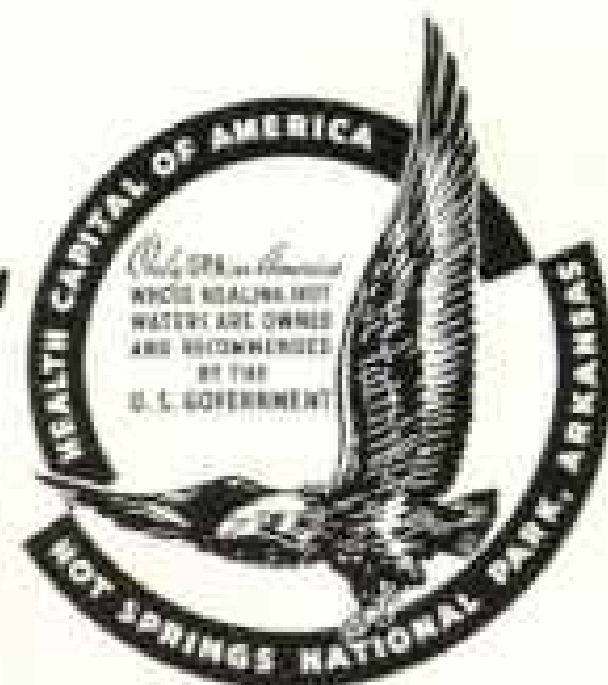
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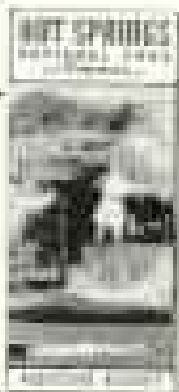
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Give the mouth and throat extra care



"Mention the Geographic—It identifies you."

“THE SUREST WAY OF PREVENTING

Pneumonia...”

ACCORDING TO an eminent physician, “The surest way of preventing pneumonia is to eliminate the common cold and other respiratory infections.”

This is because pneumonia rarely strikes out of a clear sky; usually it is preceded by a cold, influenza, or some other infection of the breathing passages.



Daily exercise pays dividends in pleasure and good health.

How, then, can one guard against the dangerous cold?

... By keeping away from people who have colds and avoiding contact with crowds as much as possible. By getting daily outdoor exercise and keeping in good physical condition. By getting adequate rest and keeping properly clothed. By avoiding over-heated rooms. By eating properly—not over-eating—and being sure to get plenty of protective foods like green vegetables.

At the first sign of a cold, proper treatment should be started and kept up as long as the cold persists. If the cold becomes severe, the safest course is to go to bed and call your doctor.

Pneumonia strikes most frequently during the first three months of the year. So it is particularly important, during this period, for you to be on the lookout for pneumonia's most common warning symptoms such as:

Sudden chill . . . fever . . . pain in side . . .
cough . . . thick, rust-colored sputum . . .
hurried, somewhat labored breathing.

When any one or any combination of these symptoms is present, a doctor should be called at once.

For if the illness is pneumonia, he will then, while there is still time, have the best opportunity to use successfully the effective weapons of modern science.

Only a few years ago, the doctor was relatively helpless in the face of pneumonia. Today, he has means of more certain diagnosis . . . including methods of determining more accurately the type of pneumonia. Furthermore there are highly effective serums and chemical agents to use separately, or in combination, in treating a particular case.

These new developments have been responsible for an amazing reduction, in the past three years, of about 50% in the death rate from pneumonia. But—most important—the doctor must have the chance to use his skill against pneumonia early!



Proper clothing is important to the health of the whole family.

Metropolitan's free booklet, "Colds, Influenza, Pneumonia," contains many valuable, practical suggestions to help you ward off trouble at this time. Write today to Dept. 141-N.

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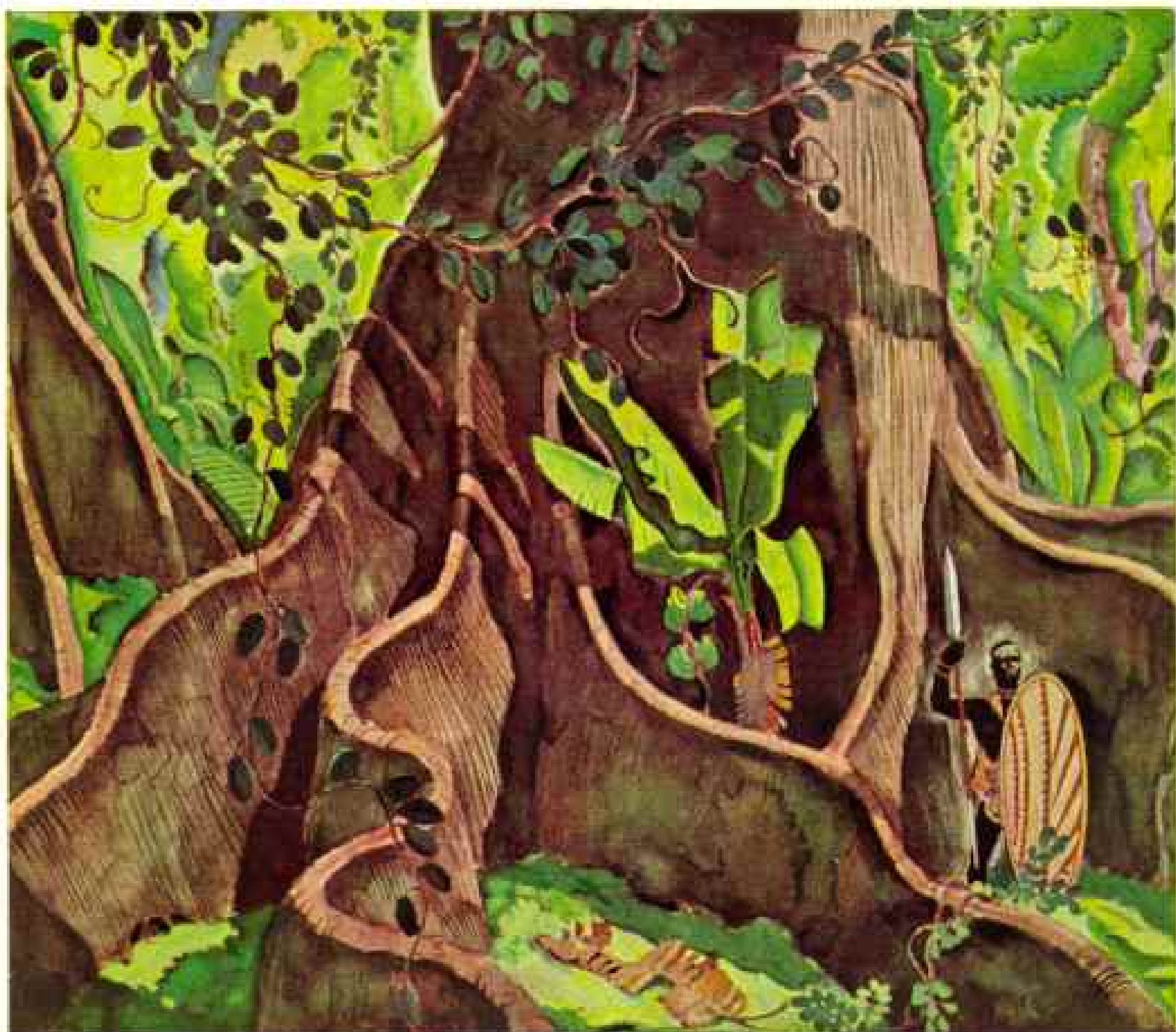
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The tree that wears a petticoat

IN THE HEART OF AFRICA, grows a tree known as the silk-cotton tree, *Ceiba pentandra*.

Instead of having a simple, cylindrical trunk like a maple tree or an oak, the silk-cotton tree has a bole that flares out in folds like a gigantic petticoat.

These folds often begin as high as thirty or forty feet above the ground and form a skirt whose hem line could enclose a small house.

This wooden petticoat serves a very useful purpose. Tornadoes are common in this region. The tree's roots are shallow. And were it not for these tremendous, skirt-like braces, the tree might easily be uprooted.

It may not occur to you to compare yourself to the silk-cotton tree. But if you will do it, you may save yourself a peck of trouble.

For man has his private tornadoes; too, against which he should protect himself: accidents that

can lay you very low indeed, unless you have the extra, buttress insurance brings.

When you get into an accident, and do not have accident insurance, you may find you haven't enough ready money to pay the doctor, the hospital, and to take care of your many, many household expenses while you are laid up.

The man who has such insurance is relieved of these worries, for he has an income that provides for such an emergency. If you have ever been flat on your back, helpless, without income, you know how wonderful it is not to have these worries.

Such insurance costs but little in view of the peace of mind it brings. Why don't you talk to your Travelers agent about it, today?

Moral: Insure in The Travelers. All forms of insurance. The Travelers Insurance Company, The Travelers Indemnity Company, The Travelers Fire Insurance Company, Hartford, Connecticut.

Menu Mainstays

BY
HORMEL



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HAM. America's original cured ham, now milder and more tender than ever—thanks to an exclusive new curing method. Hormel Flavor-Sealed Ham comes ready to slice cold, or you can heat it in the oven for a grand main course.



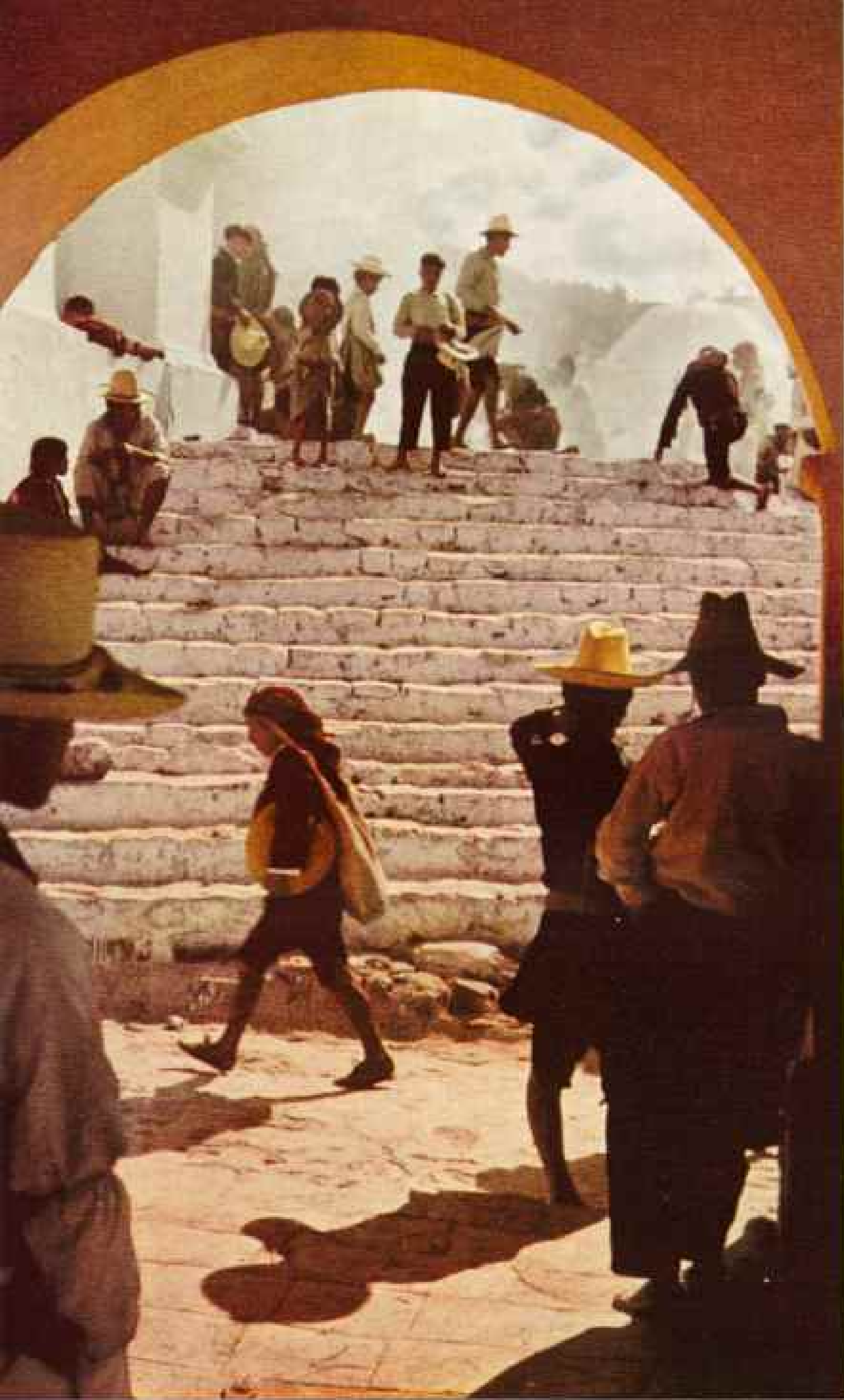
CHILI Con Carne. It's unlike any you've ever tasted the way Hormel makes it. And if you don't honestly like it, Double Your Money Back! Open up a can of Hormel Chili Con Carne for lunch or Sunday supper. Simply heat and serve.



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"Where shall we stay?"

NATIONAL GEOGRAPHIC MAGAZINE'S HOTEL SECTION

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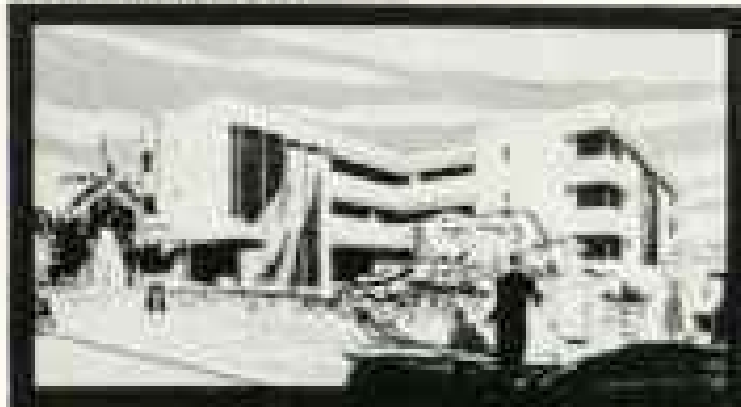
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Miami Beach



The Belmar

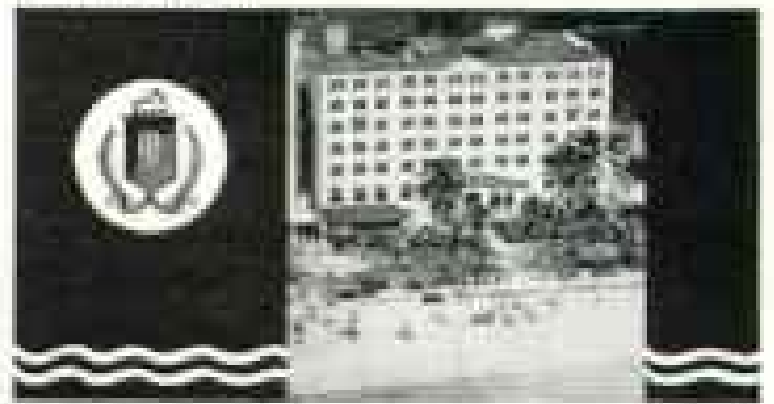
Modern, new—invariable choice of the "right people." Wholesome environment, pleasantly diversified recreations—Private beach, palm garden, solarium, beach refreshment bar, glass-enclosed roof recreation room, ocean view dining room and terrace. Extensive structural glass invites air, sunshine. Steam heat, tiled baths. European Plan. On Ocean at 26th St. Advance reservations advised. Booklet, rates on request. Bruno Weil, Gen. Mgr.

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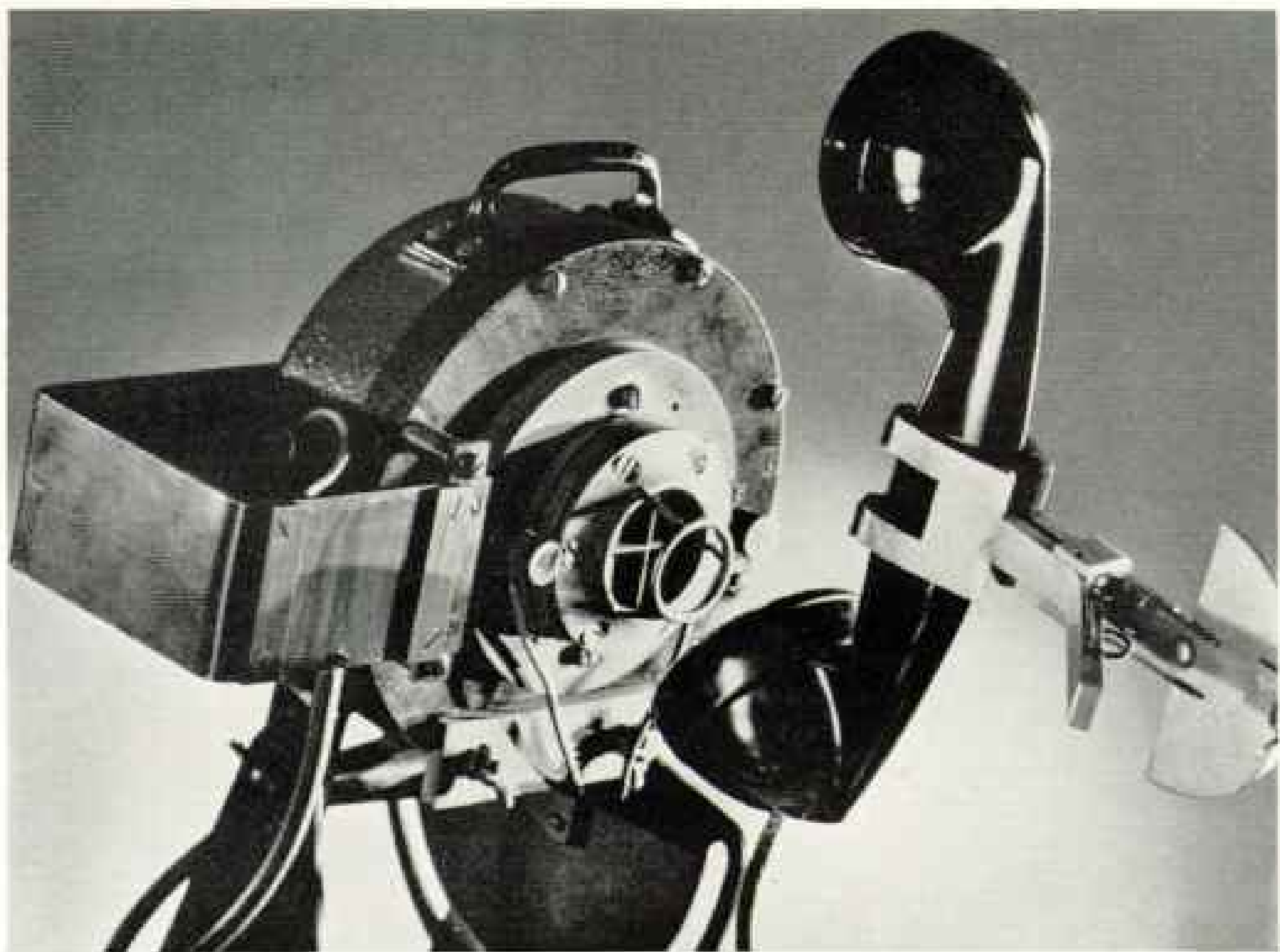
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SAID THE ELECTRICAL MOUTH TO THE ELECTRICAL EAR . . .

*"Joe took father's shoe bench out,
She was waiting at my lawn."*

If you were passing through the Bell Telephone Laboratories today you might hear an electrical mouth speaking this odd talk, or whistling a series of musical notes, to a telephone transmitter.

This mouth can be made to repeat these sounds without variation. Every new telephone transmitter is tested by this mouth before it receives a laboratory or manufacturing O.K. for your use.

This is only one of the many tests to which telephone equipment is subjected in the Bell Telephone Laboratories. And there is a reason for the selection of those particular words.

It happens that the sentence, "Joe took father's shoe bench out," and its more lyrical companion, "She was waiting at my lawn," contain all the fundamental sounds of the English language that contribute to the intensity of sound in speech.

Busily at work in the interest of every one who uses the telephone is one of the largest research laboratories in the world. The outstanding development of the telephone in this country is proof of the value of this research. In times like these, the work of the Bell Telephone Laboratories becomes increasingly important.


*The Bell System is doing its
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 YOU CAN'T measure it by slide-rule or calipers—but you'll know in your heart that the matchless thrill you get from a Lincoln-Zephyr is what you've always wanted in a motor car!


FOR YOU need only glimpse the breath-taking beauty of a Lincoln-Zephyr—feel the live horsepower of its 12 eager cylinders—relax in the cradled comfort of its magic *glider-ride*, to realize why owners everywhere get more fun per gallon in this "only-car-of-its-kind".

AND THAT'S just as true, whether you drive a Lincoln-Zephyr for business and social rounds, or to make the whole sports map of America, from Northern pine to Southern palm, your playground.

 CREATED by Lincoln engineers and built to exacting standards in the renowned Lincoln precision plant, this new Lincoln-Zephyr is rugged, able, modern through and through, with he-car capacity to "take it." Different in design,

different in basic construction, different in engine—its operating-thrift is astonishing!

UNIT body-and-frame construction in closed body types puts steel-welded safety around you. Sound insulation hushes road noise and traffic roar. Doors open by push-button. Tops on convertible models are electrically operated. The famous new *glider-ride* with scientific springing and larger shock absorbers fairly skins you over rough spots. Husky hydraulic brakes give you smooth, dependable, equalized stopping power.

 WON'T YOU visit your Lincoln dealer soon and arrange for a demonstration of the new 1941 Lincoln-Zephyr? Learn for yourself the pleasure of owning a car that gives you *more fun per gallon*—to look at, to ride in, to drive!

LINCOLN MOTOR CAR DIVISION, FORD MOTOR COMPANY
*Builders also of the Lincoln-Continental, Cabriolet and Coupe;
 the Lincoln-Custom, Sedan and Limousine.*

