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TWENTY-FOUR PAGES OF ILLUSTRATIONS IN FULL COLOR

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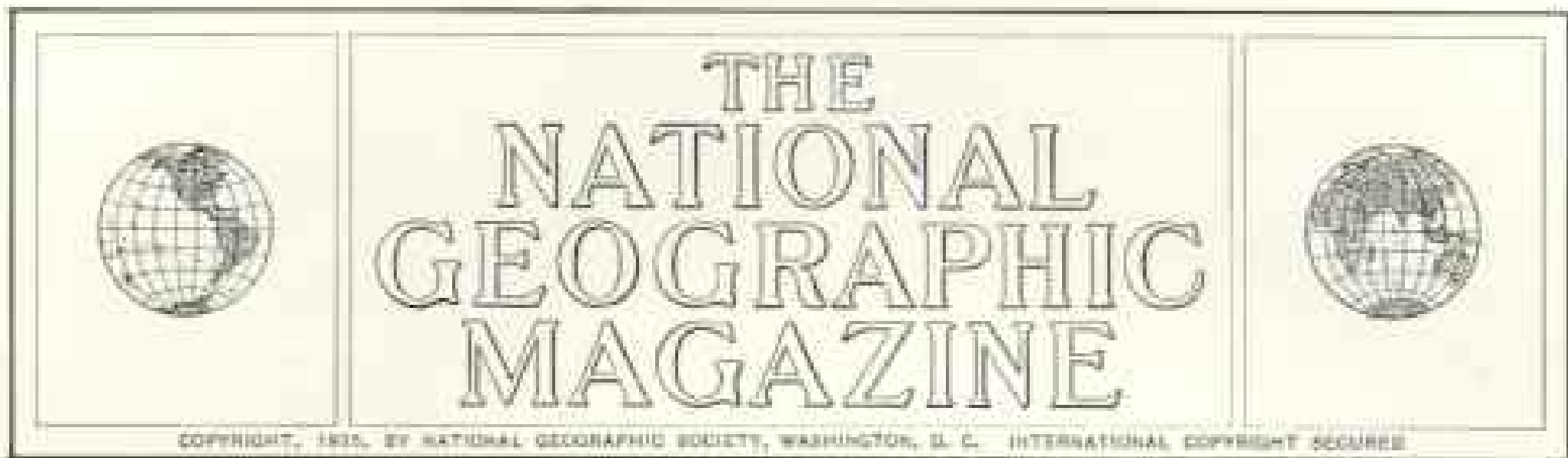
With 22 Illustrations

SIR HARRY LUKE

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PRESERVING ANCIENT AMERICA'S FINEST SCULPTURES

BY J. ALDEN MASON

Curator of the American Section and Director of the First and Second Eldridge R. Johnson Middle American Expeditions of the University Museum, Philadelphia

Photographs from The Expedition

THE archeologist of fiction is an elderly, bespectacled, absent-minded, impractical old fellow with a nose and a mind for nothing but the mummies he digs up.

Actually, the archeologist must be prepared, as necessity demands, to assume the rôles of diplomat, interpreter, timekeeper, bookkeeper, overseer, editor, cook, surveyor, draftsman, photographer, mule driver, shovel wielder, paymaster, carpenter, plaster worker, mechanic, or any other job that is required at the moment.

Also, no archeologist is immune to the joy of the experience of finding something unique or beautiful. Not even the most scientifically minded of us—those who insist with most fervor that archeological objects are of value only for the story that they reveal—can submerge the pleasure he feels when his trowel and brush disclose some object of intrinsic interest or beauty.

CITIES BURIED IN JUNGLE GROWTH

Therefore, the discovery of some of the finest known pre-Columbian American sculptures, and the moving of these and other larger monuments from the ruins of an old Maya city deep in the forests of Guatemala to permanent safety in museums in Philadelphia and in Guatemala City, afforded the members of the expedition considerable pleasure.

When, in 1930, the University Museum of Philadelphia decided to begin excavations in the Maya region, which comprises Guatemala, southern Mexico, Yucatán, British Honduras, and northern Honduras, the possibility of bringing out some of the large monuments was one of the reasons why the site of Piedras Negras was chosen as the place for work (see map, page 543).

There are many Maya cities, and new ones are being discovered almost every year. But most of them are buried deep in the tropical forests, far from any routes of travel and from navigable streams.

Piedras Negras, however, lies only a few miles above the head of navigation on the Usumacinta, a large river that drains much of Guatemala and forms, in its middle course, the boundary between Mexico and Guatemala. All that was necessary was to build a road about 30 miles long around the impassable falls and rapids that intervene, and out would come the monuments. Theoretically, it was a "cinch."

Hitherto, no large Maya sculptures had been removed far from their original sites. Moreover, the monuments of Piedras Negras had been, since their discovery by Teobert Maler in 1895, recognized as probably the most artistic in the entire Maya area. That means the finest sculptures of pre-Columbian America.

The Maya were remarkably busy builders. Apparently they were continually en-



IMAGINE THE DISCOVERER'S THRILL WHEN HE UNEARTHED THIS GROTESQUE MASK!

Digging on one of the pyramids revealed several such gigantic stucco faces that adorned terraced walls. Falling debris formed a protective covering which preserved them through the centuries.

larging and altering their buildings. They not only added wings, chambers, and other features, but they raised new structures by covering over and burying earlier ones.

AMONG AMERICA'S EARLIEST MASONS

This practice of the Maya was a boon to the archeologist, because the masonry of the buried structures is well preserved and there is no question which of the structures is the earlier. Thus, the development of the art of architecture can be studied readily. The Maya were among the earliest masons in America, if, indeed, the art of masonry architecture in America was not invented by them, and Piedras Negras was one of their earliest cities.

Apart from architecture, one fruitful source of knowledge is always the burials. The bones reveal the physical type of the people, and the objects deposited with the dead are usually unbroken.

Some ten groups of human remains have been found under a surprisingly large number of differing conditions. They range from unadorned, isolated bones, which may be discarded remains of human sacrifices, to the body of an important personage, probably a noble or priest, laid out in a

vaulted tomb in a prominent place. With him were the bodies of two children, possibly sacrificed, and his ornaments of jade, hematite, shell, and pottery.

Not a piece of gold has been found, corroborating the general opinion that this metal was unknown to the early Maya.

SOARING OVER ANCIENT MAYA RUINS

Seven trips so far have been made to Piedras Negras. I first made a reconnaissance trip there in the spring of 1930. Later in the same year, in December, I paid a second flying visit to the region.

A flying visit it was indeed, for we soared over the region in a Sikorsky amphibian. But by plane we could not even find Piedras Negras! We could not see the more distant ruins at Yaxchilan, which had not then been cleared, though we knew from the contour of the river that we were over them. Nothing but the rolling mantle of green, the tops of the great trees of the forests, could be discerned below us.

But what a difference in time and in comfort! In less than four hours of flying time, we flew from Ciudad Carmen, on the Gulf of Mexico, to Yaxchilan and back by



A DROVE OF PACK MULES RETURNS TO CAMP WITH SUPPLIES

Swarms of bloodsucking ticks infesting the underbrush made some of these trips from Tenosique, Mexico, through the muddy jungle very disagreeable. The men encountered few snakes, but those seen were a variety of *fer-de-lance*, an extremely venomous reptile.

way of Palenque. By land and water this would have been a two weeks' trip, even if all arrangements had been made beforehand and no time lost waiting for boats or mules—two lazy days ascending the river on a slow motorboat, two wearisome days plodding through mud on a mule to reach Piedras Negras, and two more of the same misery to Yaxchilan.

SUMMER RAINS HALT DIGGING

Each year the small party conducting excavations at Piedras Negras reached the site in March and worked until about the end of June, when the summer rains become too heavy to permit further digging.

Entering Mexico at the banana-shipping port of Alvaro Obregón, formerly known as Frontera, we took passage on one of the few river steamers running up the Usumacinta River to Tenosique.

Now a large boat of the old Mississippi stern-wheel type makes the slow trip fairly comfortable, but for the first two years the small, private motorboats then running had to be used. These made infrequent trips and travelers had to take their chances of getting one of the larger boats.

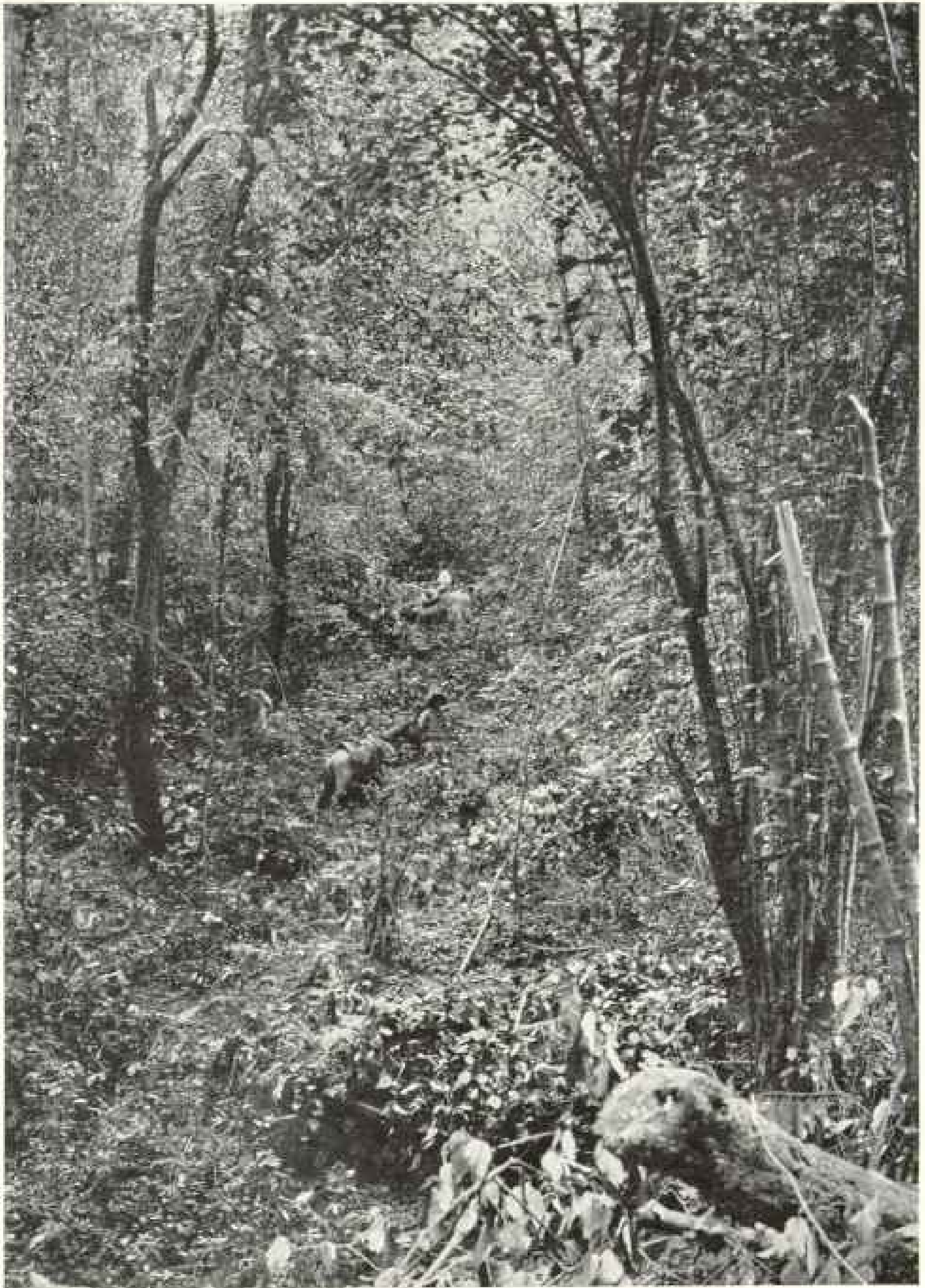
Only one of them had bunks for passengers; on the others, passengers had to seek a clear space in which to swing a hammock, and on the smallest ones the travelers, generally of the poorer class, lay on deck between tethered chickens and barrels of oil. The captain stopped whenever signaled from shore to barter with a native for a dozen eggs, or to take an order for a bottle of quinine pills or two yards of cloth to be delivered on the next trip.

Up we wound, slowly, through one of the meandering mouths of the river. Above the low banks only flat pasture land could be seen, but when viewed from the air the entire country is revealed to be an enormous delta, with lagoons, islands, oxbow bends, and old river channels—apparently more water than land.

The Usumacinta and Grijalva Rivers join a little above the seaport of Alvaro Obregón, and together form one of the largest river systems in this part of North America.

TREES ALIVE WITH BIRDS

The trees along the river bank were alive with aquatic birds, mainly herons,



THROUGH 30 MILES OF JUNGLE, NATIVES CUT THIS ROAD TO HAUL THE MONUMENTS AROUND IMPASSABLE RAPIDS AND FALLS

The trail also made it easier to ride horseback between the ruins and Tenosique, the nearest town. Most of the way, it was only necessary to clear a path through the foliage, but in some places grading had to be done and low bridges built. The green tropical forest is silent, monotonous. Scarcely a sound is heard, save the noise made by travelers and their mules as they crash through the brush, until a flock of parrots or macaws flies overhead, or a band of howler monkeys invades the neighborhood.

among which the beautiful white egret seemed predominant. At nightfall undulating lines of slowly flapping pelicans passed overhead. The region is an ornithologist's paradise.

At Chablé is one of the typical old *fincas* of this region, a patriarchal unit, with its little village, school, store, tradesmen, and church.

Not far above Chablé is the village of Emiliano Zapata, formerly named Montecristo, for many of the towns in Mexico, and especially in Tabasco, have been rechristened and given the names of heroes of the recent revolutionary movements.

Emiliano Zapata is the point of departure for the famous ruins of Palenque, a hard day's ride across the pastures, unless both automobile and road are in condition, an unusual combination of circumstances.

Tenosique, our base of supplies and mail address, is a small town near the head of navigation of the Usumacinta, though boats may pass a few leagues above it. From the village is visible the line of hills beyond which lies Piedras Negras. Here we purchased more supplies, engaged riding and pack mules and muleteers, and in a few days were off for the hills and forests.

Nowadays one may travel by dugout canoe with outboard motor to the head of small-boat navigation, and go on from there over a road we built through the forest, making the trip to the ruins in one day; but the first year we had to cover the distance from Tenosique to Piedras Negras entirely by land on muleback.

The rainy season was not yet over, and for most of the first day the mules waded through mud. All the tenderfeet were tired, sore, and muddy when the halfway camp was reached.

These winding trails through the dense forest are used mainly by *chicleros*, natives who gather chicle sap for American gum chewers, and by mule trains taking supplies to lumber camps.

RUINS DISCOVERED BY HUMBLE CHICLE HUNTERS

The humble, illiterate *chiclero* has done more for Maya archeology than the erudite scientist, for most of the many ruins now known have been discovered by him while ranging the vast forest for the *chicotapote* tree, which yields the chicle sap.

Tiny ticks infest the underbrush and swarm by thousands on men and mules

alike, making life generally miserable. Wayside camps composed of huts are leagues apart.

The forest trails are narrow lines of hoofs and footprints. In a little valley there may be only one trail, but over a broad, flat stretch of forest there may be dozens of them, branching and uniting again farther on. The newcomer is fearful of being lost, but all paths lead to the same place.

Each member of a party and each pack mule may be on a different path, not far separated, yet invisible in the dense forest, and one rides along, much of the time, seeing nothing, but hearing in front, behind, and to the sides the crash of mules struggling through the bush, and the cries and lusty curses of the muleteers as they urge the animals on or strain at the ropes of one that has loosened its pack.

These are the only noises one hears; for, as is remarked by every traveler, the popular concept of this tropical forest as full of weird cries of birds and colors of exotic plants is wrong. The jungle is silent and monotonous. Almost the only sounds are those of travelers. As to color, one finds a monochrome of shades of green, the only flowers occasional orchids high in the trees.

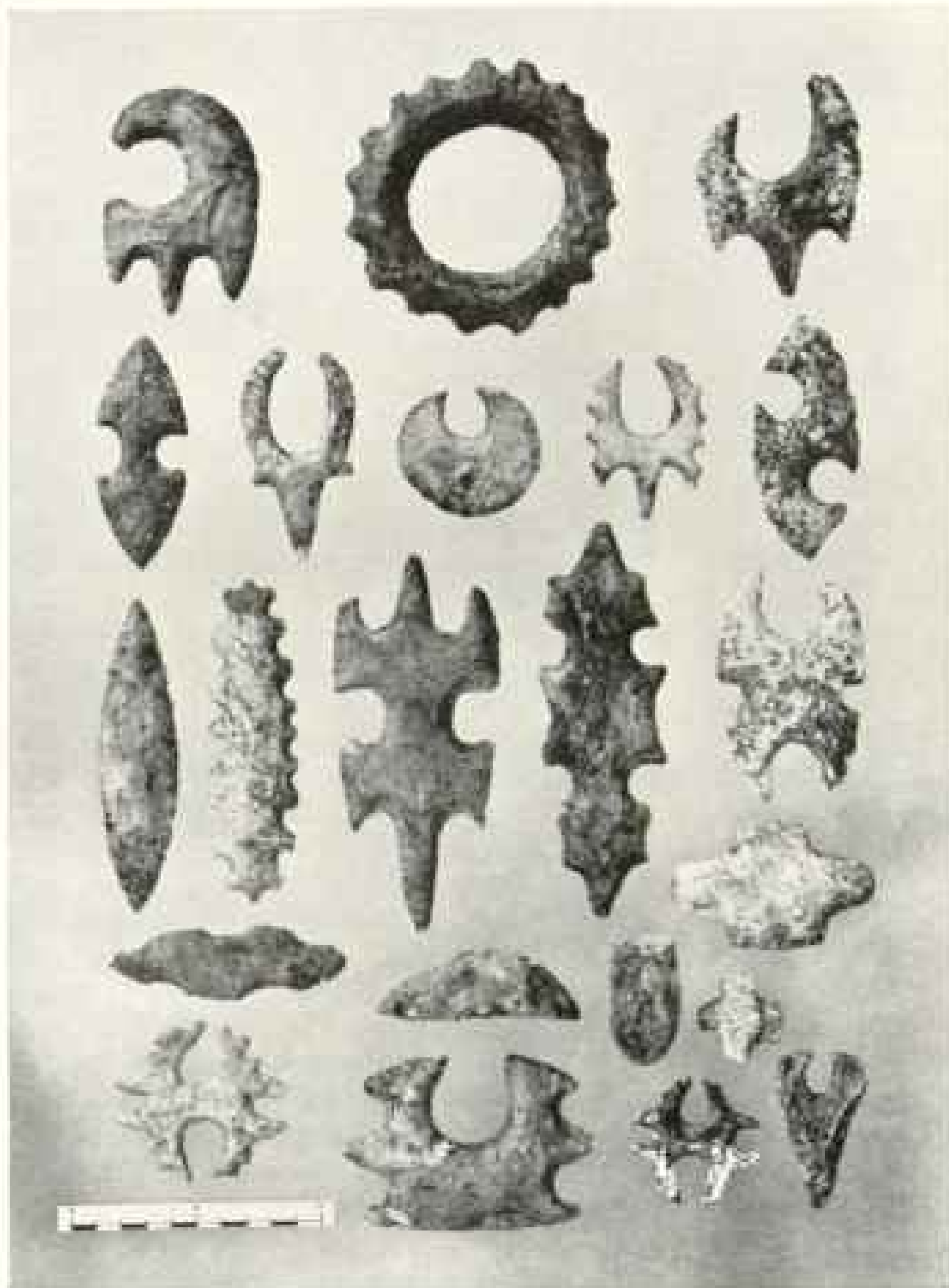
The trails are extremely winding, for the muleteer never cuts away a tree fallen on the trail; he crashes through the woods around it to make a new path. The mules seem to take a fiendish delight in scraping the rider's legs against all the trees on the trail, especially a species of palm covered with long, sharp spines.

WHERE MAYA SPLENDOR FLOURISHED

Where once the cultivated fields of the Maya dotted the land, now is the deep forest, bare of all population. At intervals of about a day's journey, tiny settlements exist on the banks of the river, but inland all is uninhabited.

In the forests farther upstream, however, live the wild Lacandon Indians, primitive, though speaking a language closely related to Maya. Whether they were always thus or have become degraded, possibly even from the stage of the builders of Piedras Negras, is not known (see page 547).

Another day on such a trail, winding through the forest to the tune of the muleteers' shouts, and we were at Piedras Negras, having already crossed the unmarked boundary from Mexico into Guatemala.



THE MAYA BURIED SUCH TREASURES BENEATH TEMPLE FLOORS

Excavators found odd-shaped objects of flint, obsidian, jade, bone, and shell in ceremonial caches, usually in pottery vessels. Their use is unknown. Possibly they represent animals, insects, or other natural objects.

And what a place for a camp! Most Maya ruins are deep in the jungle, often without any water supply at present, and muddy water, too precious to be used for bathing, must be brought in by mules. But here the deep, turbulent Usumacinta flowed at our feet.

The main building of the camp, overlooking the river, was almost completed, and in the next few weeks several smaller dwelling houses, a storehouse, workmen's quarters, photographic darkroom, and other buildings were erected.

Not a nail or piece of metal was used in their construction, the beams being tied together with withes of vines, the roofs thatched with palm leaves, the walls made

of split reeds or poles. Delightful in the later warm, dry days — but this was early March!

There is no place so clammy, cold, and miserable as a camp in the Tropics just before daybreak, with a "norther" driving the rain through the interstices in the walls, everything damp, and no fire. Our cots and blankets had not yet arrived, and we shivered through the nights in hammocks, with one thin blanket apiece. How we welcomed our equipment when it finally came two weeks later!

An old clearing existed at the point where the camp was placed, and no more felling of trees had to be done. When cutting the forest for a camp it is dangerous to leave even one tree for shade, for the trees grow so close together that their roots are not widely spread or strong, and a solitary tree left in a clearing is very likely to blow down and wreck the houses. On all sides the dense

timber rose and across the river loomed the wooded hills of Chiapas, in Mexico.

Occasionally at night the cries of troops of howler monkeys annoyed us, and sometimes by day flocks of green parrots clamored noisily or pairs of macaws cried raucously overhead. The immense-billed toucans were always sources of amusement.

After the last of the northers had passed, we spent several very comfortable months at our camp. When no vital errors have been made in the ordering of supplies, life in such a camp is so pleasant that one does not realize that it is an oasis in a desert. And I use the word "desert" advisedly. The true meaning of the word is a deserted or uninhabited region—the connotation of

aridity and lack of vegetation is not inherent. The Spanish use the word in its proper sense; to them this region is a *desierto*, an uninhabited forest.

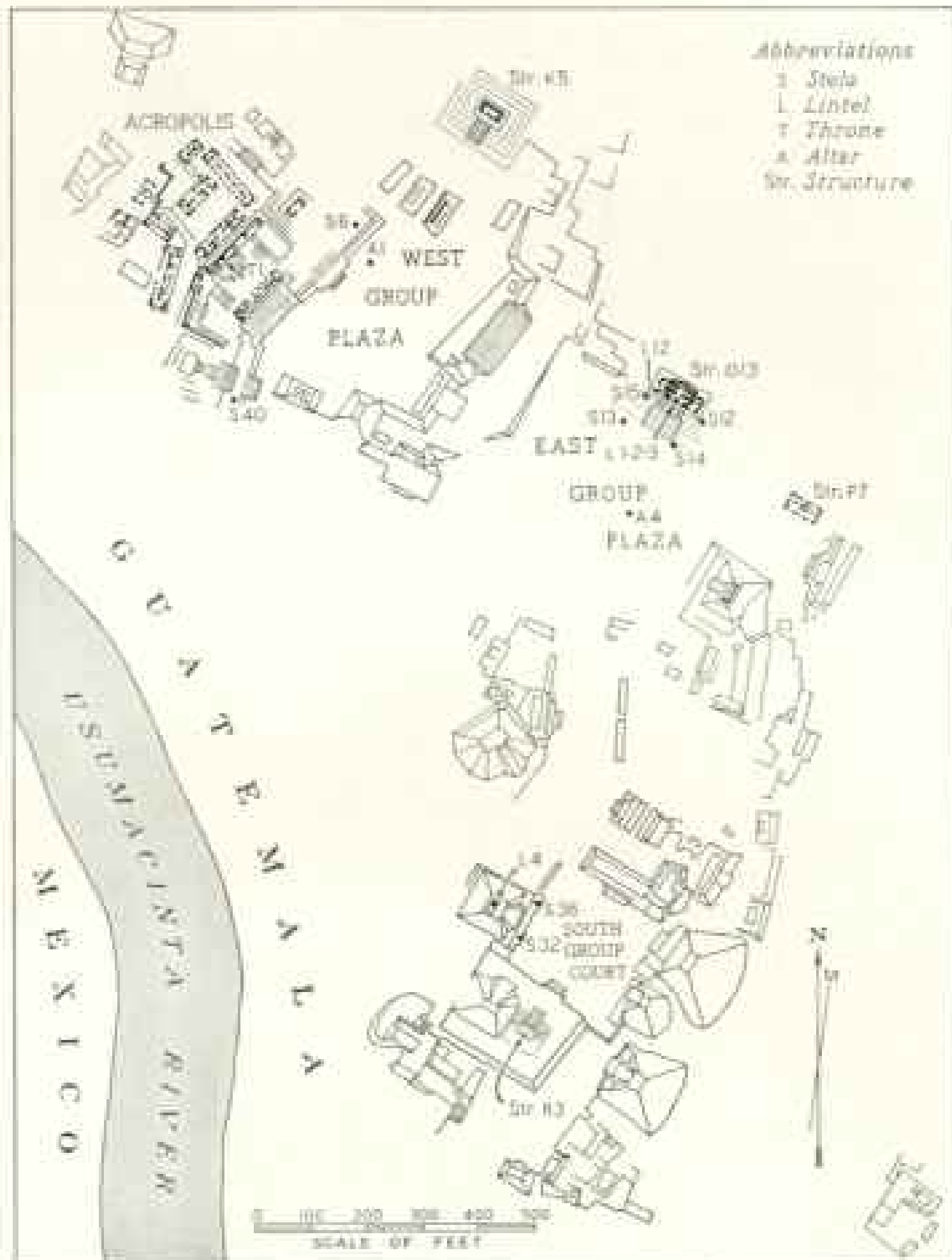
If a tenderfoot, without a sense of direction or knowledge of the *bejuco de agua*, the thick vine which, when cut properly, will yield a pint of water to the thirsty traveler, were to wander out of sight of the camp, he might perish miserably of thirst, hunger, and the torments of hundreds of bloodsucking insects.

TREES THAT CAN BLIND A MAN

Fortunately, no mishap of that kind marred our stay, for we subscribe to Stefansson's dictum that for an explorer to have an adventure is evidence of carelessness or lack of preparation. This means not only careful ordering of supplies, but heeding the instruction of the natives. Here, for instance, we had to become familiar with the *chichem* tree, the sap of which is blinding. And we had to cut numbers of these trees.

Our food consisted mainly of canned goods, for today almost everything can be obtained in that form. Corn and beans, the staple food of the workmen, were grown in the neighborhood, and coffee was brought down from the highlands.

Fresh meat and most kinds of fresh fruit were scarce; although tropical fruits such as bananas and oranges grow luxuriantly when planted, there were none within easy distance.



Drawn by Ralph E. McAleer after Fred P. Parris
PIEDRAS NEGRAS RESTS IN A CRESCENT ALONG THE
USUMACINTA

For centuries men followed trails across this hilly area without noticing the jungle-swallowed Maya city. Not until 1895 did archeologists discover the ruins. On a hill at the northern tip stands the Acropolis. Letters and numbers on the map indicate where various monuments were found (see table, upper right). No less than 25 other large Maya cities, including Palenque, Chichen Itza, and Copan, lie within 300 miles of this ruin.

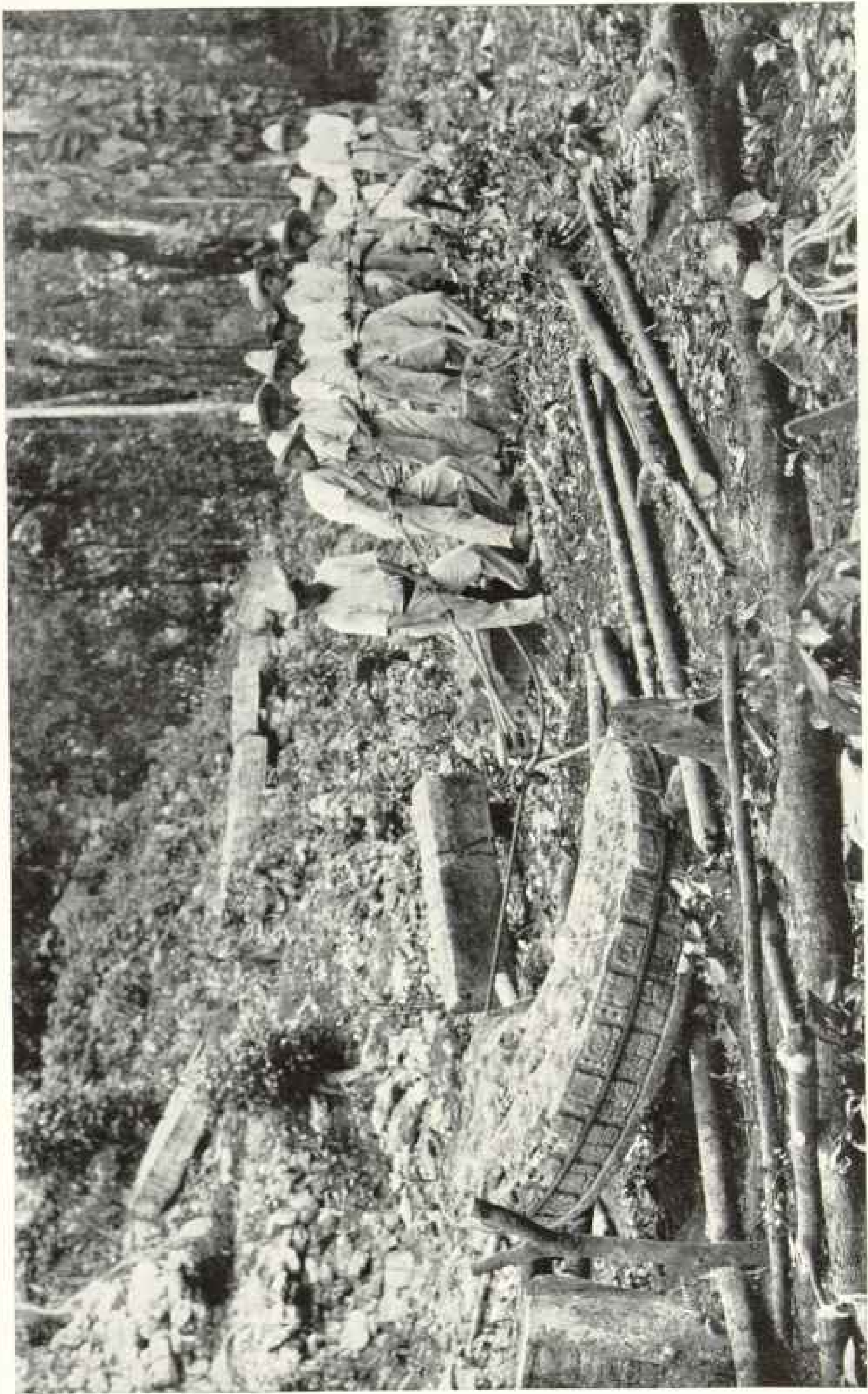
The forest affords some game and the river some fish, but we were too busy to hunt or go fishing. However, whenever desirable, we gave one of our men a shotgun and several shells with instructions to bring back a wild turkey, a curassow, or a peccary.

Our best hunter was Lorenzo, a Yaqui Indian from Sonora, in the far northwest of Mexico. Doubtless he had been captured as a young man and taken, in virtual slavery, to Yucatán to work in the fields of henequen, as this was the method



FIRE SWEEPED THIS CAMP, DESTROYED THE PRINCIPAL BUILDINGS, AND NEARLY TERMINATED THE 1932 EXPEDITION

Fortunately, sufficient food and tools were saved to enable the archeologists to continue their excavations (see text, page 347). Corner posts of the houses were made of a termite-resistant wood, the walls of split bamboo, and the roofs of palm thatch. Left to right are the Director's house, the storehouse, the home of the Guatemalan inspector, the bachelors' quarters, and the main building. The three nearest buildings were burned.



A MASSIVE ROUND ALTAR BEGINS ITS JOURNEY TO A MUSEUM

Although this altar has not been exported, it was moved with that intention. A pang of men pulled it into a clearing to prepare it for transport. On teams, traveling by night to avoid the intense heat of the day, hauled all the crated monuments from camp to the river. There men loaded the stones on rafts which floated them down to the seaport, Alvaro Obregón. Eight of the 16 major sculptures which the expedition took from Piedras Negras went on loan to the University of Pennsylvania Museum; the others to the National Museum of Guatemala.



AN EXPEDITION GUIDE AND MULE DRIVER

Rosendo Esparza has conducted every excavating party that has visited Piedras Negras in recent years. There were few well-trained and disciplined men among the natives, but they guided the archeologists to waterholes and camping spots.

of pacifying the unconquerable Yaquis during the latter years of the Diaz regime.

Several times we bought and killed a steer, mainly for the men.

Two seasons I attempted growing a vegetable garden, but it was a miserable failure both times. Possibly the varieties of seeds tried, intended for a temperate climate, were not suitable for the Tropics; predatory insects also accounted for much damage. During the dry season it took most of one man's time to bring water from the river for the garden, and even at that the yield was small and poor.

Mosquitoes caused us very little trouble in camp, though in some places, such as Tenosique, they make life miserable. The ticks also bothered us little after the first few days when all those along the trails had been dislodged.

Possibly the most annoying insect was an immense beetle which came hurtling through the door at night when we were reading or writing, and struck the lamp or any object in its way with a thud. Every morning the floor was littered with their remains, mostly eaten by ants. The posts of the houses were, of course, made of wood selected by the natives as being proof against termites, or our houses would have fallen upon us in a few weeks.

Although we were working in Guatemala and employed all Guatemalans who applied for work, most of our workmen came from Tenosique, the nearest town, in Mexico. The usual industries of the country, cutting mahogany and gathering chicle, were both in the doldrums, and we were the only organization working in the neighborhood.

The men had a hut in which they slung their hammocks. How the poor fellows endured the chilly northers of the first few weeks without a fire, some of them with no blankets, I cannot see, but they are accustomed to such a life. They had their own kitchen and cooks and we took care to feed and pay them above the average of lumber camps. We found them, as a whole, always pleasant, honest, and good workers.

Apart from cooks, camp helpers, carpenters, surveyor's helpers, and such special assistants, we generally had two gangs of ten men each who excavated with mattocks and shovels. Many of them had malaria or other tropical diseases and none was husky, but nevertheless, after the hottest day's work, they were generally ready for a game of "beis-bol" with home-made equipment.

The builders here, as usual in the Maya region, enlarged their pyramids and temples several times by accretion. They would cover up the older, lower, and smaller pyramid, and sometimes the entire temple on the top, with a layer of broken limestone rocks, and upon this they would put another stucco surface and a temple. In uncovering the lower structures, holes, trenches, and tunnels have to be made in the unstable rubble. This work is dangerous, but so far there have been no serious injuries.

In April, 1932, a disastrous fire at the camp came near putting an end to all operations for that year. We were busy at our several excavations near noon one dry, hot morning when lusty shouts from the mess-boy of the camp startled us into the realization that something serious had occurred.

The smoke and the crackle of the flames as we neared the camp informed us that it was no false alarm. We had had a long dry spell and the thatched roofs were like tinder. By the time we arrived the buildings that had caught fire were completely gone.

Luckily for us, the storehouse with the food was still intact, and all hands set to work carrying out the boxes of food in case a stray spark should ignite the roof. A few things hastily thrown out of the houses by the few men and women who were at camp littered the ground.

The explosions of cartridges and shotgun shells continued for a long time, but soon all flames were extinguished, danger of flying sparks ended, and only smoldering embers remained. The food was replaced in the storehouse.

Had the storehouse with its food burned we would have been in a bad way indeed. As there is no food of any kind available in the neighborhood, or between camp and Tenosique, and no riding animals, we would have had to walk to that town, which would probably have taken us two days, and it would have been a famished and footsore party upon arrival.

Fortunately, no one was even scorched, as almost everyone was at work at the excavations.

In spite of the inflammable character of these buildings, fires are rare in native houses, as the cooking is done without stoves, either in charcoal braziers in the houses of the better class, or in low open fires of wood in the poorer ones. We, however, had brought in for the kitchen an iron stove that required a chimney, and a spark had fallen on the roof.

ABANDONED CENTURIES BEFORE COLUMBUS

Practically all the tools and instruments for excavation and recording, being at the time in use, were saved, our food was intact, my field notes were fortunately thrown out of my house with a suitcase, and we were able to carry on. The greatest loss was that of the photographs already taken and the specimens. Excavation ceased for a week while poles, palm leaves, and withes



GARCIA SEEMS TO BE LOST IN STORE CLOTHES

Ordinarily he wears garments of bark, as do other Lacandon Indians who inhabit the deep forests of the middle Usumacinta River. Here he "dresses up" for the Tabasco fair. His tribesmen speak a language related to Maya, but he also knows a little Spanish.

were cut and a new main building and a kitchen erected.

The dated monuments of Piedras Negras cover a period of about three hundred years, somewhere between A. D. 250 and 810. How much earlier the city was occupied we cannot tell, but we believe that it was abandoned, for some unknown reason, shortly after the erection of the last dated monument.

The stuccoed coverings of buildings and pyramids then disintegrated, trees took root on the roofs, tearing the buildings apart,

and in a thousand years the pyramids became reduced to mounds, covered with heavy forest and not differing greatly from the natural hills of the region. Such was the aspect of the city when we first saw it.

Of the people who built the city we know historically nothing; even the native name is unknown. But the glyphs and the art and architecture are very similar to those of the Maya of northern Yucatán at the time of the Spanish Conquest and, the dates being generally older, the many cities of this southern region are ascribed to a so-called "Old Maya Empire."

The Maya were the most highly cultured people of ancient America, but popular theories of Old World origins for them are universally discounted by the best authorities. They are believed to be pure American Indians who developed all phases of their high civilization in America without any influence from outside.

FINDING EARLY AMERICA'S MASTERPIECE

One of the principal objects that we had in mind, apart from general excavations to obtain data on architecture and other information of scientific value, was to search for the third lintel of the temple of one of the principal pyramids.

Around this pyramid and in its temple were erected many of the finest examples of Maya art. Stelae 12, 13, 14, and 15, which stood on the slopes of the pyramid or at its base, are, as a group, and possibly individually, America's most artistic pre-Columbian monuments. All of these have now been exported.

Maler, the discoverer of the ruins, had found these in 1898 and also had found the central lintel of the temple as well as a small fragment of the lintel of one of the flanking doorways. The latter he called Lintel 1, the former Lintel 2. Both have, since his time, been among the most prized possessions of the Peabody Museum at Harvard.

Maler was so certain of the existence of a third lintel that he termed it Lintel 3, though he failed to find it. The search for this lintel was, therefore, one of the desiderata of Maya archeology and one of the first tasks of the expedition in 1931.

The base of the pyramid was first excavated without any success and the slopes were then ascended, the workmen cleaning away all the vegetation and fallen debris.

I was in another part of the diggings

when one of my workmen came with the news that a sculptured stone had been found. It was high up on the pyramid and had evidently crashed down with the fall of the temple, landing face down on the upper terrace and breaking in the fall. Three pieces were in place, a fourth small piece missing.

Even when first seen, fragmentary and covered with dirt, it was recognized to be the finest known specimen of Maya art, which is tantamount to saying the finest known piece of aboriginal American art.

Restored, it measures four feet in length, two feet in width, five inches in thickness, and weighs about five hundred pounds. Visitors to *A Century of Progress*, in Chicago in 1933, saw it in the Maya Temple (see illustration, page 562).

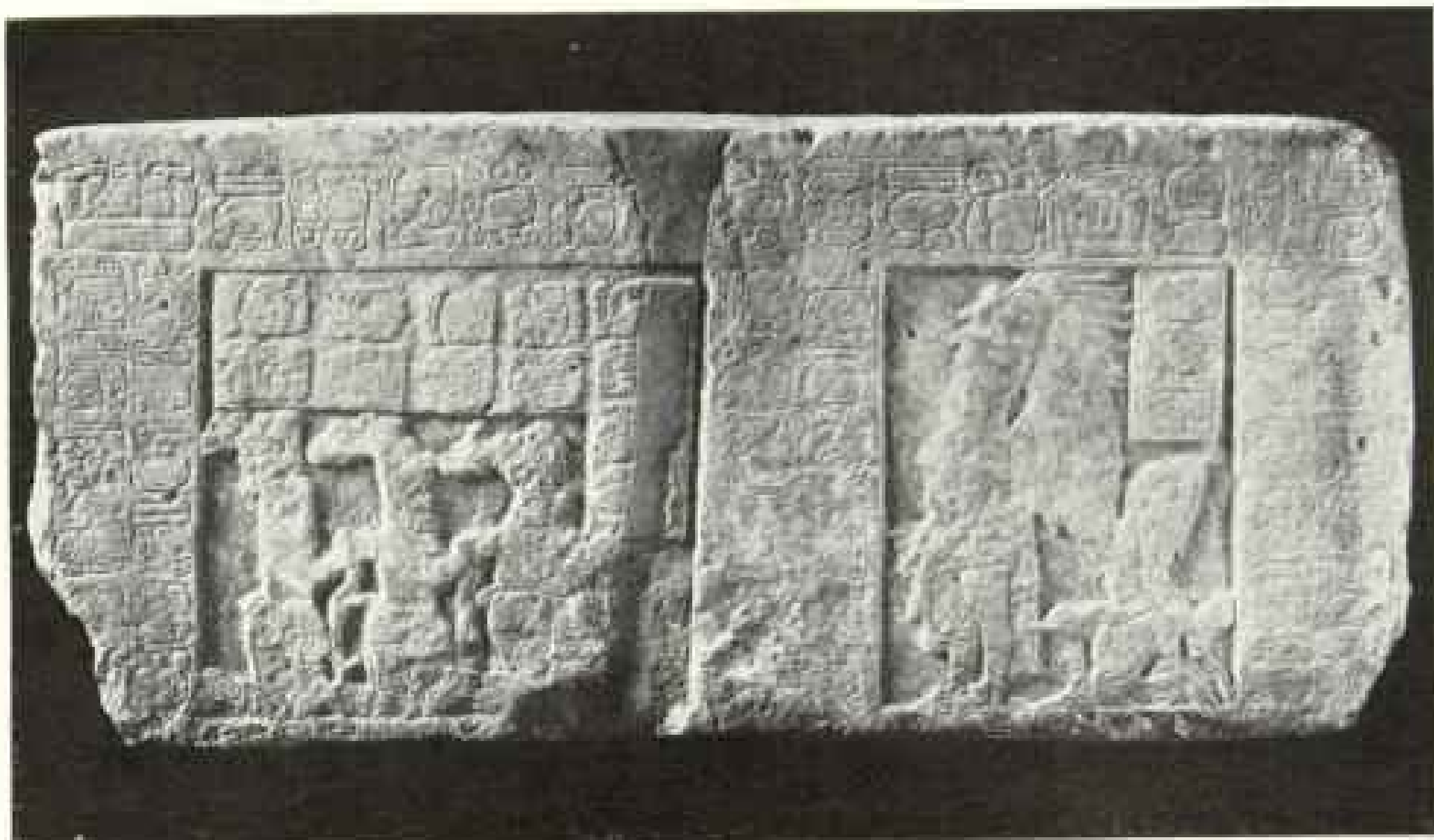
As restored, Lintel 3 shows Maya art at its apogee. Though made by American Indians who are generally ignored in all comprehensive studies of art, it is probably superior to the art of any other primitive people and merits comparison with any of the great schools of art of antiquity.

The composition is very good according to the best canons of modern art, the delineation of the human figure in many varied sizes, physiques, and naturalistic poses is perfect, and small details are excellently done. Much of the high relief is gone, especially the heads and faces, which were probably intentionally mutilated, but enough remains to proclaim it aboriginal America's masterpiece (see Color Plate V).

The scene depicts a Maya ceremony. In the center a figure is seated cross-legged on a throne. Behind him is a quasi-circular jaguar robe, and behind this the carved stone back-screen, or *reredos*, of the throne. The table of the throne is supported on two legs and at the lower edge a tasseled fringe is represented.

On the right are several standing figures in natural poses strongly reminiscent of Greek art; it is uncertain whether three or four figures were carved here. At the left are three adult figures with their arms crossed in the Maya gesture of reverence.

Seven figures engaged in a ceremony are seated cross-legged at the base. Here the preservation is especially good, except for the heads and faces; the postures and bodily proportions are practically perfect and the details of dress and accompanying objects admirable. Even the fingernails are shown in places, and the design of the garments.



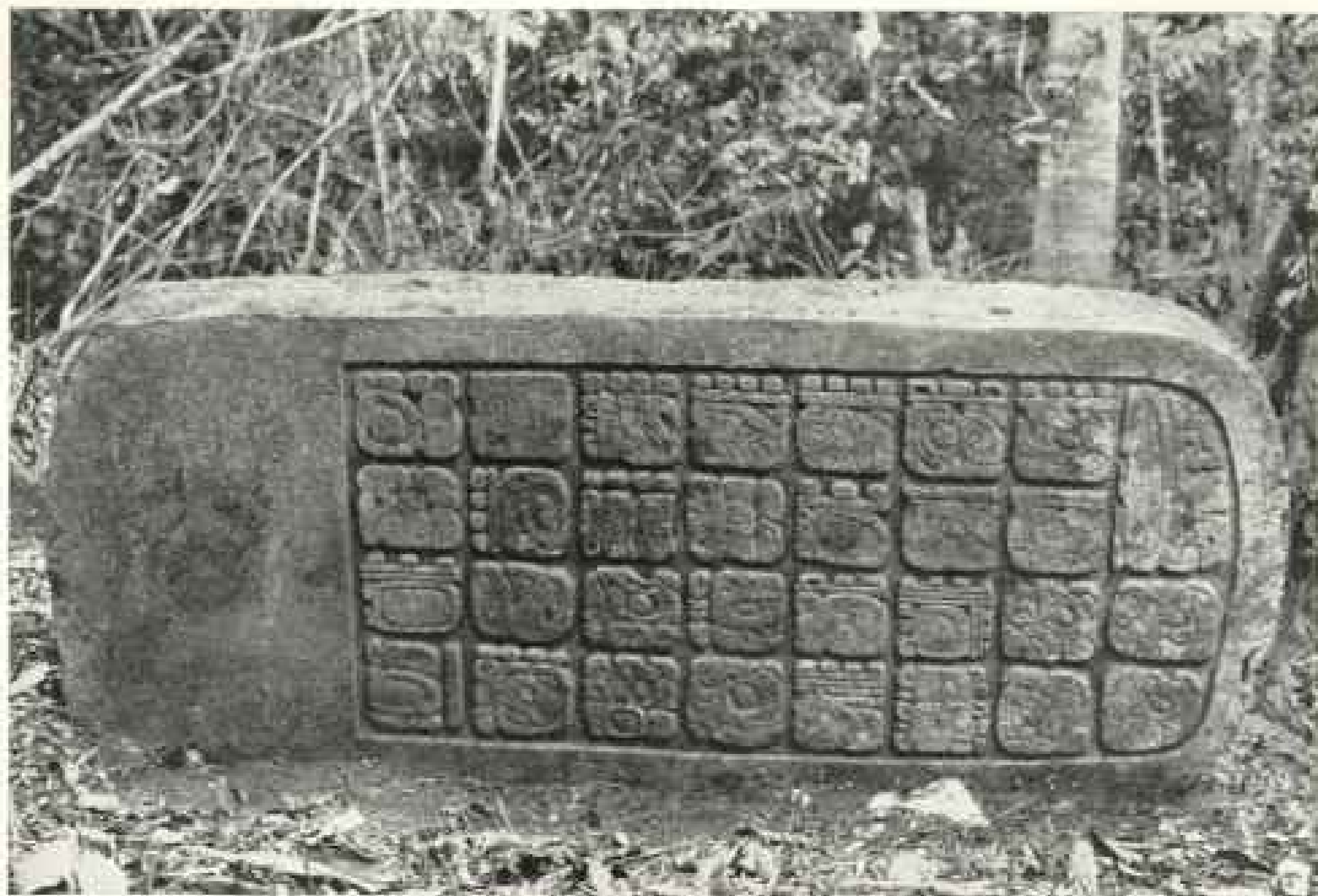
AFTER THIS LINTEL BROKE, THE MAYA USED BOTH PARTS AS BUILDING STONES

Excavators found the right half in the wall of a temple, and the other in the forked roots of an inverted stump where workmen had thrown it inadvertently with debris a year earlier (see text, page 553). The coat of plaster that was smeared over the carvings when for some reason they were obliterated was chipped off by the archeologist. This stone is four feet long and bears the oldest date found so far at Piedras Negras—either A. D. 514 or 254.



A TRENCH RETAINED BY CRIBBING PIECES THE STAIRWAY OF THIS PYRAMID

A workman clears debris from the terraces (right) to show the steplike arrangement. Maya pyramids were foundations for temples rather than tombs for rulers. Though originally faced with plaster, these at Piedras Negras were so covered by forest that they appeared like natural hills.



THE MAYA RECORDED TIME MORE ACCURATELY THAN ANY OTHER ANCIENT PEOPLE

This monument, consisting entirely of a calendar inscription, lies on its side and should be viewed from its left. The glyphs are arranged in pairs. A bar denotes the figure five; a dot, one. The left glyph, just below the large one, reads "nine *haktuns*," periods of 400 years. The inscription to the right of that records "10 *katuns*," periods of 20 years. Other glyphs add or subtract various periods of time, bringing the date of the stone to 9.11.15.0.0., which would be either September 28, A. D. 407, or July 28, A. D. 667, depending upon which of two systems of translation is followed.

Much of the carving was cut free from the background. The heads of the two figures in front of the throne must have been thus carved. The headdress, or mask, of one shows against the throne; this is in the form of a long-billed bird.

The border and much of the background are carved with glyphs, of which there are 158 in many different panels and groups. The meanings of most of these are still unknown, but among them six dates may be deciphered. Several authorities interpret them as indicating that the date of erection was either March 17, 761, or in the year 501.

THE THRONE OF A MAYA RULER

Although Maya sculptures are dated to the exact day, this is of course in the builders' own calendar, and the correlation with our chronology is still a disputed question. It has now narrowed down to a choice between two schools, each proposing a day-for-day correlation, but differing by 260 years.

On the high hill known as the Acropolis the steep slope facing one of the main courts is completely covered by the ruins of buildings, erected often with the roof of a lower one serving as an esplanade in front of the next higher one. No building retains its roof.

In a niche in a magnificent position at the head of a monumental stairway Mr. Satterthwaite, the Assistant Director, in 1932 uncovered fragments of carved stones.

Here for the first time was proof of what we had long suspected—that the sculptures had been intentionally mutilated before the city fell into ruins. Probably it had been captured and sacked by enemies, or rebels, the sculptures defaced, and possibly even the buildings partly destroyed. In view of the massive architecture employed, the latter must have been a tremendous task, for every monument had fallen and most of them had broken, and practically every carved human face was damaged, even though the sculpture might otherwise be well preserved.



THIS BUILDING WAS PROBABLY A MAYA SWEAT BATH!

The structure is better preserved than any of the others at Piedras Negras, although roots of the large tree growing on the roof split the walls. Of the ruined city and its people little is known. Inscriptions probably contain no history, only records of time.

In this case, the carved stones being in a niche, if the roof had fallen upon it the fragments would all have been found together; actually some of them were scattered far and wide, down the staircase and on the slopes to its sides.

Many of the pieces were never found, but enough were recovered to permit the restoration of the sculpture. It was found to be a throne, consisting of a large flat stone table and a carved stone back-screen, or reredos. The table has a smooth flat upper face and a line of glyphs at the front, and is supported at the front by two short legs with glyphs on front and sides. The rear of the table top lay on a ledge with the screen at the back of the ledge (p. 570).

The discovery of this throne supplemented that of Lintel 3 beautifully and interpreted the latter. For the scene portrayed on the lintel is evidently that of a figure seated on just such a throne, with a similar back-screen. The design elements on the two screens are seen to be very similar, and on the lintel, at the edges of the jaguar skin, are two indentations which obviously indicate the two embrasures in the throne screen.

Along the lower edge of the table of the throne are several holes which probably served for the attachment of the tassels seen on the throne in the lintel. Similar holes in the screen may have served for the attachment of the jaguar robe.

The throne's discovery indicated clearly that the scene on the lintel portrays an actual ceremony performed at Piedras Negras on a throne very similar to that found. It could not have been the same throne, for not only are the details and proportions somewhat different, but the date on the throne, as determined by Dr. S. G. Morley,* is 25 years later than that of the erection of the lintel. The date of the throne is probably November 7, 785, but another school would place it in the year 525.

The screen is six feet long, three feet wide, and five inches thick, and probably weighs 1,100 pounds. The table originally had about the same dimensions and weight.

Satterthwaite came up on the temple where I was working one day in 1932, the one which had contained beautiful Lintel 3.

* See "Unearthing America's Ancient History," by Sylvanus Griswold Morley, in the NATIONAL GEOGRAPHIC MAGAZINE, July, 1931.

"Chief," he said, pointing to a large stone which formed a corner of an almost destroyed wall of an inner room, "there's a stone that I've been noticing. It's more massive than the others and seems to have been shaped, while all the others are natural and untooled."

"Right as usual," I replied. "Let's have a look." And we pried the stone out of the wall.

It did seem to have been worked to a regular shape, but bore not a sign of carving. One of the surfaces, however, carried a perfectly smooth, flat, plastered face.

We took out our pocket knives and began to chip the plaster away; beneath it were evidences of carving. We called some of the men, who slung it on a pole and carried it to the camp.

After we had soaked the plaster well, it chipped off more easily and it became obvious that the plaster concealed a carving in low relief, with figures and glyphs. But to our regret it turned out to be the right half of a broken sculpture—and the date is usually, if not always, found at the left!

THE MISSING STONE IS FOUND!

But every day in climbing the pyramid I passed and noticed a certain other stone. It was lodged at the foot of the pyramid in the crotch of the roots of an inverted tree stump, and stood out like a sore thumb. It was high enough so that it had not been covered by all the debris that had been tumbled down the slope from the excavations. I often wondered who had placed it there.

"I remember it well," said one of my workmen. "I remember throwing it out with other rubbish from the room last year and watching it roll down the pyramid and leap up on the roots of that stump."

I think it was the same workman who called my attention to the fact that it resembled the sculptured stone and had the same smooth plastered face. We measured it; the dimensions were the same, and soon it was at the camp and fitted to the right half. In odd moments every day after work we chipped away at the plaster and in the expected place we uncovered the date. It was the earliest so far found at the city, and was interpreted as probably October 17, A. D. 514, though possibly as far back as 254 (see illustration, page 549).

We worked on it no more than enough to reveal this date, so the cleaning and restoration were completed after it arrived

in Philadelphia. It is four feet long, 21 inches wide, nine inches thick, and weighs nearly 800 pounds. It had probably served as a lintel over a doorway in an early temple which was later abandoned and torn down, after the carving had been obliterated by the smooth coat of plaster. The stone was then broken and used in building the wall of the temple which was probably erected 247 years later.

Altogether, 16 major sculptures were exported, half of which are now on loan in the University Museum, Philadelphia, and half in the National Museum of Guatemala. Eight of these are stelae, three lintels, four legs of an altar, and one a throne. Three of these, two lintels and the throne, were discovered by the expedition and have already been described; the others were found by Maler and O. G. Ricketson, Jr.

The massive stelae are of course the most striking of the sculptures. Three of the four sent to Guatemala are unbroken, while all of those in Philadelphia were found in two or more pieces.

Four of the stelae at Piedras Negras show the same subject, a god seated cross-legged in a recessed niche. Since each of these four is accurately dated, they show the improvement in artistic feeling and technical skill during a known space of time. This affords a demonstration probably unique in the history of art.

It would have been most desirable if all four could have been transported and displayed together, but it seemed the better plan to select more varied examples. Two of them were transported, however, the second in the series, Stela 6, to Guatemala, and the fourth, Stela 14, to Philadelphia.

The latter is a beautiful monument, broken in two pieces but now restored, about nine feet six inches high, and more than three tons in weight. The face is slightly mutilated, as is the case with all human faces at Piedras Negras, but the mouth seems to have been partly open. The body also is slightly damaged, but the left hand and wrist were found and replaced. At the base is a figure in low relief holding a feather wand. The date of this is probably August 21, A. D. 800.

Stela 13, now in Philadelphia, shows admirable artistic taste and feeling and has frequently been described in works on art as one of the finest pieces of Maya sculpture, the raised position of one shoulder showing a distinct feeling for foreshortening. The

PORTRAITS OF ANCIENT MAYAS, A PEACE-LOVING PEOPLE

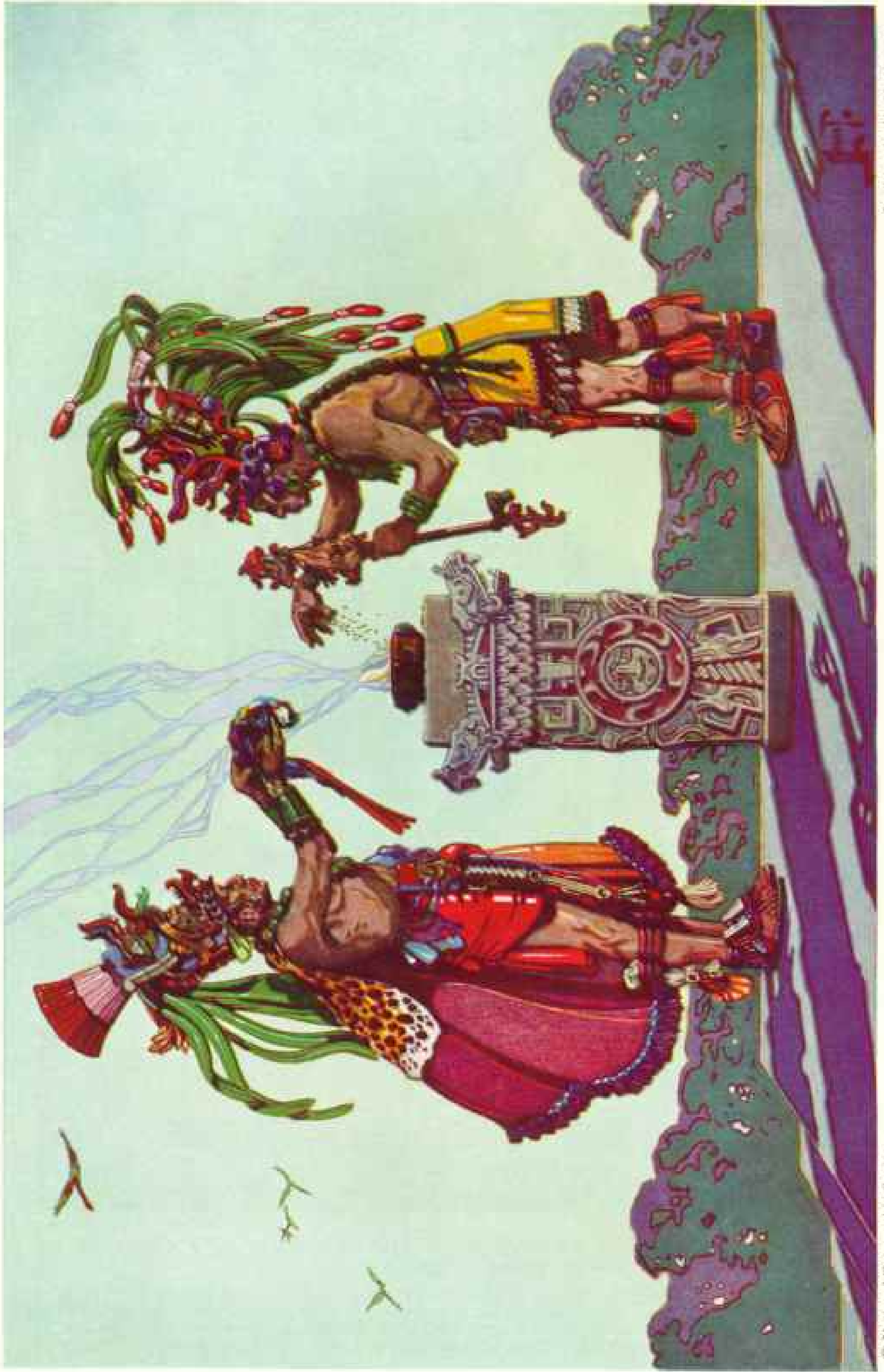


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Painting by H. M. Herget

YUM KAX, GOD OF THE HARVEST, SOWS CORN ON A DEITY WITH A SERPENT
HEADDRESS, REPRESENTING FERTILE FIELDS

The god wears a hat not unlike a bishop's miter, and holds a bag of knitted fabric. This painting is a reproduction of a carved stela, now in the University of Pennsylvania Museum, supposed to have been sculptured by a Maya Indian of Guatemala more than 1,000 years ago. The man's face on the god's back may be a severed human head or a mask of stone or wood.

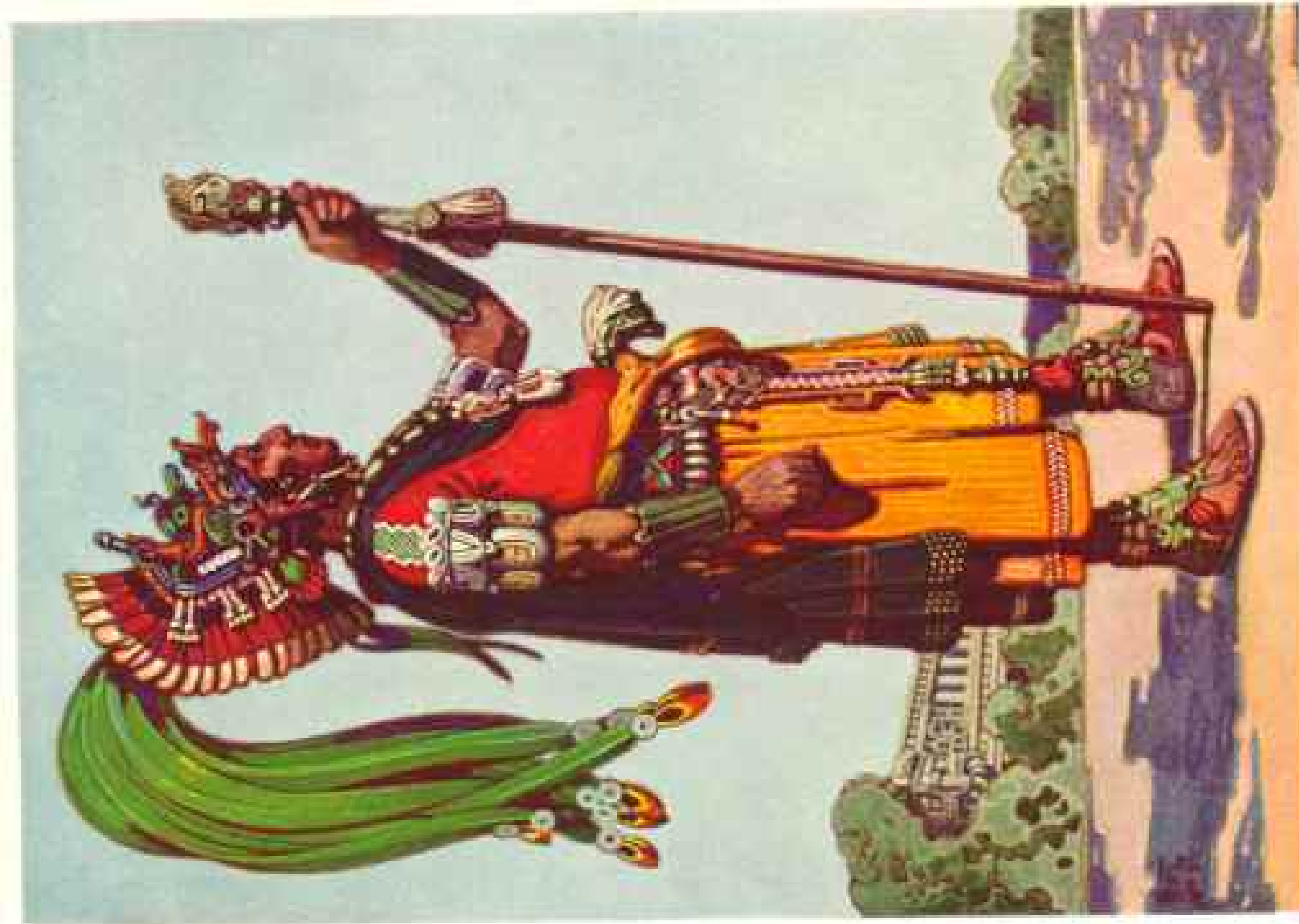


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PRIESTS SACRIFICE A MACAW AT AN ALTAR WHILE OTHER PARROTS SOAR OVERHEAD

Painting by H. M. Herrett

Copal resin burns on the carved stone altar, adorned with the face of the Sun God and with serpents' heads like gargoyles. Both priests wear head-dresses ornamented with long green quetzal feathers and representations of snakes' heads. Usually offerings were animals, fruits, and vegetables.



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ELEGANT AND COLORFUL ATTIRE CLOTHED A PORTLY NOBLE
 Standing before a temple covered with stucco, he displays his Old Empire headress, skirt, and tunic made of heavy cloth. Oliva shells, brought from both the Atlantic and Pacific, adorn his arms, and his staff is probably of hard palm wood.



Paintings by H. M. Huetet

QUETZAL, BIRD AND JAGUAR SUPPLIED HIS RAIMENT

The splendid headgear is a light wood frame supporting gorgeous feathers. Decorating his fur skirt is a grotesque head, probably that of a Maya god. Because he holds an ornate ceremonial bar, he is believed to be a priest. Even sandal tops are of jaguar skin.



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A PENITENT MAYA TORTURES HIMSELF BY DRAWING A BARBED CORD THROUGH HIS TONGUE.

Painting by H. M. Thergot

Here the artist reproduces a famous carved lintel from Yaxochilan, now preserved in the Royal British Museum, London. Self mutilation was a form of devotion among the Mayas. Bloodletting by piercing the ear lobes was common. Worshipers are ascending the steep steps of the pyramidal temple in the background. The bloody cord is kept in the carved stone vase.



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THIS METICULOUS RESTORATION INTERPRETS ONE OF THE FINEST KNOWN EXAMPLES OF MAYA CARVING

The major part is exactly as cut by the ancient sculptors and found on a lintel at Piedras Negras. It is now in the University of Pennsylvania Museum. So faithfully rendered are the figures that they suggest actual portraiture, while the natural poses are reminiscent of Greek art. A priest or chief sits on his throne and gesticulates. Fine cloth garments, fans, pottery, and even the tassels hanging from the throne were realistically carved.

Painting by H. M. Herrick



© National Geographic Society.

Painting by H. M. Herrett

PRISONERS OF WAR, BOUND WITH ROPE, SQUAT BEFORE A MAYA CHIEFTAIN TO LEARN THEIR FATE

Cord letters and lack of headdress attest their degradation. Empty earholes, cicatrized or scarred faces, and strange coiffures set them apart from haughty guards. The higher seated figure, better attired and not bound, is probably the chief of the captured group. The man resting on the block is a ruler of Piedras Negras, or possibly the war chief. Because the Mayas were a peaceful people, such martial scenes are seldom unearthed.



© National Geographic Society

WOMEN NEVER HAVE A PLACE IN MAYA CARVINGS

Therefore archeologists must reconstruct their daily lives from modern Indian women or pottery figurines. So fine were the garments that Spanish conquerors mistook them for silk. Homes, looms, and coiffures were nearly the same then as in Guatemala today.



Paintings by H. M. Herrick

THERE WILL BE TOASTED TORTILLAS FOR DINNER

Corn, still a staple food throughout Mexico, was prepared in the old Maya days much as it is today. Dried kernels were boiled with a little lime and then ground to dough in a stone mortar. Turkeys, bees, and dogs were domesticated by Mexicans before the Spanish Conquest.



© National Geographic Society

Painting by H. M. Hergert

MAYA WARRIORS, CARRYING SHARP OBSIDIAN SWORDS AND ROUND SHIELDS,
MARCHED TO BATTLE IN FULL REGALIA TO FRIGHTEN THEIR FOES

relief is low and shows a human figure sowing corn. It is rather small for a stela, being only six feet in height and weighing about two tons. It was found in three pieces, but is now restored. Naturally it belongs to the great period of Maya art, being dated January 24, A. D. 771 (p. 563).

A SINGLE MONUMENT WEIGHS SIX TONS

Stela 40 (see page 566) is the most massive, well-preserved monument at Piedras Negras. Had it been intact it would have been most difficult to handle with the means at our disposal. Even broken as it was in two nearly equal parts, the upper part was the largest stone transported, weighing more than three tons.

It was no small job to box and load this, even for men accustomed to handling massive mahogany logs. The stiff-leg derrick sank several feet into the soft ground, and the rope broke twice, once letting the box fall from a height of several feet and splitting it, but without injury to the huge stone or to the personnel. Finally, with the help of the tractor and a wire cable, it was loaded on the wagon.

The unbroken monument stood about 15 feet 8 inches and weighed close to six tons. In order to erect it in the Maya Hall of the University Museum, about two feet of the uncarved base, which was originally set in the ground, had to be sawed off, but this piece has of course been kept and can be replaced if the monument is moved to a position with more head clearance.

This stela was not seen by Maler but was discovered by Morley and Ricketson in 1921.* The subject is somewhat similar to that of Stela 13. A figure with a headdress like a bishop's miter kneels on one knee and drops corn upon another figure, possibly that of the Earth Goddess, on the lower portion. The art is less well-developed than that of Stela 13, because of its earlier date, June 5, A. D. 746 (see Color Plate I).

VICTORY SCENE SHOWS ABJECT CAPTIVES

Stela 12 is one of the finest, if not absolutely the best large sculpture in the Maya region (see Color Plate VI). It lay in four irregular pieces, the two lower fragments high up on the pyramid where it originally stood, the two upper pieces at the base of the pyramid where they had fallen.

* See "The Foremost Intellectual Achievement of Ancient America," by Sylvanus Griswold Morley, in the NATIONAL GEOGRAPHIC MAGAZINE for February, 1922.

As restored in the University Museum, it stands 10 feet 4 inches high, and weighs about four tons. On the broken edges some of the sculpture has broken off, but the restoration portrays the scene very well. It shows excellent composition, freedom, foreshortening, and technical skill. The period is about that of Stela 14, the probable date being September 16, A. D. 795.

The sculpture apparently portrays a scene of victory. In the center, on a higher level, is a seated figure whom we may suppose to be the ruler of Piedras Negras. His left hand is resting on his knee, the thigh being shown foreshortened. Flanking him to either side is a standing figure, probably a subchief.

Below him, looking upward, is a seated figure. He wears his necklace and ear and hair ornaments, and is probably the chief of the vanquished group, received with the honors of war. If so, he is probably supplicating for mercy. He may, however, be a warrior of Piedras Negras introducing his captives.

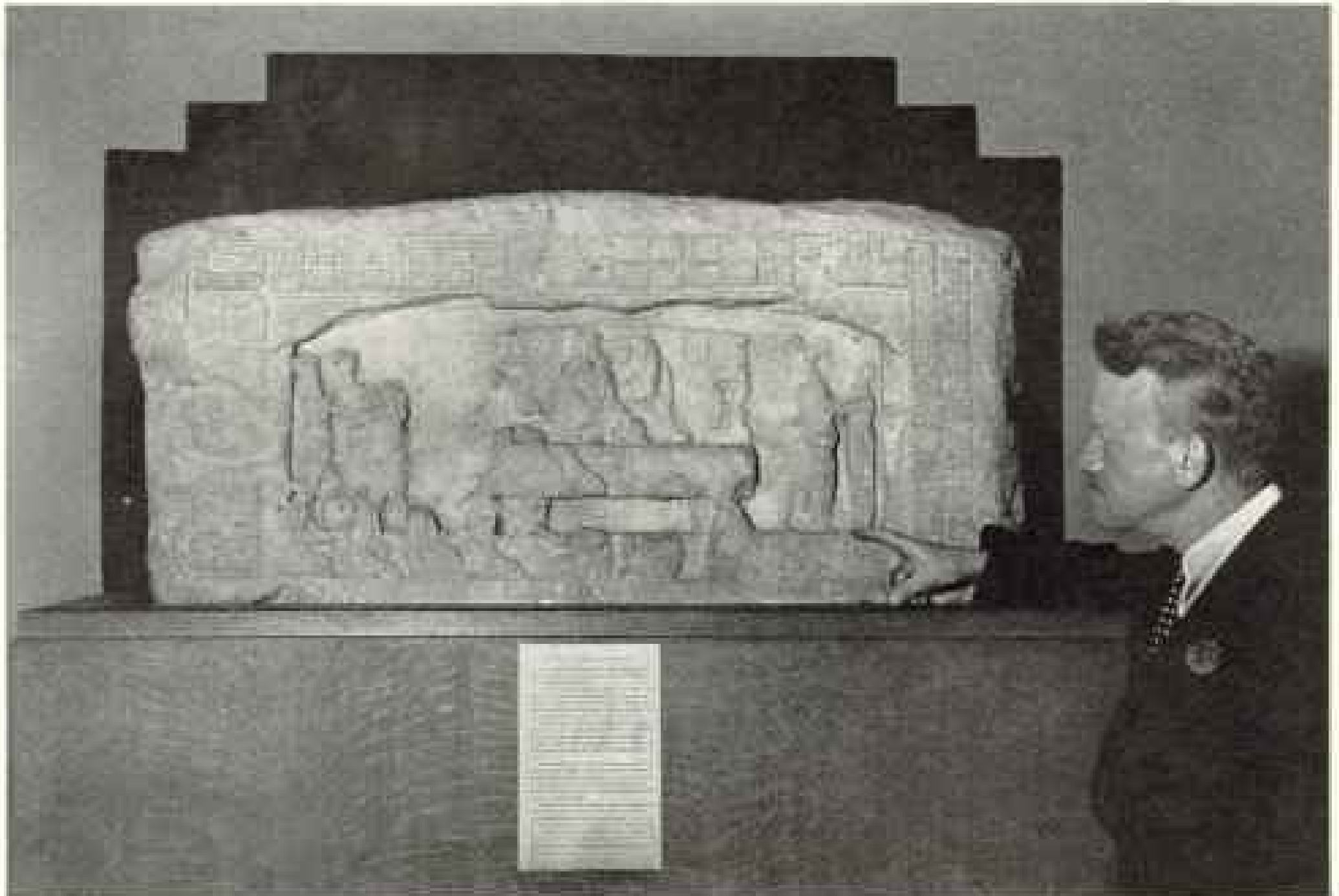
PRISONERS HELD FOR SACRIFICE

Regarding the figures in low relief at the bottom there can be no doubt. They are bound with rope and their necklaces are removed and their ear ornaments torn out in degradation. They are captives and possibly destined for sacrifice. For, while it is believed that human sacrifice was rare in the Old Maya Empire, especially as compared with the holocausts of the later Aztecs, yet a scene on one of the stelae at Piedras Negras indicates that the rite was performed there.

The freedom and naturalness with which these figures are treated is admirable, as well as the perfection of detail. Most of them are gazing up in supplication, but the older man at the right is downcast and dejected. He has no hope; they have played the game and lost; he realizes it.

Each of these figures has carved on him or near him a short line of hieroglyphs which probably identifies him. These may be personal names, but I am inclined to believe, without much evidence, that each captive represents a subjugated group and that the names refer to the conquered village or tribe.

The carving is the more remarkable when it is remembered that the Maya possessed no metal at this period, and these sculptures were made solely with tools of flint,



Photograph by Newton Blakeslee

A MASTERPIECE OF ABORIGINAL AMERICAN ART

The lintel portrays a native ceremony. A priest or chief sits on a throne that resembles the one found by the expedition (see illustration, page 570). Seven figures squat cross-legged before him. Body postures and proportions are perfect. Even fingernails and textile decorations are visible. From this stone, which originally formed part of the sculptured ornamentation of a pyramid temple, the artist painted Color Plate V (see text, page 548).



DECAPITATED CENTURIES AGO, THIS STATUE HAS BEEN PUT TOGETHER AGAIN

Men discovered its head and headdress at the foot of a pyramid in 1899, but not until a generation later did they locate the torso high up on a terrace. The breechcloth, leg bands, and sandals resemble those worn by priests (see Color Plate II). Sculptured in high relief, its elbows undercut, the figure is now in the National Museum at Guatemala City.

obsidian, jade, and other hard stones, and especially with abrasives such as sand.

The task of erecting them was also no mean one, since the Maya possessed neither wheels nor draft animals and some of the stelae weighed more than six tons. Ropes and rollers were probably employed. It is assumed that a mound of earth was erected with a long ramp and a steep side over which the workmen dropped the monument into the cist or hole prepared for it.

GIANT SCULPTURES HAULED THROUGH JUNGLE

As soon as the agreement with the Guatemalan Government was signed, I sent a young engineer whom I had met in Guatemala City, T. Egan-Wyer, to Tenosique to make a preliminary survey for the wagon road for the monuments' transportation. He reported a feasible route and at once began construction of it, so that when we arrived it was well under way.

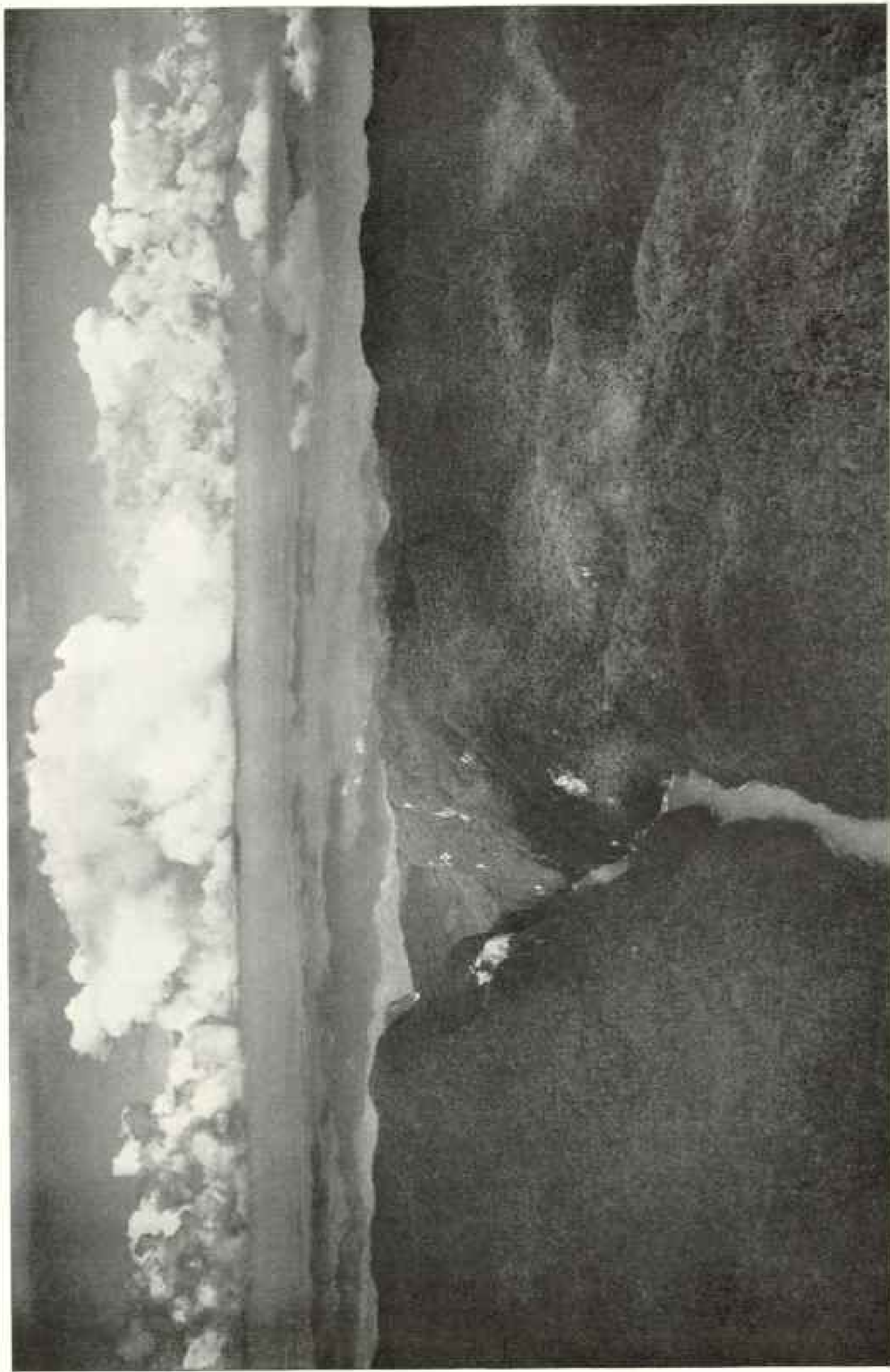
The road in general follows the old mule trail up the river. For the greater part the road-making consisted merely of felling trees and brush for a sufficient width, but in places considerable grading had to be done and some bridges built. Part of this work must be done over again every year, for in the rainy season trees fall across the road, the surface of steep grades is carried away, and all bridges are washed out.



ONLY A SKILLED ARTISAN COULD HAVE PRODUCED SUCH PERSPECTIVE

A god here sows corn. In his left hand he holds a bag, probably of knitted textile, out of which he takes kernels of grain. It is not known of what materials the ornamental necklaces are made, because they are represented only in stone. The sculpture, six feet high, was probably erected January 24, A. D. 771 (see text, page 561).

Our carpenter and his helpers located several huge logs of mahogany and cedar which had been felled by earlier lumbermen but not rolled into the river. Frontier and camp carpenters, they needed little equipment. The giant logs were levered up on a



Photograph by Fairchild Aerial Surveys

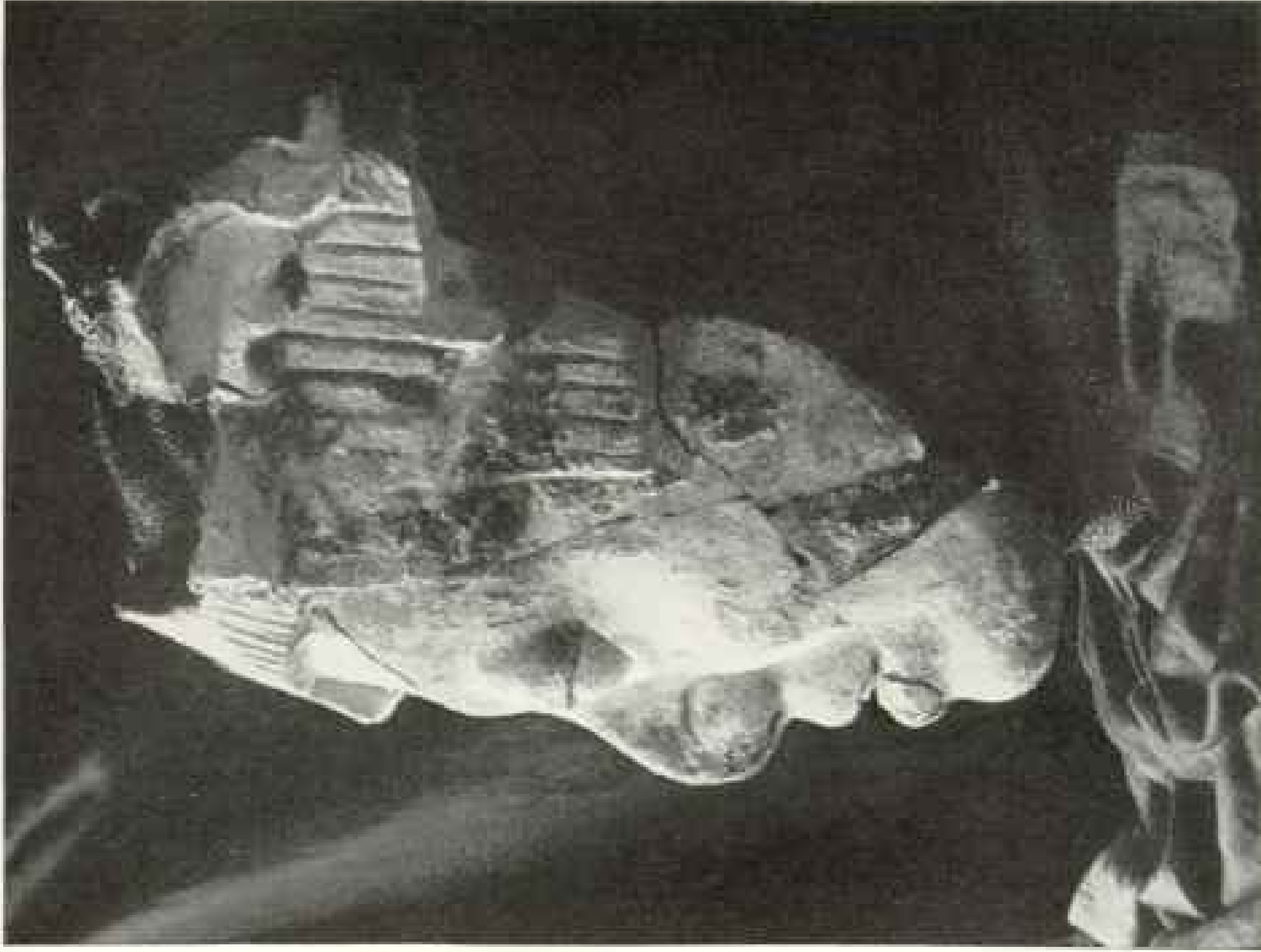
THROUGH A KNIFE-LIKE SLIT IN THE MOUNTAINS ROARS THE USUMACINTA RIVER TO MEANDER THROUGH THE PLAINS TO TABASCO

Few men have seen this "Great Rapid" plunging through the gorge, between abrupt walls thousands of feet high. Flood waters swell the narrow ribbon into a raging torrent. Near the sea the Usumacinta joins with the Grijalva, and together they form one of the largest river systems in this part of North America.



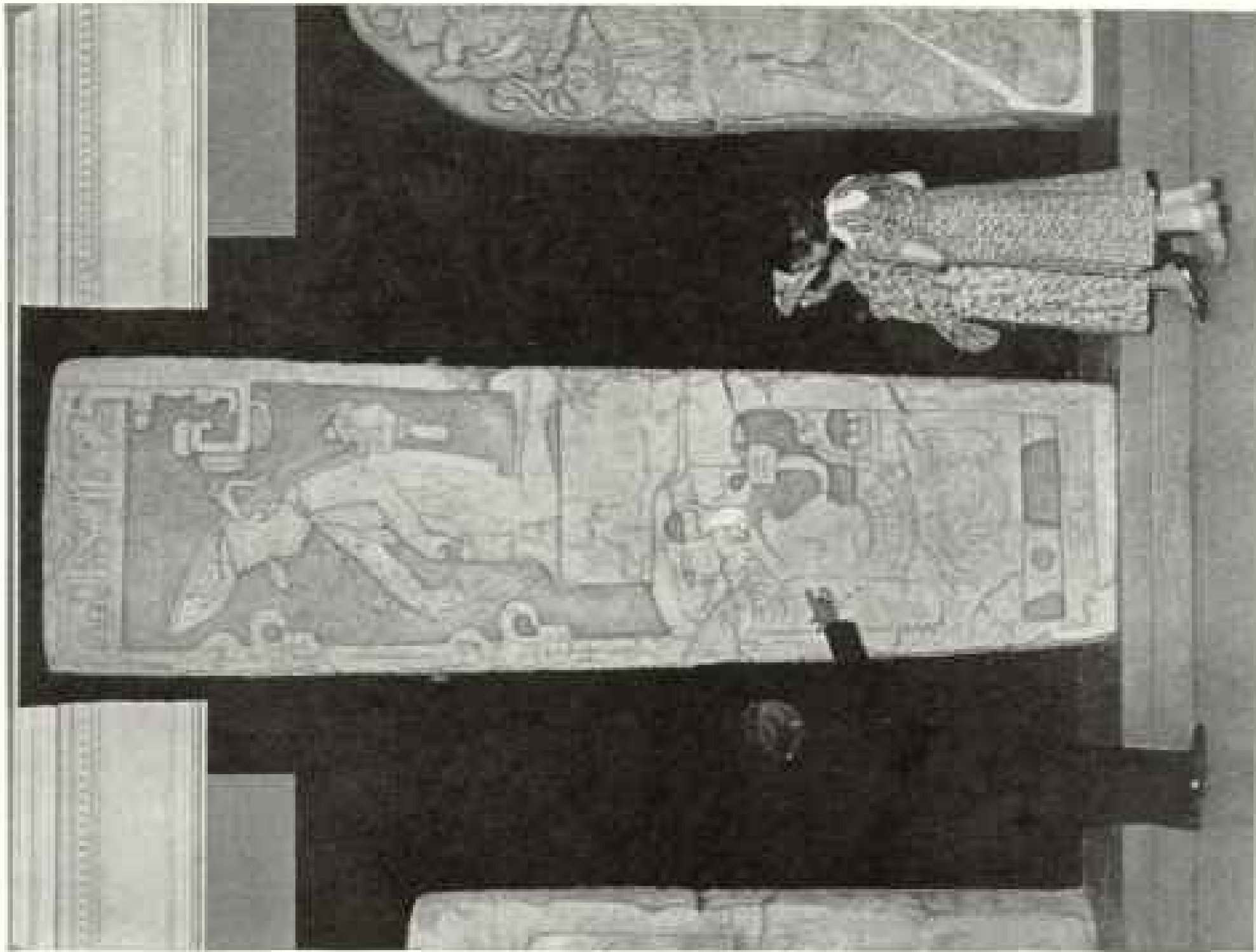
THIS GROTESQUE HEAD WAS THE LEG OF AN ANCIENT ALTAR

The face represents a deity of the Maya pantheon, probably a rain god. The stone stands 30 inches high and bears a date thought to be October 11, A. D. 790. This leg is now in the University of Pennsylvania Museum at Philadelphia, while the other three are in Guatemala City (see page 569).



COULD THIS MUTE MASK SPEAK, WHAT A STORY IT WOULD TELL!

From whence came the Maya? Why did they abandon the city? Scientists would ask the figure many such questions. Pyramids and temples were covered originally with plaster and colored with brilliant stucco, but most of the decorations fell to pieces after the city was abandoned.



"ON THIS DEITY'S HEAD, THE HARVEST GOD SOWS KERNELS OF MAIZE," EXPLAINS DR. MASON

The scene on Stela 40, center, symbolizes fertile fields. The monolith, largest removed from Piedras Negras, weighs five and one-half tons. From this stone Artist Herget painted Color Plate I (see text, page 561).



HERE GRAVITY PULLS THE LOAD DOWNHILL; THE YOKED OXEN MERRILY GUIDE IT

On such steep grades, loaded wagons were snubbed from behind by block and tackle attached to trees, and lowered gently. One topheavy vehicle turned a complete somersault here and landed upright on its wheels.



Photograph by Fairchild Aerial Surveys

THE LEADER OF THE EXPEDITION'S AIRPLANE DETACHMENT DISCOVERED THIS LAKE AND NAMED IT "MARGARITA" FOR HIS WIFE

Mr. Percy Madeira, Jr., was apparently the first white man to see this body of water. Most of the lake-dotted region on the west, or Mexican side, of the Usumacinta River is virtually a blank on most maps of the country. Lacandon Indians, a primitive tribe related to the Maya, roam through these jungles.

high stage, roughly squared by ax and adz, and sawed into planks with a pitsaw, worked by one man above and one below. From these planks the boxes for the monuments were made.

While excavation and boxing were going on at the ruins, another gang had been working valiantly to finish the road. A contract was made to supply oxen and haul the expedition's wagons with their loads of boxed monuments to the end of the road. The stones had been measured and boxes of the proper size made from the two-inch mahogany and cedar planks by the carpenters. Other men cut thick poles and made a tripod to which block and tackle were attached.

Then the heavy work began. With the entire force on the ropes, the massive monuments were raised and put in their boxes, well packed with dried palm leaves. By similar means the boxes were loaded on the wagons and secured with lumbering chains. Fortunately, it is a lumbering country and equipment for hauling and lifting heavy weights was obtainable in the neighborhood, as well as men experienced in this work.

It was a day for rejoicing when the oxen arrived with the wagons, the men shouting commands as the massive beasts hauled the empty vehicles up the steep slopes. Fortunately, no steep upgrades are encountered on the way out. On the several steep downgrades the wagons were let down slowly by block and tackle attached to big trees by the road.

WAGON TURNS SOMERSAULT

On the first bad grade at the camp one of the heavily loaded wagons broke loose when a pole used to brake the wheels snapped. Miraculously, it turned a somersault and landed again on its wheels without damage to wagon or monument. On upgrades the oxen were detached and used to haul on the tackle.

Hauling by oxen is a technical job. It is done at night to avoid the intense heat of the day. There being no pasture in the forest, *ramoneros* go ahead to cut a supply of branches from the *ramón* tree, the only forage that the jungle affords. On well-traveled roads the supply of ramón within easy distance of the road becomes exhausted, and no more hauling can be done, but fortunately there was a plentiful supply close to our road.

The oxen make only a couple of leagues each night, and at the end of a night's journey a corral must be made for them within reach of water, which is not always easy to find. The first ox train finally left on May 21 with the four boxes containing the four parts of Stela 12, the victory scene (see page 561 and Color Plate VI), reached the end of the road after a week of travel, and left the boxes at the edge of the river.

But the oxen had been mishandled and were badly worn out. New ones had to be obtained, and it was not until June 4 that the train left again, with a light load—Stela 36, destined for Guatemala, part of Stela 14 for Philadelphia, and the three fragments of Lintel 3, showing a Maya leader sitting cross-legged on a throne (see text, page 548, Color Plate V, and illustration, page 562).

The rainy season was upon us and the rains began. The nightly progress of the oxen became less and less, and finally, worn out, the men abandoned their work and the wagons. We also left camp, by mules, passing the bogged wagons on the way out.

Arriving at last at Tenosique, we sent out mules to bring in the parts of Lintel 3 from the wagons, and fresh oxen to endeavor to haul the wagons to the end of the road. But it poured every day and at last even the new oxen could do no more. So the wagons with their loads were covered over to remain in the woods until spring, 1932.

Lintel 3 came out on the mules, and in January of 1932 the four parts of Stela 12 were brought through the rapid on a raft, taken to Alvaro Obregón by the same means, and arrived in Philadelphia in May. Here the four parts were put together and the monument erected in the Maya Hall.

In 1932 it was hoped that, with better weather and the road finished, the exportation of monuments would be an easier task, and these hopes were partly fulfilled. As many monuments were taken out as the expedition's budget permitted after the more important work of excavation had been provided for.

As was inevitable, it took longer than was expected to put the road into condition, repair the wagons, which were in bad shape, some of the wooden parts having been eaten by termites, and to get together the oxen. But on April 30 the wagons arrived, the oxen and *tractorcito* boxed and loaded the monuments, and on May 2 they were off.

It took twelve days for them to traverse the thirty-odd miles of road, unload the



TABLE ALTARS MAY COMMEMORATE SOME EVENT THAT OCCURRED EVERY 20 YEARS

Five of them, built during the latter part of the Maya period, were found on the plaza floors of the city. Each differs from the others in design and detail. The legs of this one are about two and a half feet high. The heads probably represent a rain god (see illustration, page 565).

boxes and return, but on May 14 they were back for the second and last load. We celebrated when we received news that on May 25 the last boxes were unloaded at the end of the road, just as the heavy rains began.

A few days later we broke camp at the onset of the rainy season. The road, however, was dry, and we trotted in less than five hours over the distance which had taken the oxen as many days to traverse, and which, before the road was opened, was a long, wearisome day's journey for the archeologist visiting Piedras Negras. After a few hours' rest at the end of the road at San José we continued to Tenosique by canoes with outboard motors.

A THRONE RIDES THE RAPIDS

On the way down we traversed the rapid which the boxes had to run on a raft. While there is no abrupt fall and the river must be very deep, the volume of water that pours through the narrow curving channel between high cliffs at the bottom of the deep ravine boils and surges in a terrifying way.

The fragments of the throne we took out with us on mules and they were soon erected and placed in a niche to resemble that in which they originally stood. The throne was displayed in the Maya Temple at A Century of Progress, in Chicago.

ASSAILED BY FLOODS AND TERMITES

The other 15 large boxes, unfortunately, did not reach the end of the road until too late to build a raft and take them through the rapid to Alvaro Obregón.

We left them there at the end of the road in early June, then far above water line. In the ensuing floods they were covered by ten feet or more of water, but as they had already endured more than a thousand rainy seasons in the woods this did them no damage.

The wooden boxes tended to rot and were eaten by termites. All, however, with minor repairs, withstood the later trip to Philadelphia or to Guatemala City.

By January, 1933, the river had fallen sufficiently to permit the rafts bearing the big boxes to run the rapid. The monuments actually had to be excavated a second time,



Photograph by Newton Blakeslee

PERHAPS YOU SAW THIS MAYA THRONE AT "A CENTURY OF PROGRESS" IN CHICAGO

The only one yet discovered, it was displayed at the Exposition in the Maya Temple. Two legs support the front of the seat, while the back rests on a ledge. From hieroglyphs on the legs and front, scientists learn that it dates either from A. D. 785 or 535. The throne is now in the University of Pennsylvania Museum.

for the floods had covered them with several feet of silt. A number of cedar logs had been accumulated, these being more buoyant than mahogany, and a large raft was made of these. But even this would carry only 11 of the 15 boxes. The raft was taken through the rapid successfully by Dr. M. C. Todd and floated to Alvaro Obregón, where the logs were sold.

As no more logs were then coming down the river, trees were felled to make the second raft for the four remaining boxes. A very buoyant wood of no commercial value, known as *guanacaste*, was selected for this purpose. After taking the boxes through the rapid, this raft was broken up at Tenosique and the boxes transported to the seaport on a river steamboat.

What a sight it must have been to watch the rafts come through the rapid! Even with the river at a low stage, it was a difficult task that required expert work on the part of the rivermen.

The first 11 boxes had to wait for a steamship large enough to handle them and so the entire shipment left together for New

Orleans. From there half were sent to Philadelphia and half to Guatemala.

A 2,300-MILE DETOUR

Although it is only 180 miles in a straight line from Piedras Negras to Guatemala City, the intervening forests are without roads, and the only feasible way of sending the monuments to the Guatemalan Government was to New Orleans, then back to Puerto Barrios, and by rail to Guatemala City—a total distance of about 2,300 miles.

We had returned to Philadelphia in July, and for seven months had waited eagerly for the news of the successful running of the rapid. Letters from Tenosique constantly reported the river as still too high.

One may imagine our joy when a telegram was received reporting the successful passage of the first raft. Then we waited in suspense again for several weeks until the tension was relieved by the receipt of another wire announcing that the second raft had come through successfully.

The job had been done!

THE MIST AND SUNSHINE OF ULSTER

BY BERNARD F. ROGERS, JR.

With Illustrations from Photographs by the Author

AT 10 o'clock on a calm July night several of us were leaning over the starboard rail, gazing upon our first sight of Ireland.

Barely discernible beyond the little islet of Inishtrahull lay Malin Head, Erin's northernmost tip. Its headlands were silhouetted against a clouded sky streaked with rays of a summer sun, for darkness comes late in these latitudes.

That distant shore formed part of wildly beautiful, rocky County Donegal, connected with the rest of the Irish Free State by a narrow strip of land farther south. To the east lay Ulster, or Northern Ireland (see map, page 574).

"We'll be at the entrance to Belfast Lough before daybreak. Morning tea at 2:30," was the captain's forecast.

A LANDING IN BLACKNESS BEFORE DAWN

Only a blinking lighthouse pierced the chilly damp blackness at that appalling hour. Our tender was very late, but it finally arrived and the transfer of my roadster, together with a few passengers, was quickly made.

Gradually, as it grew lighter, The Gobbins, those chalky cliffs north of the little town of Whitehead, emerged from their background of rolling green hills. Across the mouth of the Lough, on the southern shore, were Bangor and Groomsport, two holiday resort towns, vague in the morning haze.

That imposing mass of medieval architecture, Carrickfergus Castle, so important in its day, but now a historical museum, slipped past on the shifting shoreline (see illustration, page 603).

An hour's steaming brought suddenly into view a fascinating network resembling some huge cobweb. As we moved closer, it began to take form as enormous steel cranes and still more colossal gantries erected before "the depression" to construct man-made leviathans. A low-lying city unfolded before us.

My immediate feeling was that in no possible way could even so diminutive a boat as ours penetrate that pancake city. But soon I saw in the center of a large mudflat what appeared to be a narrow stream, per-

chance wide enough to accommodate an Indian canoe. Beyond were funnels of gigantic liners, red-striped, blue-striped, and some hulls with no stacks at all.

As we entered the actual mouth, the channel looked wider. Curlews fluttered across our bow. Big black-backed gulls and small darting terns made raucous noises as they winged about our masthead.

We were in that famous cut which was started almost a hundred years ago to give Belfast a straight channel 300 feet wide and deep enough for the world's largest ships. For miles we had been running in it, but the fact was not apparent because of the shallow water covering the silt or mud.

All along the way were busy dredges. These little floating machines prevent the city from suffocating. Should they stop their incessant operations, Belfast would soon die industrially as would a man who could not dislodge something blocking his windpipe.

We passed enormous ships in various stages of dismemberment. Some were having new engines installed; others were being repainted; one was even being cut completely in half so a new center section could be inserted to give additional length.

Gradually penetrating the heart of the city, we noticed pile upon pile of coal, all brought from England. On the opposite side were rows of sheds housing every conceivable form of bale, box, and bag; some for export, some just off a boat.

One of the sleek new motor liners plying between Liverpool and Belfast was just being warped into her dock. She had left England at ten o'clock the night before while her sister ship started in the opposite direction. Only fog at the English terminus could prevent a person from dining in Belfast and breakfasting in Liverpool, or vice versa, any week day throughout the year.

A "YOUNG CITY" CENTURIES OLD

Sailing on another line from Larne, about 18 miles north of Belfast, to Stranraer, in Scotland, one encounters less than two hours of open sea. For Northern Ireland is close to Great Britain, especially to Scotland, which has an important bearing



THE PRINCE OF WALES OPENED NORTHERN IRELAND'S NEW HOUSE OF PARLIAMENT

Atop the building at Stormont stands the symbolic figure of Britannia (see Color Plate I and text, pages 573, 576). From 1921, when King George V opened the first session, until the permanent home was completed in 1932, Parliament met in the Presbyterian Training College, Belfast. Northern Ireland and the Irish Free State are independent of each other, each having its own Parliament.

when the type and temperament of many of its inhabitants are considered.

The industrial and cultural center of Northern Ireland is indisputably Belfast, so appropriately nicknamed "Linenopolis." "A very young city," you are told by those English residents who reckon a settlement's age in centuries instead of years. They remind visitors that during the Middle Ages Belfast was a minor castle on the outskirts of important Carrickfergus.

Situated near the head of a Lough, or inlet, a dozen miles from the sea, where a little tributary joined the River Lagan at a ford, Belfast derived its name from its position. *Bel* or *beal* meant an entrance, a mouth, while *fersad* was a sandbank.

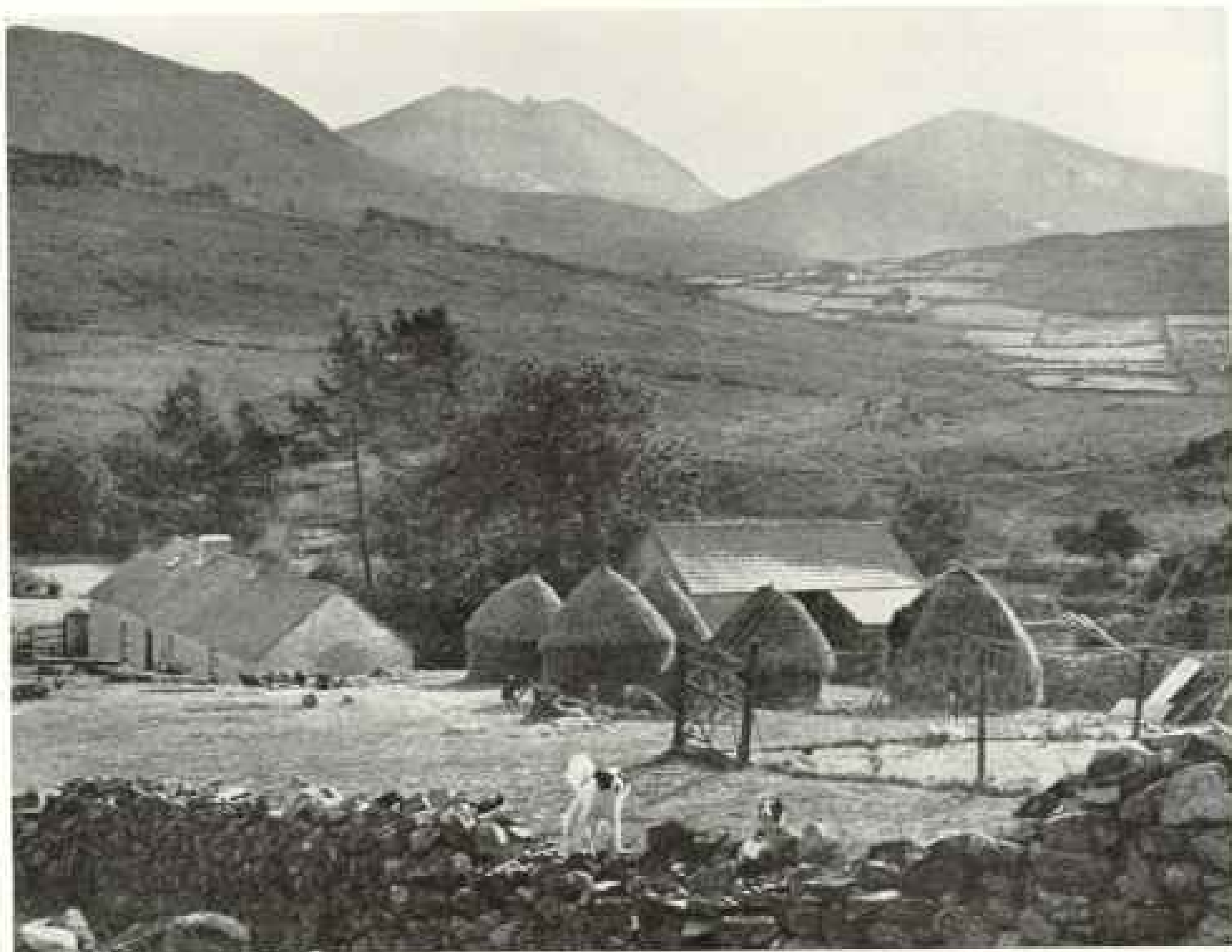
In those early days Belfast sometimes was referred to by another name, and a whopper it was, too—Ballycoonegalgie! I imagine the train conductors are glad it failed to stick!

So shallow and twisty was the mouth of

the Lagan that even the smallest craft could not reach the town except at high water. Nevertheless, it once was an important military position for maneuvering armies of the continually warring factions.

Seeing Belfast now, it is difficult to realize it was given as a present to Sir Arthur Chichester when he was made Governor of Carrickfergus by Essex in 1604. Rightly enough, he is considered the founder of the city and today motor cars speed over the creosote-block surface of an important street bearing his name. Then the town could boast but five muddy lanes and about 500 inhabitants.

A quarter of a century later, Lord Deputy Wentworth gave the trade of the "port" its first major stimulus when he purchased from the Corporation of Carrickfergus the "right of importing certain commodities at one-third of the duties payable at other places." During the linen industry boom of the 1780's, work was started



A HILLSIDE FARM NESTLES AMONG THE MOURNE MOUNTAINS OF COUNTY DOWN

The owner built the stone fence in the foreground more to get rid of the rocks than to keep in the livestock. Farmers frequently gather stones from the fields and pile them in out-of-the-way heaps so they may cultivate the land.

on dredging a winding, shallow channel through three miles of mudbanks to the Lough proper. The result was magical.

In less than a generation the linen export figures increased 300 percent! Also the manufacture of cotton goods developed, and in 1800 it was estimated 27,000 people were employed in that industry within a ten-mile radius of Belfast.

Although shipbuilding had been carried on in a small way since early times, the completion of the waterway project by the middle of the century naturally stimulated this industry, too. Belfast reached its majority when it was created a city in 1858 and today it boasts a population comparable to that of Kansas City, Missouri.

OFF WITH A SAGE AND FRIENDLY GUIDE

A man I met gave little evidence that he had just turned the three-quarter century mark, but it was apparent that he had used his years to assimilate knowledge on every conceivable subject.

"Aye," said he, his keen blue eyes sparkling, his head poked out characteristically, "Ye must see Stormont. It's the heart o' things nowadays and is new and impressive and beautiful and enormous."

This last he emphasized strongly.

"Ach, man, it's big enough to house the government of your entire United States, whereas now it has the representatives of only six counties in the northeast section of this little island."

Stormont, where the resplendent new Parliament Building stands, is about four miles from Belfast. On our way there we crossed one of the four bridges which span the Lagan and entered the section which is in County Down; the main part of the city is in County Antrim.

Rows and rows of workers' houses lined the side streets. Made of brick and all of one type, they are only about twelve feet wide. The door opens onto a narrow staircase, to the left of which is the living room with a fireplace. Tiny, they fascinated me



Drawn by Newman Burnstead and Ralph E. McAleer

IN IRELAND, AS IN VIRGINIA, TRADITION REVOLVES AROUND COUNTIES

After Great Britain passed the Government of Ireland Act in 1920, six Ulster counties—Londonderry, Antrim, Fermanagh, Tyrone, Armagh, and Down—became Northern Ireland. The other three counties of the old Province—Donegal, Cavan, and Monaghan—became part of the Irish Free State.

and always gave the impression that here indeed was the home of some Mr. and Mrs. Tom Thumb (see Color Plate IV).

To see the different styles I looked down each cross street. Some rows were perfectly plain, of yellow brick; many were of red; some had little porches, others simply a protruding entranceway. But all were in groups, like quintuplets or octuplets; never one with a design all its own.

These were for the greater part the abodes of shipbuilders and ropemakers, for this is a city of industrial workers. Their homes spread fanlike in all directions, encroaching upon and, in many instances, even completely engulfing the pretentious mansions of captains of industry. From Cave Hill on the northwestern outskirts of the city, the panorama of roofs and chimneys, punctuated only by the narrowing



THE "NEW ZEALAND STAR" IS POISED FOR ITS SLIDE DOWN THE WAYS INTO BELFAST HARBOR

Long-necked cranes hoist supplies from the ground to various parts of the ship, and electromagnet "fingers" handle massive pieces of steel as though they were toys. The refrigerated cargo liner was built for service between Great Britain and Australasia. One building berth here in the Harland and Wolff yard could accommodate a ship larger than the 1,029-foot *Normandie*. At docks lining both sides of the Lagan River, the author saw ocean-going ships whose flags represented nations on nearly every continent (see Color Plate II).

arms of Belfast Lough with its shipyards; unfolds like the fan of some giantess.

In Belfast I saw no tenements or large buildings housing several families. Each family has its individual home. I saw no "slum" sections, in the strict sense of the word. I believe in this respect the city is exceptional, considering its size and preponderance of wageworkers.

Farther from the river, as we neared the outskirts, the houses were larger and more detached. Many had little gardens and hedges. Before reaching Stormont, I noticed several conspicuously beautiful places with spacious lawns.

On a sloping hillside in the center of a large park stands the imposing white limestone Parliament Building, a present to Northern Ireland from the British Government. For those who object to the four-mile trip to and from the city, attractive new homes are now being erected near by.

Back in Belfast, I found the city's magnetic appeal lies in its industries. Linen and shipbuilding are undeniably paramount, but ropemaking, cigarette and flour manufacture, and distilling also are important.

A TRIP THROUGH A ROPEWALK

The ropeworks had its lure, and I was conducted over the most interesting portions of the many acres of plant.

My eyes traveled over bale upon bale of a dirty brown fiber imported from India, Russia, Italy, and Belgium. They stood ready to be transformed into cordage, ranging from the heaviest anchor rope to binder twine and ordinary string.

We passed on into other acre-area departments where men sorted, cleaned, spun, braided, and twisted hemp, flax, and cotton. Long lines of noisy machines suggested vast armies drilling—drilling to double-quick time.

I was glad to reach that quiet section devoted to the making of trawl nets used by "drifters" the world over, especially in the North Atlantic food fish regions. Each individual fisherman, I learned, has his particular idea as to sizes and shapes, and these vary widely in different localities. This variety, and the gradual change, from top to bottom, in the size of the mesh, make it necessary to manufacture these nets entirely by hand (see Color Plate XI).

It is surprising how quickly girls are able to turn out one of these unwieldy fish catchers which may measure 100 feet from its

"wings" to its tip. The nets are finally thoroughly immersed in a tar bath for protection from the action of salt water.

The ropewalks where three strands are twisted into rope are most interesting, though nowadays they are being replaced by improved patented machinery which takes up less room and requires fewer operators (see illustration, page 586).

When sailing ships ruled the waves, almost every seacoast town had its own ropewalk, some, I was told, a quarter of a mile long. In Belfast there were about a dozen, but by 1880 most of this business was handled by a single company closely affiliated with the shipbuilding industry. Most of the smaller works disappeared and gradually the rope demand lessened as steamships supplanted the sailing vessels.

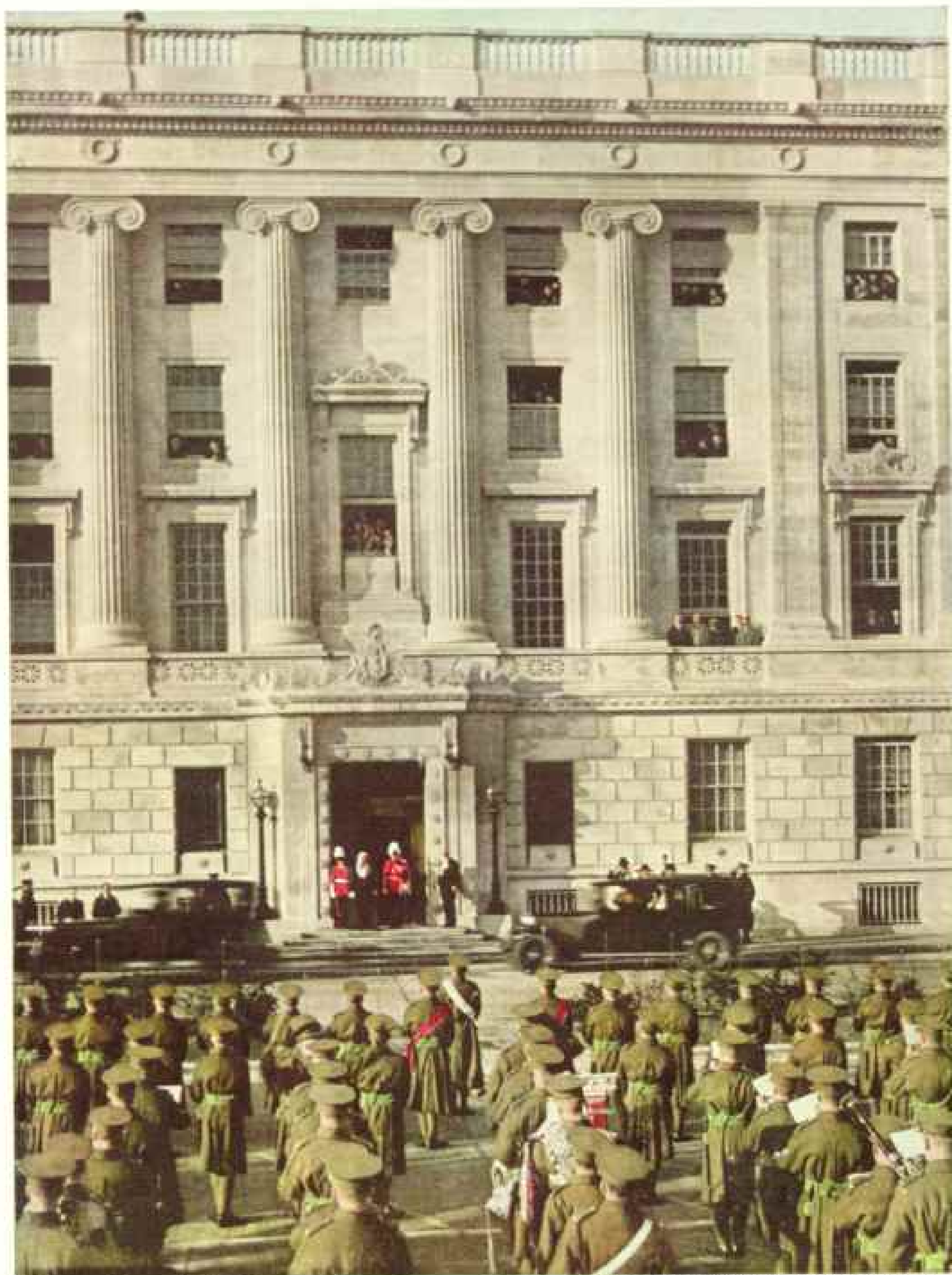
HOW BELFAST AIDS AMERICAN BREADMAKING

The advent of the reaping machine literally saved the day for ropemakers and now their largest volume of business is with Canada, the United States, and South America, to whom they supply twine for binding grain sheaves.

Shipbuilding, as I have mentioned, is a very vital factor in the city's life. Such liners as the *Titanic*, the *Olympic*, and the *Britannic* were constructed in Belfast, and during the World War the plants proved of inestimable value to the Allies. The two giant shipbuilding concerns have prospered under the very unusual circumstance of having to import not only their raw materials but their coal. Only their enterprise and ability were at hand (see Color Plate II and page 575).

The people seemed to me to consume more tea than the Chinese! Tea upon first awakening, tea for breakfast, tea at eleven (although, of late, coffee drinking has become popular at that hour), tea at luncheon, tea at five, tea at ten, and it is often served at midnight! There is "high tea" and "low tea" and simply "tea"—depending upon the amount of food served with it. If you are invited to stop in "fer a drap o' tea," you are safe in calling any hour of the day or night.

One day, before I had been very long in Belfast, I had an invitation to dine the following Sunday. "Seven o'clock," the message read. "Well, this must be a full-fledged dinner," thought I, because the few times I had enjoyed local hospitality we had tea



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Finlay Photograph by Bernard F. Rogers, Jr.

SOLDIERS PRESENT ARMS AND THE BAND PLAYS AS THE ROYAL GOVERNOR ARRIVES TO OPEN PARLIAMENT

This Capitol building is situated in a wooded, 300-acre estate at Stormont, about four miles from the center of Belfast. Great Britain built the stately structure and gave it to Northern Ireland. Under the Act of 1920 Northern Ireland was granted a separate legislature, consisting of a Senate and a House of Commons, but executive power is in the hands of the Governor, who represents His Majesty and is advised by ministers responsible to the young Parliament.



BELFAST WAS THE BIRTHPLACE OF THE ILL-FATED TITANIC AND
MANY OTHER FAMOUS BRITISH SHIPS.

The screech of electric cranes and gantries, straining as they hoist tons of steel, and the staccato rat-tat-tat of trip hammers resound even in this Victoria Park retreat. Shipyards in Belfast are among the largest in the world.



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Finlay Photographs by Bernard F. Rogers, Jr.

THEY CYCLED 20 MILES FROM BELFAST TO DRINK THEIR TEA BESIDE THE IRISH SEA. Donaghadee, nearby, is Ireland's closest port to Great Britain. Across the channel lies Scotland's Portpatrick, from whence embarked early pirates to harry the Irish coast.



© National Geographic Society

Finlay Photograph by Bernard F. Rogers, Jr.

TO THATCH ONE'S HOME TAKES PATIENCE AND SKILL.

The workman has removed a strip of old straw and spread a layer of "marl," or soft, yellow clay over the exposed area. Next, he took some of the willows from behind him, stuck them in a row, and then laid new straw against them. Now he binds the thatch to the roof by bending the willow sticks over it and pushing the free ends firmly into the clay. Finally, he will pour water over the new roof to keep the wind from ruffling it.

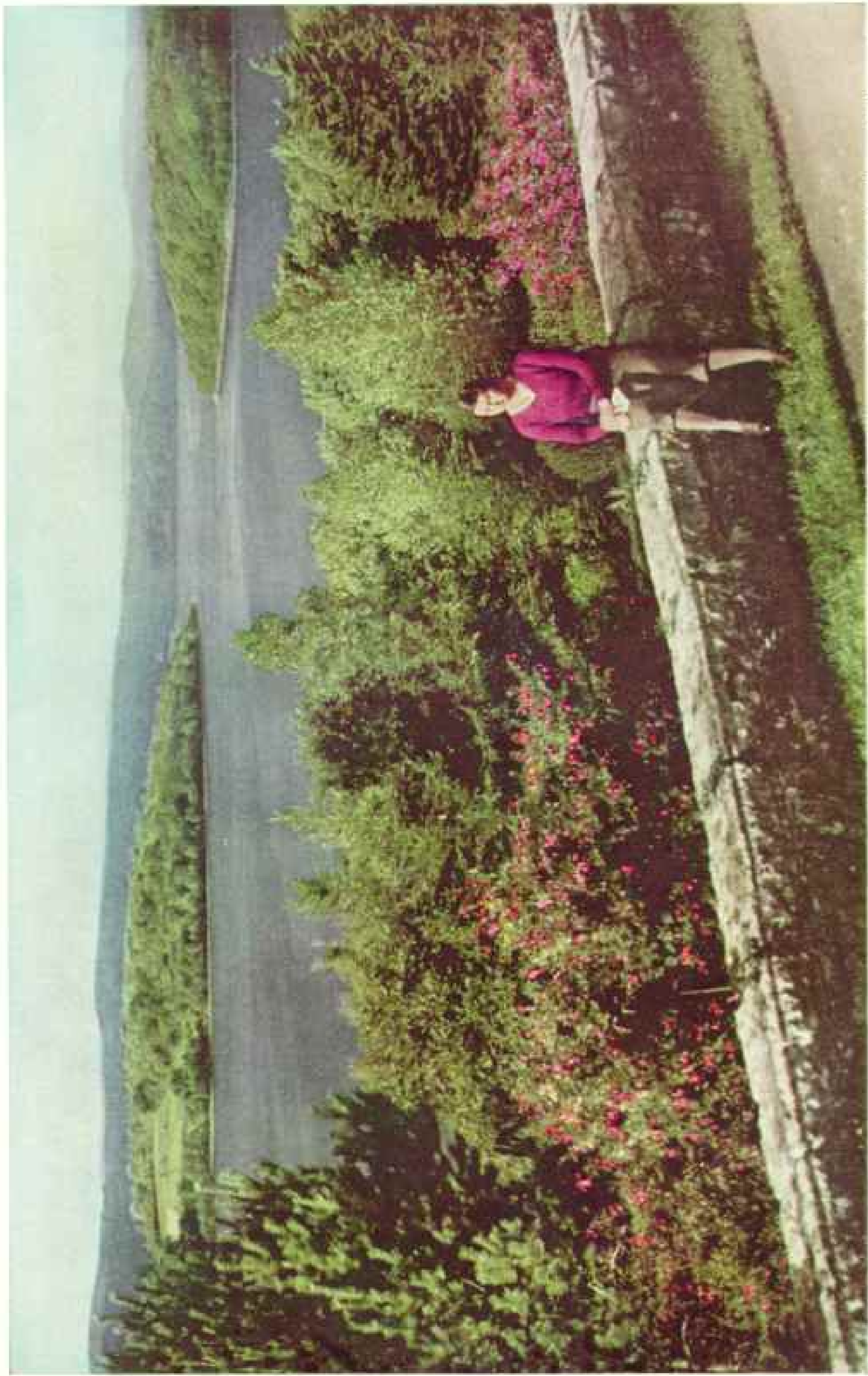


© National Geographic Society

Field Photograph by Bernard F. Rogers, Jr.

FROM A GREEN HILL, BELFAST YOUNGSTERS LOOK DOWN ON ROW UPON ROW OF "TOM THUMB" HOUSES.

Workmen's tiny homes, only 12 or 14 feet wide, are packed so closely together that there is scarcely room for a shrub or blade of grass. Fathers probably labor in the shipyards (right background), and mothers make linen or rope in red brick factories (left). On Cave Hill, northwest of the city, Theobald Wolfe Tone swore the United Irishmen's oath in 1794.



© National Geographic Society

Finlay Photograph by Bernard P. Rogers, Jr.

BECAUSE WARM ATLANTIC WINDS TEMPER ULSTER'S CLIMATE. GREEN FOLIAGE FRINGES LOWER LOUGH ERNE THE YEAR ROUND
In this lake at Killadeas, where red fuchsia blooms profusely, fishermen hook pike, perch, and trout. Hundreds of timbered islets—one for every day in the year, it is said—stud both the Upper and Lower Erne, sister lakes in County Fermanagh (see Plate XIV).

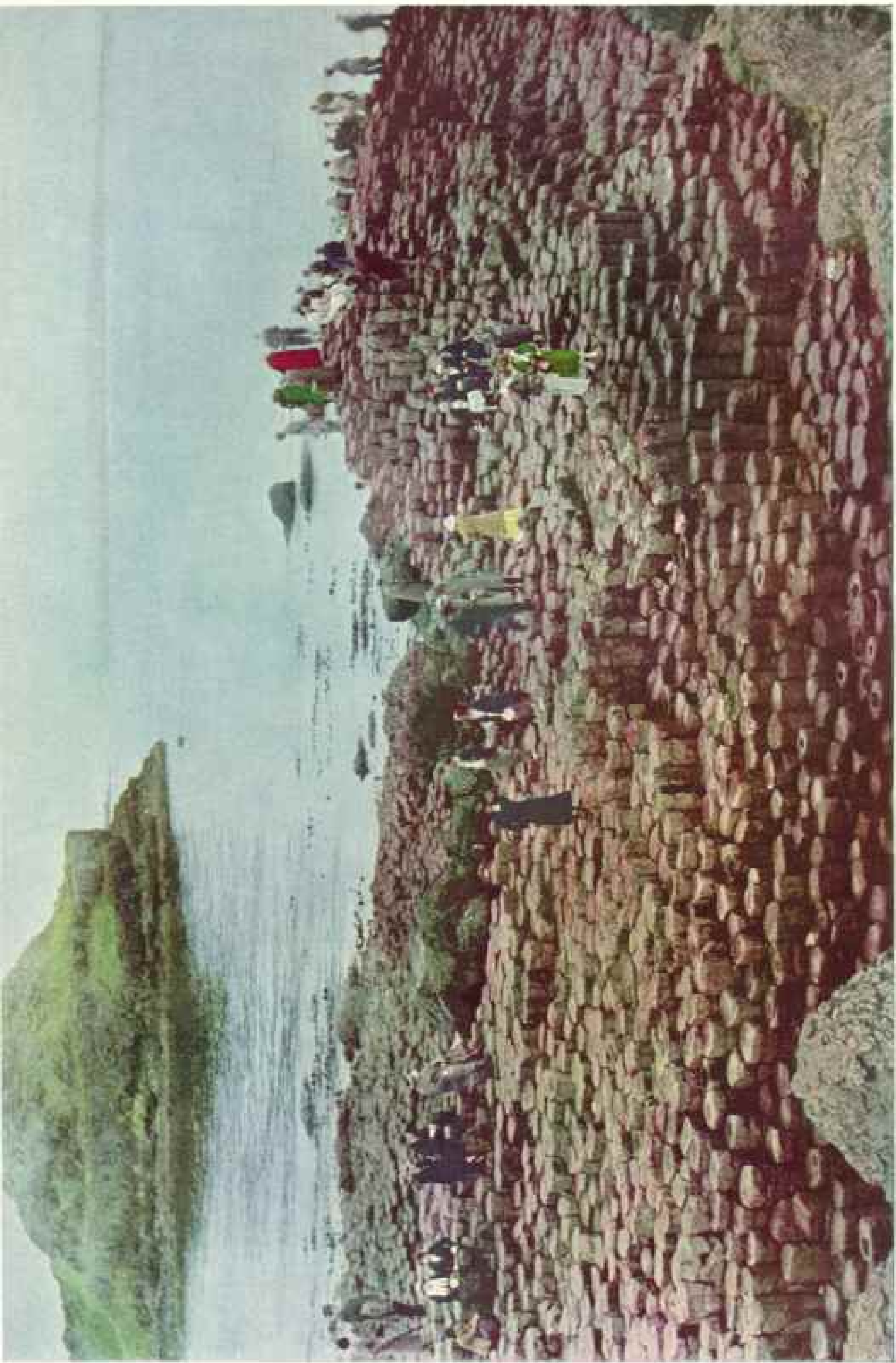


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PRICKLY BRAMBLES EDGE THIS GARDEN, BRIGHTENED BY ROSES, NEAR DALLEYCASTLE

Finlay Photograph by Bernard F. Rogers, Jr.

Earth embankments, planted with gorse or blackthorn, serve as fences between the owner's lawn and pastures. The Irish call such barriers *ditcher*, and a trench or furrow to them is a *ditch*. To a cave on Rathlin Island, five miles to the north, Robert Bruce fled for refuge from the English. There, it is said, he gained new courage from watching a persevering spider, and went forth to win Scotland's freedom. Fair Head blends into the distant sky.



© National Geographic Society

Finlay Photograph by Bernard F. Rogers, Jr.

LIKE MONSTER BEES ON A HONEYCOMB, VISITORS SWARM OVER THE GIANT'S CAUSEWAY

Geologists say these six-sided blocks were formed during some long past subterranean disturbance. Hot lava rose to the surface and on cooling took these curious shapes, but Irish tradition gives another explanation: A Scotch giant threatened Fin MacCoul, Irish warrior, with a beating, but he wouldn't come to Ireland because he was afraid to swim the channel. Fin built a stony highway across the sea, so the Scot could cross—and promptly defeated him. These slabs, remnants of that legendary road, are 15 to 20 inches in diameter. A similar formation exists on the Scotland shore.



© National Geographic Society

Finlay Photograph by Bernard F. Rogers, Jr.

SONS OF IRISH MOTHERS HOLD HIGH PLACES OF HONOR IN AMERICA

Men of Ulster were among the signers of the Declaration of Independence, and several of our Presidents, including James Buchanan, Grover Cleveland, and Woodrow Wilson, were of Ulster descent. This old lady is content in her thatched home at Ballinamallard, for she says it is warmer in winter and cooler in summer than many that are more modern. Above her head Virginia creeper, reddened by an early fall frost, clings to the roof and whitewashed wall.

and its usual appurtenances served at almost any other than the conventional hour for an evening meal.

"I thought you would understand no signs of formality were to be expected here this evening," explained my hostess, "merely a small intimate party. You see, we are still old-fashioned enough to enjoy the company of the assembled family clan."

"Small" was scarcely the correct adjective, but I was not for a moment permitted to feel ill at ease. After a simple meal some of us strolled out upon the terrace, now flecked with moonlight, but still wet from a drizzle during the day. It made an admirable setting for one of those dignified old homesteads inconspicuously located amid their ancestral demesnes or tree-studded lawns in and about the larger cities.

Often, in midsummer, one returns from a dinner party or even from the theater by daylight, as the sun does not set until very late because of the city's northern location. Belfast is about on a line with the northern Aleutian Islands and is nearer the North Pole than the northernmost tip of Newfoundland.

AUTOMOBILE LIGHTING TIME—11:03 P. M.

The "lighting-up time" for automobile lamps one day in July, I remember, was 11:03 p. m. After six o'clock, which is the closing hour for the majority of the factories, many streets during the summer months seethe with humanity till past midnight, making the operation of a motor vehicle literally impossible. Recently bicycling has had a renewed burst of popularity. The extra hours of daylight provide opportunity for excursions into the country, and riders of both sexes, many on tandems, may be seen on all suburban highways. It reminds one of Amsterdam or Copenhagen.

In spite of its latitude Ulster is temperate, thanks largely to the Gulf Stream.

Meteorologists also point to the island's position in the Atlantic cyclone belt. This sounds a bit terrifying, but it merely means that Ireland is swept by westerly winds which carry the tempered sea air over it, causing an approximate summer and winter temperature range of 45 to 60 degrees, Fahrenheit. Sometimes it is warmer; seldom colder.

But what a deal of rain these winds do bring! From the middle of May to the middle of July, the rainfall is not apt to be heavy, but from then on through September,

and beginning again in December, it is often showery, to put it mildly. In August, 1934, there were 25 such days, most discouraging to a photographer!

The downpour is not torrential, but steady. I would walk down the street and see people going about very unconcernedly without umbrellas. One day I chanced to remark to my bearded acquaintance that no one appeared to be aware that it was raining.

"Ach," said he. "They were probably born in it and consider it simply the natural condition o' things. After so many generations it's a wonder we're all not beavers."

Early one morning, on a day that gave every evidence of continuing fair, I stopped for him to accompany me on that world-famous drive from Larne to Cushendall—26 miles of coast which, its length considered, is unsurpassed throughout the British Isles in engineering skill and scenic beauty.

We decided upon the shorter route to Larne via Ballynure in preference to the highway which skirts Belfast Lough. The road was well surfaced, as I found all the roads in the six northern counties, although some are rather narrow and twisty.

A leisurely 40-minute drive over rolling country, too often hid from view by impenetrable thorn hedging, brought us to the busy little seaport town of Larne. It was here Edward Bruce landed in 1315, having been sent over from Scotland by his brother Robert, who was to follow later.

All through the preceding century the English had filtered into Ulster. Counties Down and Antrim were fairly in their grasp. Counties Londonderry, Armagh, and Tyrone were raided, but it is doubtful that they penetrated Fermanagh.

It was the Bruce brothers with their armies from Scotland who really made a lasting impression. After taking Carrickfergus, the key position in the North, they so undermined the English strength throughout Ulster that the native chieftains were able to reorganize. The English who remained took up Irish customs and merged with the native people. The country again reverted to Irish tribalism and Anglo-Irish feudalism.

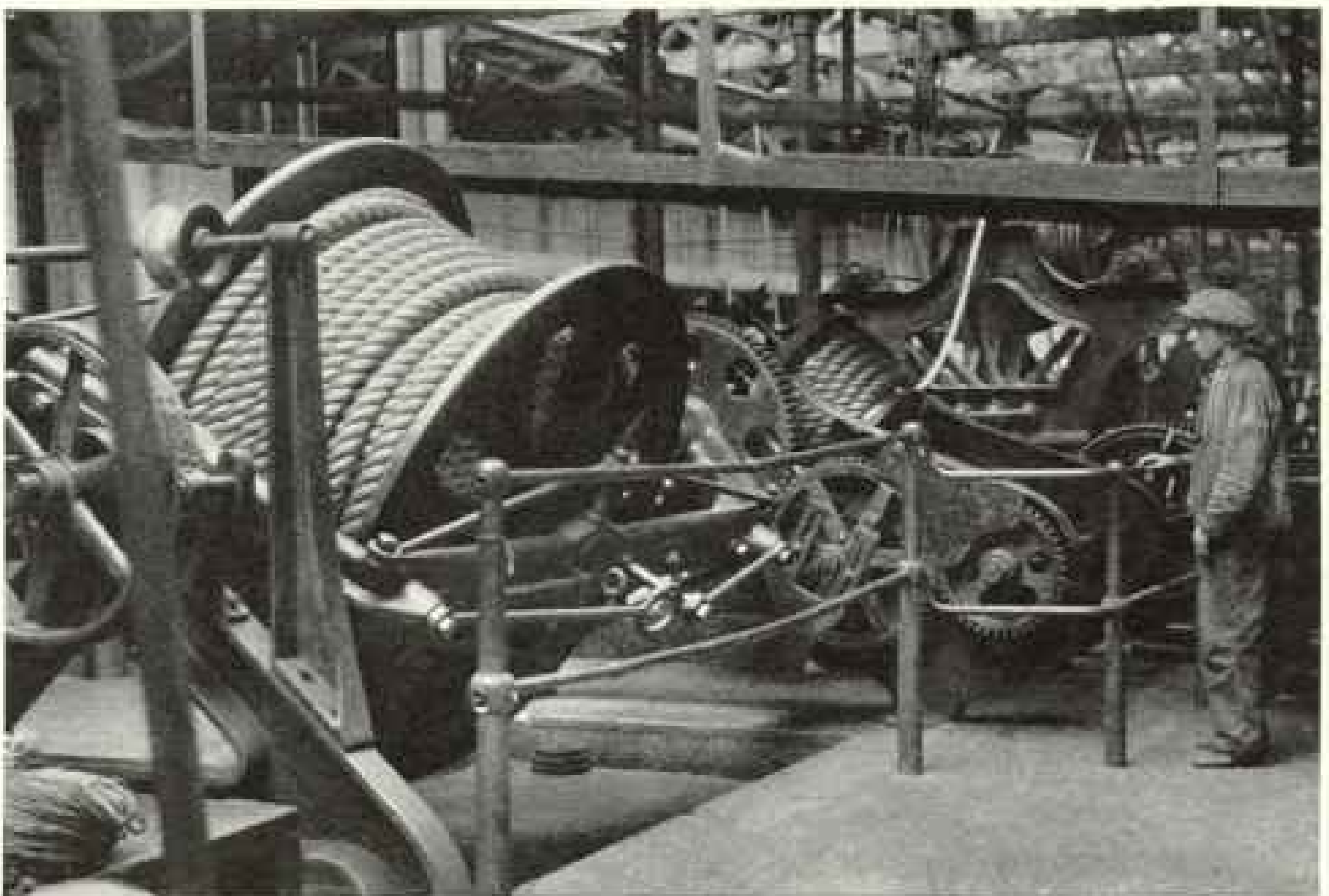
THE GLENS OF ANTRIM

Beyond Larne the road rose perceptibly. Fortunately the weather was ideal and the view was beyond my expectation. Eastward, about 25 miles across the waters of



DO YOU WANT TO BUY A DUCK, CANARY, GUINEA FIG, PUPPY, OR CAT?

Nearly every Ulster home has its pet, usually a canary or dog, and frequently both. Public opinion now frowns upon the former practice of catching wild birds and caging them. A bicycle shop like that at the right may be found every few blocks in Belfast, where cyclists far outnumber motorists (see page 383).



A MACHINE THAT MAKES ROPE UP TO SIXTEEN INCHES IN CIRCUMFERENCE

The apparatus winds several strands together to form the completed coil. The process, known as "laying," is sometimes done on a long ropewalk, but this machine takes less room, does the work more rapidly, and requires fewer men than the older method. Finished rope will not unravel at the ends, because each strand is twisted to the correct tension before it goes into the laying machine.



A BUILDING INSIDE A BUILDING IS THIS SHOP IN A BELFAST RAILWAY STATION

The outer barnlike covering, typical of Ireland's depots, houses several novelty shops. In such a waiting room, the merchant finds a clock his best means of attracting customers. Instead of a single central terminal, Belfast has three separate stations.

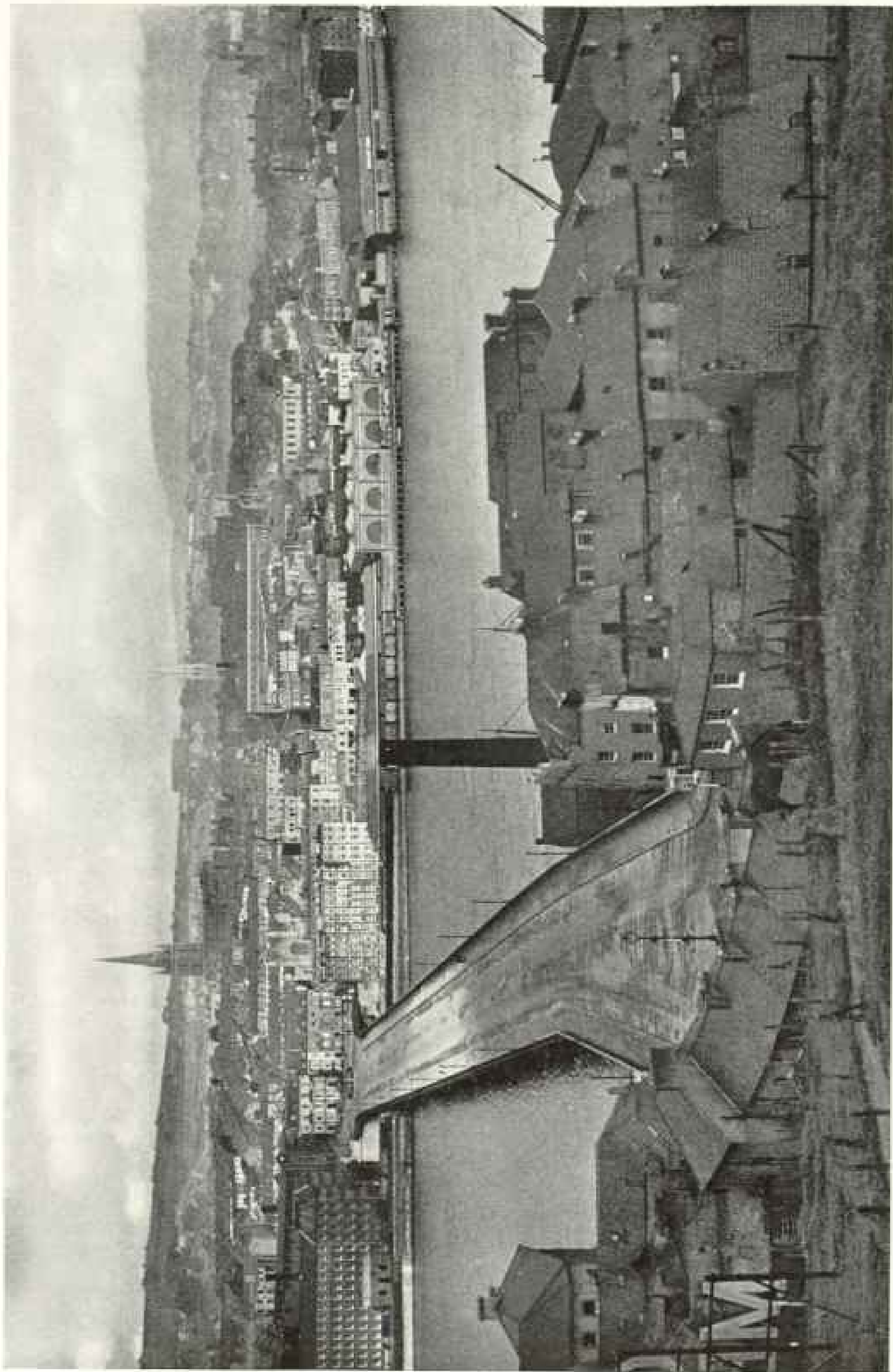
the North Channel, was the shoreline of Scotland, while on our left were the rising slopes of the mountains of County Antrim, with their historic nine Glens. The coast for the most part was rugged.

Past Ballygalley Head my companion was silent, a condition which made me fear he must be indisposed, although it developed he was only piecing together some information he was about to impart. Since childhood he had made geology a study.

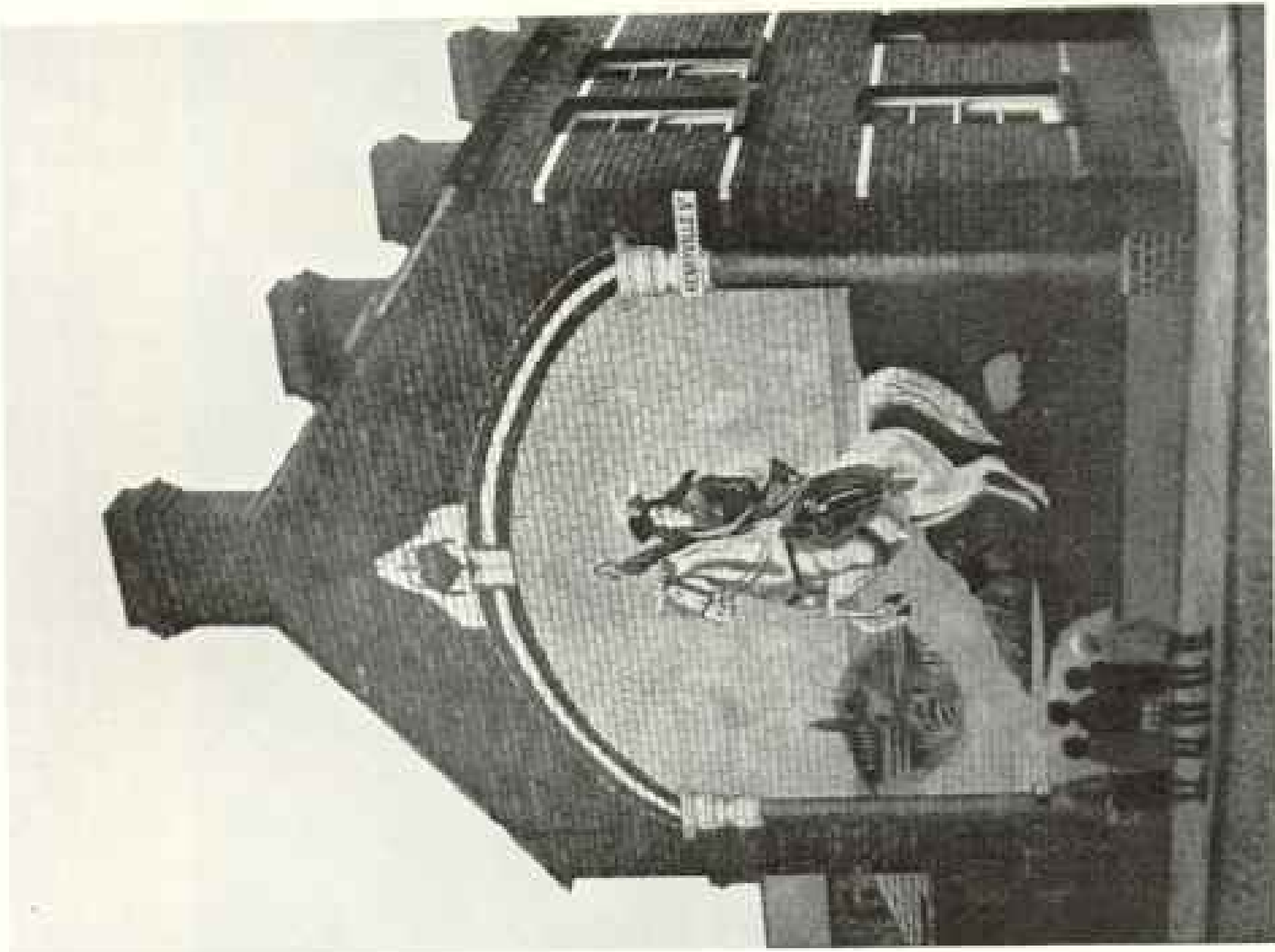
"From time immemorial there have been great upheavals in this part of the earth's surface," he said. "During early geological periods, Ireland, for reasons we do not understand, kept submerging and reappearing.

"Before it submerged for the last time it was covered with a dense tropical verdure and had a temperature higher than is normal today, as is shown by coal beds underneath the chalk cliffs of Counties Londonderry and Antrim. This limestone or chalk which covers parts of Northern Ireland in varying degrees of thickness is the result of plankton life in different forms dying and sinking to the ocean depths. Violent volcanic eruptions then came, throwing lava over this limestone, which gradually formed the basaltic rock used so extensively through the country for building."

As we talked, the snug little town of Glenarm came into view, situated at the foot of the first of the Glens. It appeared

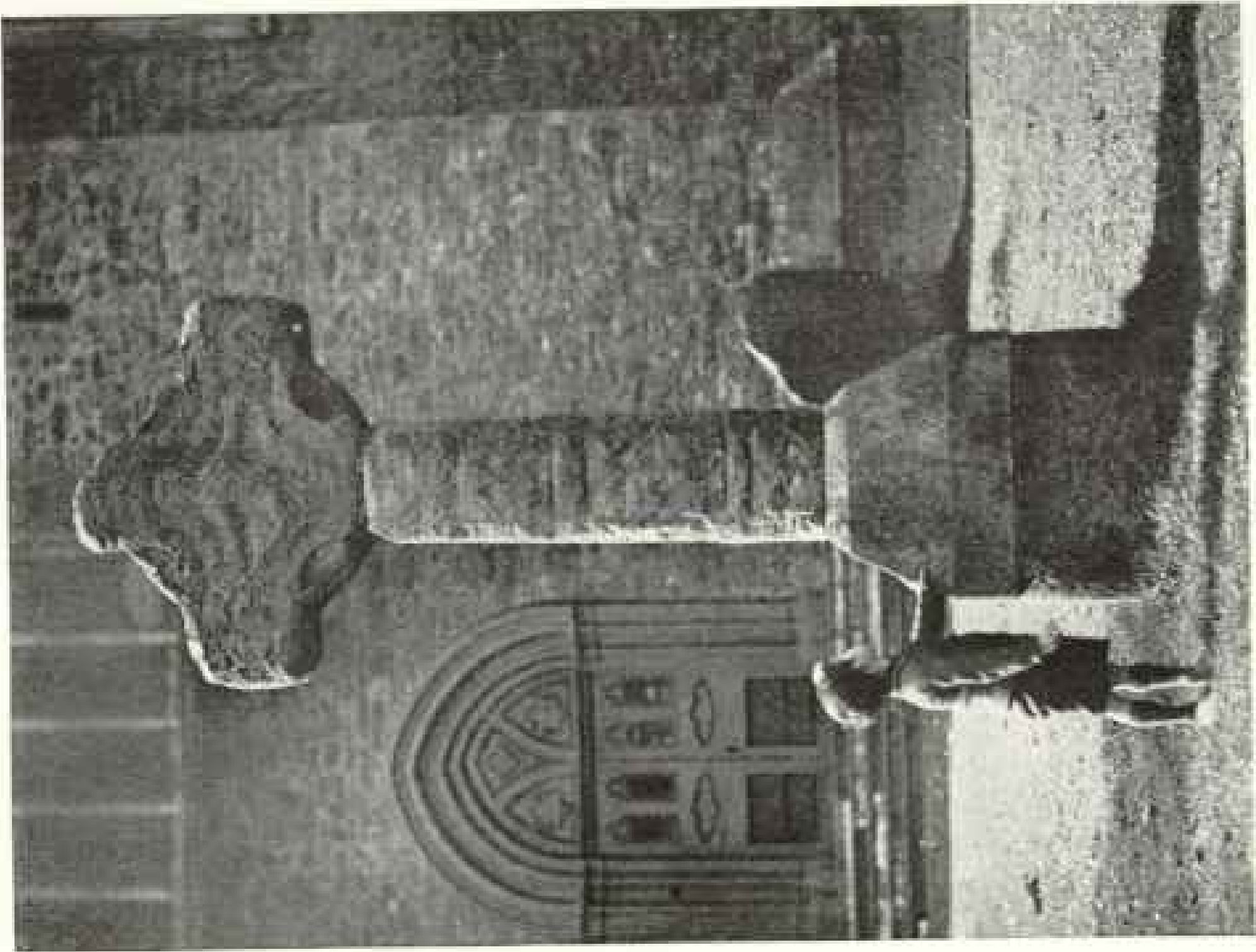


THE NEW SPACIOUS CRAIGAVON BRIDGE LINKS LONDONDERRY WITH THE WATERSIDE DISTRICT EAST OF THE RIVER FOYLE



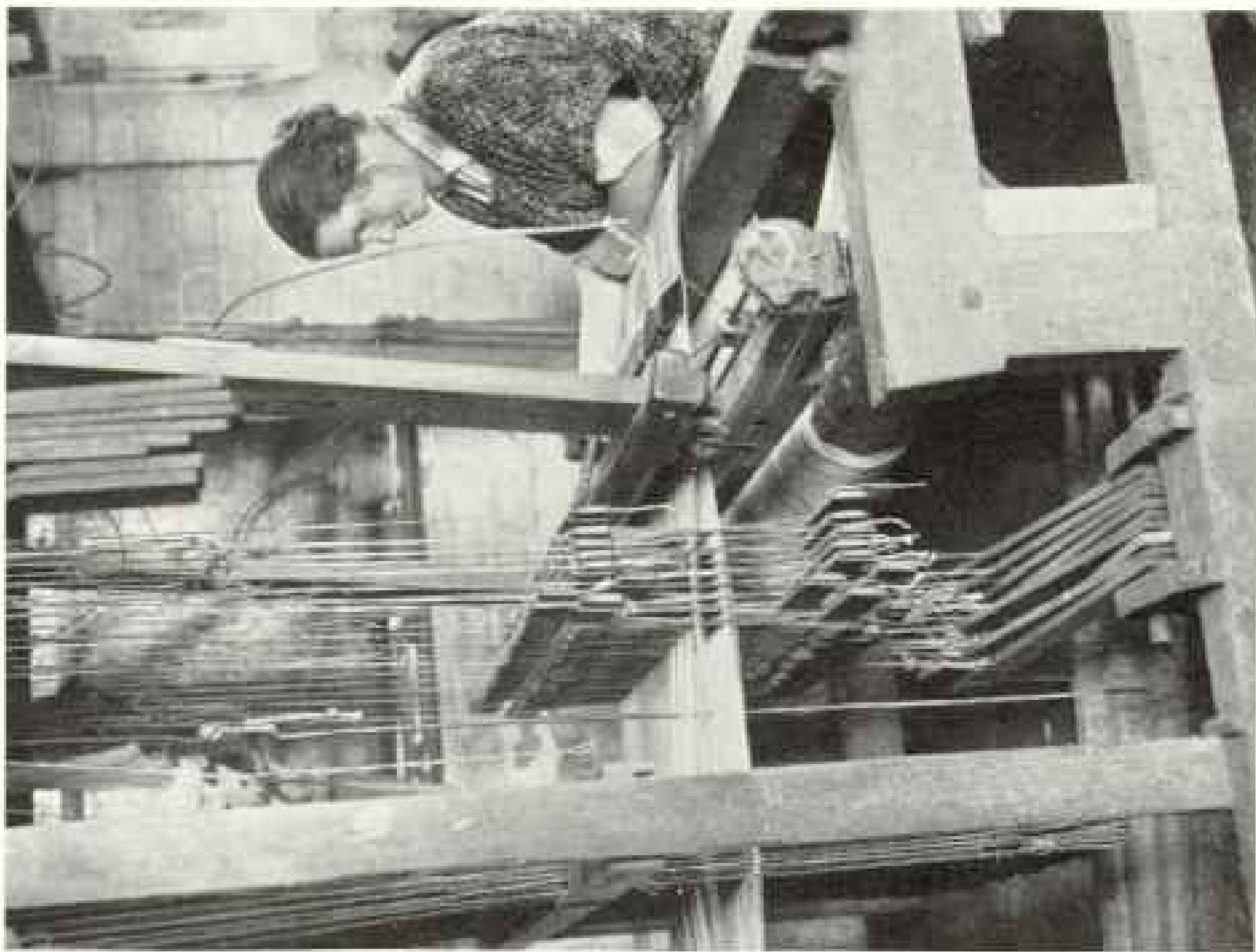
KING WILLIAM III ON HIS FIERY CHARGER IS A POPULAR MURAL.

In 1688 the Prince of Orange defeated King James II, and the next year became King of England. When James attempted to regain the throne, William again vanquished him in the Battle of the Boyne, near Drogheda, now in the Irish Free State (see text, page 608).



THE OLD MARKET CROSS WAS IN RUINS AT LEAST 150 YEARS

It stands in front of the Cathedral at Downpatrick, in whose graveyard St. Patrick may be buried (see Color Plate XV). Nature eroded the stones which appear to have been covered originally with fine carving (see text, page 603).



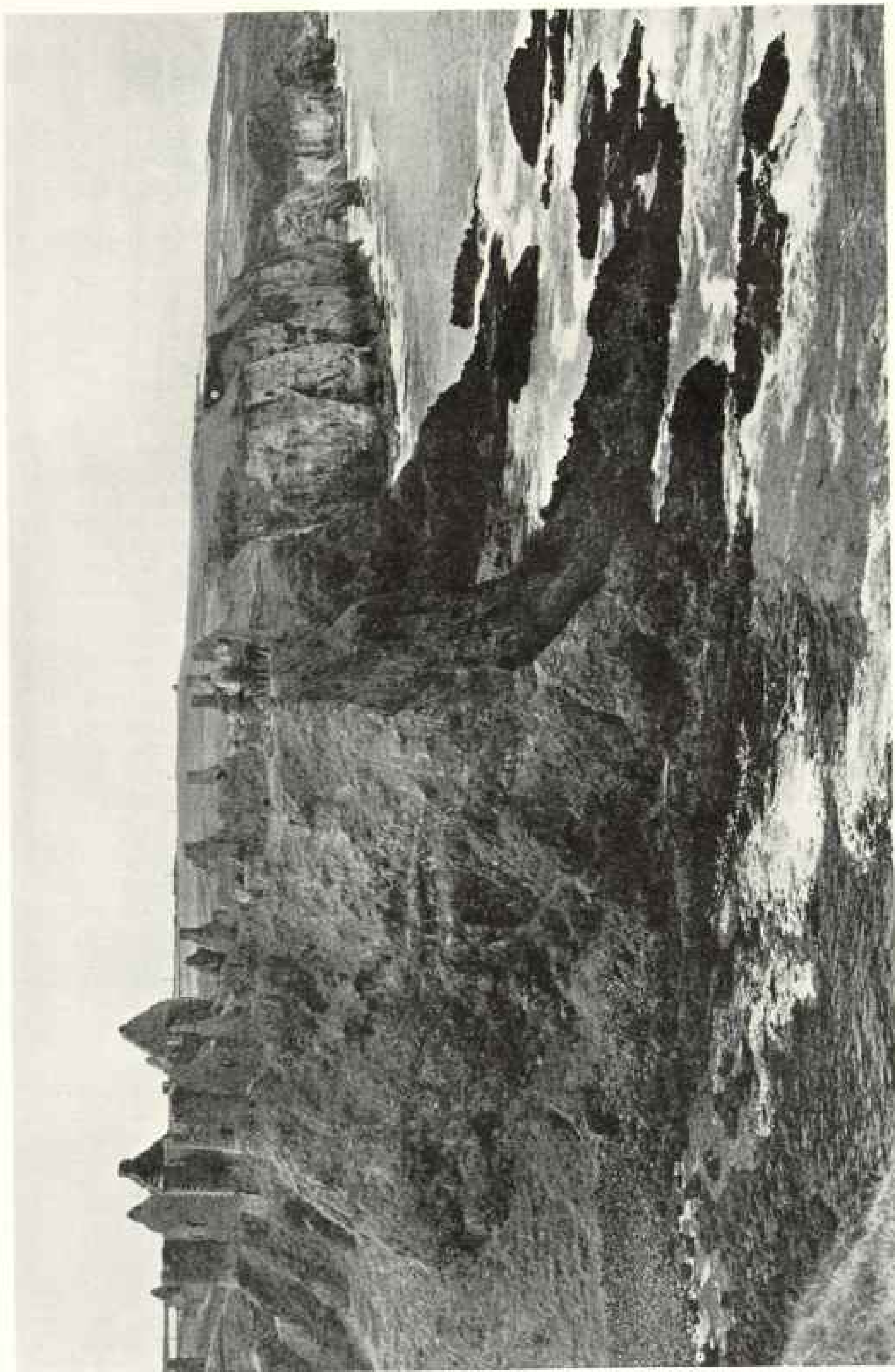
SHE CAN WEAVE A TABLECLOTH IN THREE DAYS

A century ago, Ulster hand-loomed all its linen. Now factories have sprung up, and the region produces little homespun except table damask. The weaver keeps her loom in a room with a dirt floor, because moisture from the earth makes the yarn easier to handle (see text, page 601).



THEY MIGHT BE POSING FOR A BREAKFAST FOOD ADVERTISEMENT

Two farmers-in-the-making stopped playing tag around the fat sacks of oats long enough to climb on top and have their picture taken. Father and big brothers cut the crop and heaped it in a stack, after which a threshing machine separated the grain from straw and chaff.



THE SKELETON OF DUNLUCE CASTLE HAUNTS A STEEP ROCK WALL ON THE ANTRIM COAST

The pile crouches at the edge of an isolated cliff 120 feet above the water, as though peering out into the sea, which protects it on three sides. During a storm in 1639, part of the kitchen, with eight servants, fell into a cave below. The castle, near Portrush, is not far from the Giant's Causeway (see Color Plate VII).

full of activity and bustle, so inconsistent with its setting. Yearly every locality holds its local fair, and the large Glenarm demesne, the seat of the Earl of Antrim, is generously given over each season for this purpose.

From miles around come country folk with their exhibits. Cows, sheep, draft horses and hunters, poultry and flowers, all have their competitive place.

Families congregate with their lunch baskets to spend a day of festival. The inevitable tea canteen is generously patronized and the fruit and biscuit venders do a land-office business.

The sheep-dog trials, introduced from Scotland, especially interested me. A field of some four or five acres is selected and four sheep are liberated at one end. The dog's master or trainer releases his charge about 500 yards from the bewildered sheep and in a split second the dog has spied them. Upon order he is away like a streak to round up his quarry. His intelligence in bringing them back across the large field, between two posts made to represent a gate, and herding them into a small pen is uncannily human.

When the canine shepherd feels his charges have become excited and are apt to bolt, he lies down quietly; he edges his way on his belly around behind a strayer; or he tears off like greased lightning after a frightened singleton. He seems to sense the game of bringing in those sheep in the shortest possible time.

LONELY FARMS AND HIGH MOUNTAINS

The early afternoon found us once more on the road. Skirting the high green hills with their little checkerboard fields marked off each from the other by blackthorn hedges or boldly cut from the solid rock at the edge of the sea, it trod the very toes of all the Glens of Antrim.

Portions of the hillsides are punctuated by farms, most of them well apart, lonely, as if their tenants were unneighborly. There is wild mountain country covered with scrub and cut by ravinelike fissures. Tiny streamlets and, in a few places, rushing brooks are a constant lure to the trout angler. As we rounded rocky Garron Point, Cushendall came into view across the bay, just beyond the little hamlet of Glenariff.

"Ye must have scenery the equal o' this back in America. It's so big. Take your Rockies, for instance. Och, they must

be . . ." Seldom was my fellow-traveler at a loss for an appropriate word. I think the lack surprised him. "But no, that's a different sort of scenery altogether. This round about here must put ye in mind o' your Eastern mountains. These might be a pocket edition of 'em.

"But many's the Ulsterman far away in your United States or Canada," he went on, "who feels as did Moira O'Neill when she wrote:

'Wathers o' Moyle, I hear ye callin'
Clearer for half o' the world between,
Antrim hills an' the wet rain fallin',
Whiles ye are nearer than snow-tops keen;
Dreams o' the night an' a night wind callin'—
What is the half o' the world between?'"

I liked my friend. I should have enjoyed sitting out in front of that little old-fashioned pub the rest of the afternoon listening to him tell of the happenings in those hills and vales during the time the MacQuillin clan fought Sorley Boy MacDonnell, that shrewd and doughty old warrior, for the lordship of "The Route."

After they were practically wiped out and the last of them of any consequence were living about Dunluce Castle, they were invited by Sorley Boy and a few of his relatives to a sort of picnic. With good food and drink, everything was going along fine when suddenly each of those who sat next to a MacQuillin produced a dagger and plunged it into the unsuspecting guest. That finished the MacQuillin clan.

"How far is it to Dunluce Castle?" I asked. "I'd like to see it this very night."

"Aye, ye can easily make it. It's not far, about 35 miles or so, depending whether we continue to skirt the coast to Ballycastle or go by the more direct main highway. Remember, I have to leave ye there as I've to catch the train for Belfast this evening."

Disliking main highways, I chose the coast route, though I had learned the road from here on was poor. The scenery proved different, more desolate. True, the road was narrow and in places very steep but not dangerously so, while the view seaward from the considerably greater elevation was enhanced by the presence of an America-bound freighter appearing like a child's toy as it ploughed the blue waters far below.

Beyond lay a portion of Scotland, plainly visible across the Irish Sea's North Channel.

From Cushendall to Cushendun, past Runabay Head, Torr Head with its lighthouse, and Fair Head to Ballycastle we

RAMBLES THROUGH ULSTER, NORTHERN TIP OF THE SHAMROCK ISLE



"WHEN IRISH EYES ARE SMILING, THEY STEAL YOUR HEART AWAY"

These Ulster youngsters mistook the author for their uncle who lives in America and "is tall and skinny like you." They dwell with their mother in the "gate-cottage" of an estate near Lisburn.



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Finlay Photographs by Bernard F. Rogers, Jr.

KING WILLIAM OF ORANGE PRESENTED THIS SILVER MACE TO LONDONDERRY

Inscribed with the Royal Coat of Arms, it "lies in state" in the Guildhall, or city administration building. "Derry" won the title "Maiden City" when it withstood three British sieges memorialized in a song, "The Maiden on her throne, boys, shall be a Maiden still."



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EVERY HOUSEWIFE IS A GARDENER AND FLOWERS BLOOM NINE MONTHS OF THE YEAR ALONG THE ANTRIM COAST

This lady's garden plot is 150 miles nearer the North Pole than bleak Battle Harbor, Labrador, yet she grows nasturtiums, tulips, and marigolds in profusion. Green pastures and fields in this vicinity show little sign of over-cropping. "Ditches," or bush-covered earth fences, climb the hillside above the cluster of red-roofed houses in the distance (see Plate VI). Ballygalley Head droops into the sea to the left.

Fusley Photograph by Bernard F. Rogers, Jr.



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Friday Photograph by Bernard F. Roques, Jr.

GIRLS BRAID TRAWL NETS BY HAND TO VARY THE SIZE AND SHAPE OF THE MESH

Fishermen demand nets in hundreds of odd designs. Imported hemp is sorted, cleaned, and spun before the workers braid it. Completed trawls, often more than 100 feet long, are dipped in tar to protect the fiber from salt water. Nets from Ulster factories find markets in many parts of the world.



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THIS RED-HERRING SHRUB MAKES ATTRACTIVE WALL "STUCCO"—BUT IT HARBORS MICE

Such a nuisance have the rodents become with their constant gnawing and nestbuilding that the owner plans to remove the closely-clipped *Cotoneaster* from the walls of her thatched house near Killadeas, County Fermanagh. When a new straw roof has been exposed a few months to the weather, it loses its fresh yellow color and becomes drab gray. The shoe-scraper on the doorstep has a bowl to catch the mud. On the inside wall of the vestibule hangs a barometer, with a thermometer above.

RAMBLES THROUGH ULSTER, NORTHERN TIP OF THE SHAMROCK ISLE



AT PORTRUSH, A SLICED SHOT MEANS A LOST BALL IN THE IRISH SEA

So fine are the views along this course in County Antrim that the visiting golfer has difficulty keeping his eye on the ball. An electric trolley, one of the oldest in existence, follows the coast, past white chalk cliffs and Dunluce Castle, to the Giant's Causeway (see Plate VII).



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Finlay Photographs by Bernard F. Rogers, Jr.

THE HOBBY HORSE GETS A ROUSING WELCOME WHEN IT COMES TO TOWN

Few youngsters are satisfied until they have ridden every steed under the canopy. They even follow the merry-go-round for blocks when the owner hauls it to a new district. Rows of tiny red homes, all alike, line many Belfast streets (see Plate IV).



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Finlay Photograph by Bernard F. Rogers, Jr.
SUCH ROUND TOWERS ARE COMMON IN IRELAND, BUT NO ONE KNOWS WHY THEY WERE BUILT

Druids may have erected them for fire temples, but more likely monks threw them up as watch towers when Danish invaders pillaged the country to abolish Christianity. This one, perfectly preserved from foundation to conical cap, is 85 feet high, and stands on Devenish Island next to the ruins of a monastery. Warring clans of Ulster and their enemies to the south used the island in Lower Lough Erne for frequent parleys, because its location, surrounded by water, made a surprise attack impossible (see Color Plate V).



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THIS MONOLITH IS SUPPOSED TO MARK SAINT PATRICK'S GRAVE. Born in Scotland, the patron Saint of Ireland was kidnaped by Irish raiders and sold to an Ulster chief. He escaped and later converted Ireland to Christianity. Peasants say his greatest miracle was driving snakes from the land. He died at Saul, where many believe he lies, rather than beneath this stone inscribed "Patric," at Downpatrick.



Finlay Photographs by Bernard P. Rogers, Jr.

"DADS" CHEERY SMILE BEAMS FROM HILLSBOROUGH FORT

Her mother, a native of New Orleans, married an Ulsterman and has lived in the Old Country 20 years. The ivy-clad stronghold, built by Sir Arthur Hill in the 17th century, stands in a fine park not far from Belfast, Hillsborough Castle, near here, is the official residence of Lord Abercorn, Governor of Northern Ireland.



ON NOVEMBER FIRST MANY A PINK AND HOUND COURSE ULSTER'S FIELDS AND HILLS

Though hunting is less popular in Northern Ireland than in England or the Irish Free State to the south, scarlet-coated equestrians with their dogs are often seen in full chase for fox, stag, or hare. The Master of Fox Hounds, standing at the edge of this road near Crossgar, led the field for many seasons, but now he says he is too old to join the hunt. Enthusiastic still, he follows by automobile.



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Fishay Photographs by Bernard F. Rogers, Jr.

A STAGHUNT NO LONGER MEANS DEATH TO THE QUARRY

Deer are hauled by truck or box car from a game preserve and released at the scene of the hunt. After the staghounds have followed and located the stag, it is captured and returned to a park.

went. Five miles out, across the rough Race of Sloch-na-Marra (Valley of the Sea), lay Rathlin Island, where Brecain, son of Niall of the Nine Hostages, was lost with his 50 currachs, and whose caves sheltered the fugitive Robert Bruce. To me this northern section is the most thrilling of all Ulster. There is poetry even in the names—Ballycastle, Ballintoy, Benbane Head, and Portballintrae.

A CASTLE BUILT ON A ROCK

Built on the tip of a noble promontory, wind-swept and sea-buffed through the ages, Dunluce Castle was barely distinguishable from its rocky foundation, camouflaged the better by long shadows of the coming night. No lights appeared through its crumbling windows and no voices or clanking armor sounded from within. But like some huge wounded bird, proud though spent, it crouched upon its headland nest.

I should have liked to wander about in the great hall, built some five centuries ago by a powerful MacQuillin, or to inspect more closely that part from which the kitchen slid into the sea, carrying to their death eight servants of a resident MacDonnell (see page 591). But the hour was late and the woman had departed with her key to the dizzy gangway which now replaces the drawbridge of olden days.

Near-by Portrush is one of the most popular summer resorts of the North. Thousands of trippers come across from Scotland in the summer months and a goodly portion of Ulsterites make it their headquarters during their vacation period and on week-ends. Portrush in County Antrim and Bangor in County Down vie each year in drawing the holiday crowds. Golf courses and swimming facilities are the outstanding attractions.

"I suppose ye'll be takin' a run to the Causeway," the hotel manager suggested. "It's worth seein' if only for the chance o' ridin' on the first electric tram line ever built in the United Kingdom."

I had intended seeing the Giant's Causeway, but had naturally thought to drive over in my car. The opportunity proposed, however, caught my fancy.

A "TOONERVILLE TROLLEY"

Next morning, not bright but early, I was directed to where I might board this primordial conveyance and I discovered the original "Toonerville Trolley"! It was hard to

believe Fontaine Fox himself had not been its designer. Two cars were coupled together, the trailer being closed like a little square box, so I took my seat in the first car. It had no roof, but an iron stovepipe-like support stuck up from the middle to maintain a pole which made contact with the overhead wire.

For seven miles we jolted, swayed, and pitched over a roadbed so rough that it was difficult to believe in the existence of rails. The scenery was compensating. From high above the sea we glimpsed wide stretches of sandy beaches or, on occasion, rocky caldrons of boiling surf almost perpendicularly below. Past Dunluce Castle, still indomitable in the morning light; past Bushmills.

We eventually lurched to a stop, as if we had tripped on a loosened sleeper. An additional mile or so had to be covered on foot and I was not sorry.

"Why, it's just like its pictures in all the railway coaches," volunteered a fellow sight-seer.

"Exactly," said I. This natural wonder, the Giant's Causeway, is most impressive in a gale when white-crested breakers hurl themselves against it. At a little distance it looks like the ruins of a roadway built by Titans using enormous paving stones (see Plate VII). Actually, it is an ancient lava flow which broke up into thousands of five- or six-sided basaltic columns when it cooled and contracted. Their number is estimated at 40,000, ranging in height up to 20 feet.

That afternoon I returned to Belfast.

About Waringstown, in County Down, remains one of the few neighborhoods where looms are still operated in the craftsmen's homes. There I thought I might get some hand-woven linen. Practically all of it nowadays is manufactured in modern factories, and as one drives through little villages, whitewashed rows of buildings formerly occupied by home-workers are entirely deserted or converted to other uses.

In this particular quest I was unsuccessful: I found only damask made in that manner. Some medium and heavyweight plain linen is hand-loomed elsewhere for the smart Paris dressmaking trade, but not in Ulster.

It was interesting, nevertheless, to visit one of these little homes, where the mother showed me how the shuttle darts back and forth as it carries the threads of the wool through the warp (p. 590). On the floor of the room, no larger than is necessary to



FLAX MUST BE PULLED BY THE ROOTS TO PRESERVE THE LONG FIBER

When green fields turn a grayish-brown, the plants are pulled, usually by hand, and rippled—drawn through the teeth of a comblike machine that strips off the seed. Tied in bundles, the stalks are then retted, or soaked in ponds to loosen the woody center (see illustration, page 609). When dried, the stems are run through a breaking machine with fluted rollers that crush the woody pith, without damaging the fiber. Finally a scutching machine removes the pulpy refuse, and the clean fiber is ready for the factories.

contain the loom with its stenciled design cards suspended above, her youngsters played with a kitten or scratched outlines in the damp earth with the end of an old bobbin.

Aside from the shamrock, probably the one thing which typifies Ireland to the average person throughout the world is linen. The largest production at present is in and about Belfast. Although the ancient Egyptians were known to use linen, it was not until the last of the 17th century that its manufacture gained strong foothold in Ireland. Flax was grown there at an early date, but Ireland owes much to a Frenchman, Louis Crommelin, who had been forced to flee during the reign of Louis XIV.

BOOM IN LINEN-MAKING

King William had promised Ireland he would help her increase her linen manufacture to alleviate the loss of her trade in

woolens, upon which the English had forced Ireland to place a prohibitive tariff for the protection of her own traffic in that staple.

Crommelin was selected to go to Ireland to instruct the people in the art of making a better grade. Under a government subsidy this skilled craftsman started his far-reaching work in Lisburn, eight miles from Belfast. Eminently practical, he brought over with him the most improved types of looms, and also introduced the spinning wheel.

Every item and angle in the creation of the fabric was thoroughly supervised by this ambitious Frenchman, who saw his labors rewarded with a marked jump in exports within a dozen years. By 1820 the increase over the exports twenty years previous was sixty-two fold! Practically every inhabitant of the four surrounding counties handled the product in one form or another, the farmer raising the flax along with his other garden produce, the women spinning it into



WHEN BELFAST WAS ONLY AN OUTPOST, CARRICKFERGUS WAS A THRIVING PORT

Ancestors of President Andrew Jackson kept an inn near the North Gate of the city, then one of the most important towns in Northern Ireland. A 12th-century castle projects into the sea in the foreground. Two grizzled towers, from which warriors could fling stones or molten lead, were built to protect the entrance. Offshore, John Paul Jones, in the *Ranger*, forced the British *Drake* to strike her colors in 1778.

yarn, and both sexes taking a hand at weaving in the earthen-floor rooms of their little cottages. The damp atmosphere made conditions ideal.

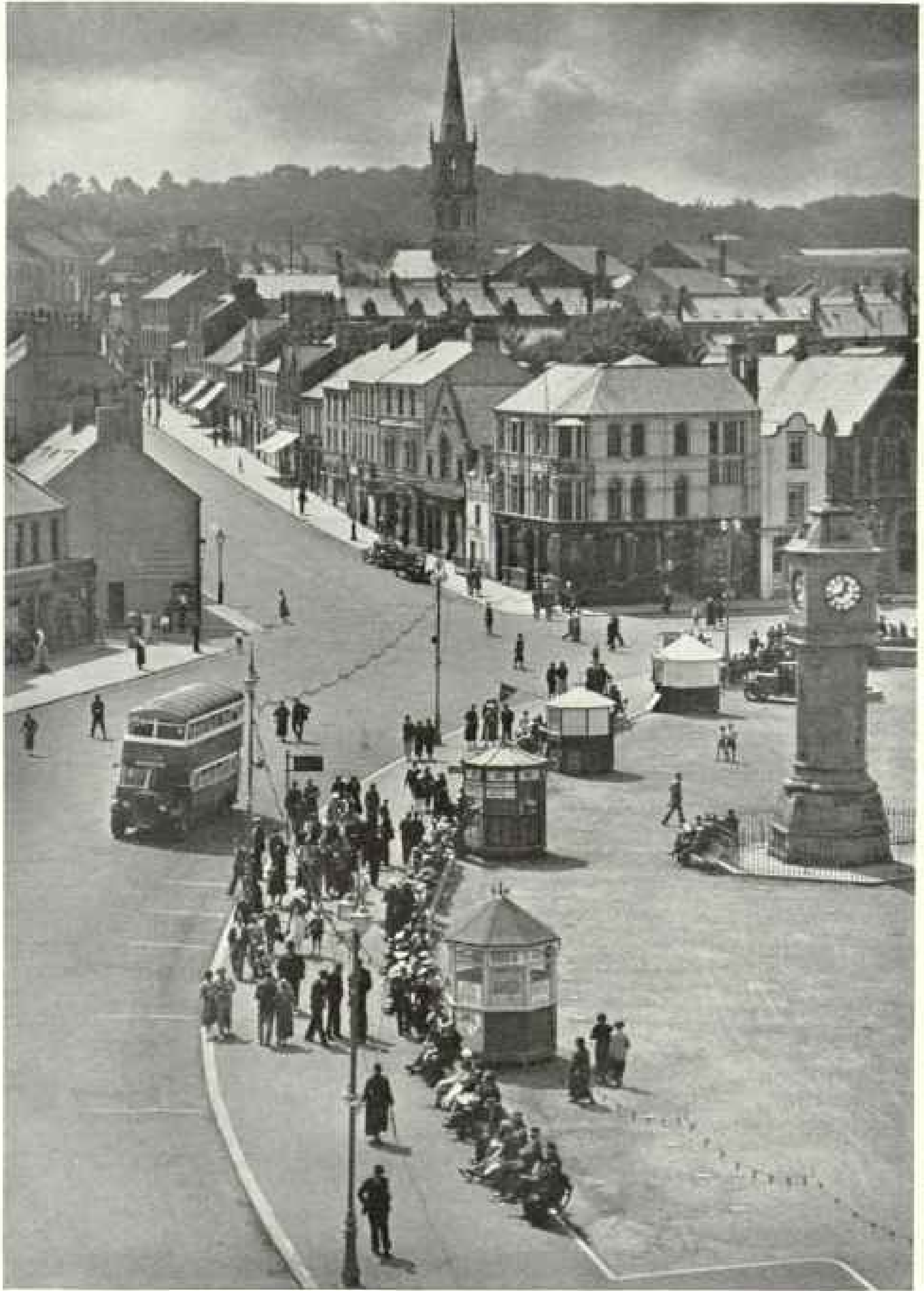
Introduction of mechanical methods about 1828 and the slowing up of the cotton industry at the time of our Civil War boomed linen perceptibly, while during the World War Ulster contributed to the Allies' airplane factories almost a hundred million yards.

Ulster's chief attractions, however, lie far from the centers of industry. Her network of highways and byways is ever beckoning. Whether by modern motor, proletarian bicycle, or on two feet, these arteries should be traveled. No ugly billboards mar the landscape. One's mind is not continually cluttered by such oddments as what to serve for breakfast, how to save your teeth, and what to put in your pipe. Sign-covered filling stations and ramshackle refreshment huts are still conspicuously absent.

Although I have never been aware of the fact that I am poetically minded, I must admit the place names of Ireland always stir me. I had been studying a map of the Six Counties in an endeavor to decide upon a drive through County Down: Dundonald and Donaghadee; Ballyroney, Ballynahinch; Dromore, Dromara; Killyleagh and Kilkeel. What euphonies!

Downpatrick lies at the very tip of that yachtmen's and duck shooters' paradise known as Strangford Lough. This inlet and Carlingford, on the boundary between Northern Ireland and the Free State, are appellative remnants left by Scandinavian invaders. Moreover, it was they who introduced the word *stadr*, which was added to the Irish tribal name *Uldh (Ulaidh)*, from which we get Ulster.

At Downpatrick Ireland's patron saint is supposed to have been buried (page 589). St. Patrick had been captured at the age of 16, probably somewhere in the



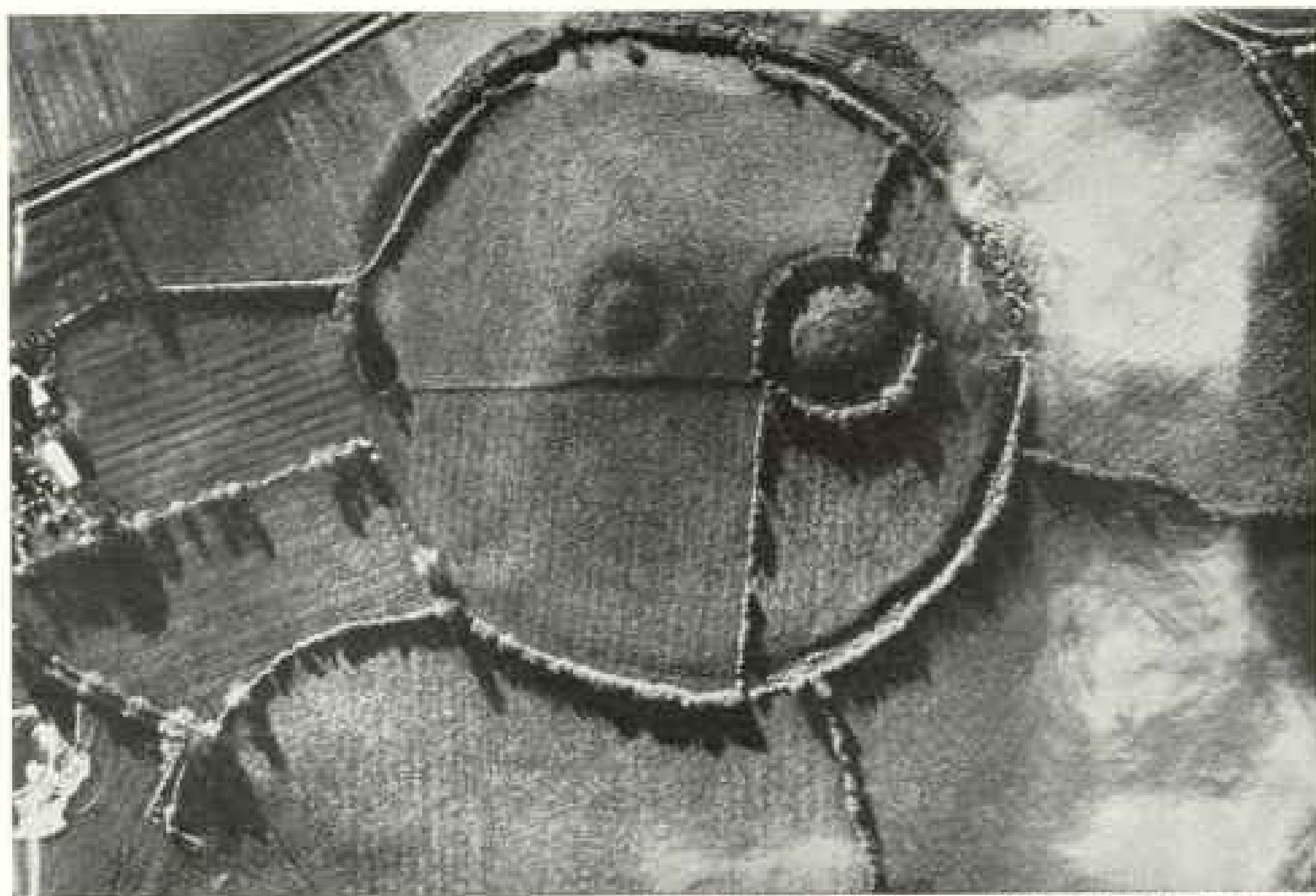
BANGOR, ONCE A MISSIONARY CENTER, IS NOW ULSTER'S ATLANTIC CITY

Early Irish zealots, including St. Columbanus and St. Gall, went from its abbey, Banchor, or "White Choir," to Christianize the heathen tribes of Central Europe. Later, Danish pirates invaded the town. Now kiosks line the sidewalk here at Quay Street and Promenade, with candy, cigarettes, and chewing gum for summer visitors.



TREES BOW TOWARD THE SETTING SUN ALONG THE COAST AT NEWCASTLE

Continuous winds from the east cause the trees to grow with their backs bent. They recall the lines of Yeats about the old brown thorn trees which "break in two high over Cummen Strand," and the "bitter black wind that blows from the left hand" (see text, page 606).



Royal Air Force Official Photograph (Crown Copyright Reserved)

LOOKING STRAIGHT DOWN ON NAVAN FORT, BUILT BEFORE THE TIME OF CHRIST

Although the ground seems level in the photograph, the inner circle of the stronghold crowns the top of a hill. An outer wall was built lower down to give added protection, and remnants of a third rampart may be seen in the upper right corner. An ancient king of Ulster made this stronghold, near Armagh, his capital. Here he kept his mighty Red Branch Knights.



THE MUMMYLIKE CARVINGS ONCE SERVED AS BUILDING STONES IN THE WALL

Workmen found a few of the sculptures with their faces turned inward when they repaired some of the walls here on White Island, Lower Lough Erne. The one at the left, known as the "shiel-na-gich" (stone image of a woman), had been laid in horizontally. A covered recess now protects them from rain and sun. Their origin is a mystery.

vicinity of the Severn, by the raiding "Scoti," as the Irish people were known to the Anglo-Romans, and brought back a slave. On a hill just outside Downpatrick there recently has been finished a tiny chapel to the memory of this missionary who for thirty years showed indomitable energy and almost superhuman tact in the eradication of druidism for the newer Christian faith.

St. Patrick and his successors were vital factors in the education of the early Irish race. They spread the knowledge of reading and writing. They inspired a regard for architecture and beauty. All through this period in history, the Church was the civilizing influence and, in Ireland, life during early feudal times was more governed by law and less by violence than on most of the Continent.

THE HERRING DESERT THEIR HAUNTS

On the vagaries of fishes often depend the destinies of whole districts. Were it not for cod, Newfoundland might have remained an uninhabited wilderness; the sardine gives us many picturesque towns of Brittany; and

the salmon built the canning centers of our North Pacific. Thousands of human beings rely for their livelihood and destiny on the continued presence of the finny hordes.

Such was the case in the little Ulster villages along the Irish Sea. But recently the herring have hied themselves elsewhere, temporarily it is hoped, with the result that the Government has been obliged to aid the families of these hardy seafaring folk where enforced idleness prevails.

More lucky is fashionable Newcastle, because of its situation (page 605). Nestled at the foot of Slieve Donard, impressive monarch of the Mourne Mountains, it commands the northern gateway to that celebrated kingdom immortalized through poem and song, while to the south lies the less extolled Carlingford Mountain, just across the border in the Free State.

Outside Newcastle stands one of those prehistoric monuments referred to as a megalith. Erected by the very earliest inhabitants, who came up from the Mediterranean in quest of the flint on the Antrim coast, these age-old relics are found in varying forms throughout Ulster.



HUMAN BONES WERE FOUND IN A VAULT BENEATH THE "KEMPE STONE"

The dolmen, near Dundonald, probably built in the Bronze Age at least 3,000 years ago, stands 10 feet high. The 17-ton capstone averages $3\frac{1}{2}$ feet in thickness. How men hoisted it atop the upright pillars is a mystery. According to folklore, dolmens, or "druids' altars," not only marked the graves of important tribesmen, but housed their spirits.

Though Antrim is the most romantic, in my estimation, Fermanagh is the most beautiful of the Six Northern Counties. Embellished by the lovely Erne Loughs, it nearly pinches off Donegal from her Free State and relies for historical prestige upon Enniskillen, whose brave inhabitants so ably repulsed the Papist Lords at the time James II was endeavoring to gain the North for his cause. This little town also bears the distinction of having her name bestowed on two regiments.

When William of Orange was so desperately fighting James at the Battle of the Boyne, he greeted a contingent who had come across country to help him, "Gentlemen, I have heard so much of you; let me see something of you." He apparently saw so well that he permanently incorporated them in the royal army as the Inniskilling Dragoons and the Inniskilling Fusiliers.

ANCESTRAL HOME OF FAMOUS MEN

It was at the conclusion of this very important engagement, when James had fled back to Dublin with the report his Irish

army had disgracefully run, that Lady Tryconnel remarked, "I see Your Majesty won the race!"

In contrast to beautiful Fermanagh with its lakes and trees, one passes through bare Tyrone, with its expanses of rolling grain fields and melancholy peat bogs.

On the banks of the Mourne River, famous for its salmon and trout (and not to be confused with the mountains of the same name on the opposite side of the country), lies Strabane, the nidus of many a man eminent across the Atlantic.

Guy Carleton, who defeated Benedict Arnold's attack on Canada; John Dunlap, a pioneer American daily newspaper publisher and printer of the Declaration of Independence; James Wilson, grandfather of President Woodrow Wilson, were among them.

Near by, the Mourne and the Finn beget the Foyle, that splendid river which flows past

"My Derry, my Derry! my little oak grove,
My dwelling, my home, and my own little cell,
May God the eternal, in Heaven above,
Send death to thy foes and defend thee well."



LEAVES OF SHAMROCK, IRELAND'S NATIONAL EMBLEM,
ADORN HER APRON

St. Patrick is said to have compared the plant's three leaflets to the Trinity. Farmers' daughters milk the cows and care for the poultry. At sowing and harvest time, they join their brothers in the fields. This girl, who lives near Dungiven, helps haul grain to the farmyard.

Rich in its historical inheritance, this fascinating old walled city is still spoken of as Derry, although it was renamed Londonderry by the Corporation of London during the Plantation period after the "Flight of the Earls" more than 300 years ago.

It wasn't every day I was invited by a Lord Mayor to lunch at his club, and the invitation rather awed me. Try as I would, I could not picture him as other than a very austere personage (decidedly not a mere person) in flowing robes and white wig.

I was greeted by a hearty handclasp and a slap on the shoulder, and "Yes, I'm Sir Dudley Macorkell; glad to see you, old chap!"

By the time we reached the table I was well on the road to knowing the complicated causes of the Protestantism of Ulster and the prevalence of Roman Catholics in the South.

A FAMOUS SIEGE RECALLED

This recital was exceedingly interesting to me because the events led to a siege famous in the history of the British Empire.

"Would you like the regular lunch?" asked my host. "I see we have steak and kidney pie, always good here, or bubble and squeak with boiled potatoes."

"Either suits me all right. I'm not very keen about squeaks and I hardly guess there's much nourishment in a bubble, but I'm not fussy."

I learned that "bubble and squeak" consists of beef and cabbage fried together.

"No doubt," chuckled my host, "they will be able to substitute mutton. It's apt to be lying about in some pot in the kitchen."

"Where did William of Orange enter the picture? One sees crude paintings of him in odd places all over Ulster. There are two or three I specially recall on the sides of buildings in Belfast" (see page 589).

"Well, when he landed in England in November, 1688, the Protestants in Ireland were in open rebellion against James. Skirmishes were taking place again between the two factions. The Celtic peoples who were for so long under the military hand of the Saxons now found they were in power of the soldiery and sought revenge. James had made an Anglo-Irishman Lord Lieutenant of Ireland. It was his duty to make



ACRES OF LINEN BLEACH IN THE SUN AT RANDALSTOWN

Air, moisture, and light, sometimes aided by chemicals, transform the gray, unbleached fabric into cloth of snowy whiteness. Workmen sometimes make patterns in the strips by underbleaching the fabric where a dark color is desired. Some manufacturers bleach the yarn before weaving it, because the whitening process shrinks the material as much as 25 percent in weight.



A FLOCK OF SHEEP GETS THE RIGHT OF WAY IN BELFAST

Much to the ire of motorists, cyclists, and motormen, vehicles must halt for herds of sheep and cattle frequently encountered in busy city streets.



THIS LITTLE PIG GOES TO MARKET ON ITS OWN HOOFS

More than a thousand cooperative societies help Irish farmers market their hogs, poultry, honey, dairy supplies, and cattle. Bowered lanes, like this one near Fintona, are seldom seen in Ulster's Six Counties, for there are few large stands of trees in the region.

all strategic points secure by garrisoning them with his followers. Enniskillen and Londonderry were two of the most important."

"Wasn't it at this time emigration became almost a rout?" I interrupted.

"Yes, and hordes of Protestants fled north, where they were in the majority. These two cities doubled and trebled in population."

"When was it those thirteen youngsters slammed the gate in the face of James' officers?" This incident had made a lasting impression on me since reading Macaulay in my youth.

"It may be that those chaps changed the complexion of Ireland. At the height of all the excitement the citizens of Londonderry received word that an army, under the command of the Earl of Antrim, was marching to occupy their town. Such excitement prevailed as we can hardly imagine. Some, feeling they were not in open rebellion against James, thought best to let them enter; others opposed doing so.

"While all the haggling was going on a detachment crossed the river and presented itself at Ferryquay Gate. They produced

a warrant for admittance of His Majesty's soldiers. The magistrates could not agree what to do. Like a flash thirteen young apprentices rushed to the guardroom for the keys and, pushing the gate shut, locked it. Thus began one of history's most famous sieges."

As we all know, England decided in 1920 to leave Ireland in the hands of its people. This is putting in a few words a decision of momentous importance. The majority in the North was not desirous of submitting to the rule of a commonwealth administered in Dublin. The solution was the formation of a State called Northern Ireland, comprising the six counties of Antrim, Down, Londonderry, Armagh, Tyrone, and Fermanagh, referred to collectively as Ulster.

Some still take exception to this cognomen. But Ulster has ever been a flexible area and nowadays it is universally used synonymously with Northern Ireland as distinct from the counties to the South. Though she has a government and Parliament of her own, diplomatically and financially, not to forget the most important tie, spiritually, she still is united with Great Britain.

THE SUEZ CANAL: SHORT CUT TO EMPIRES

BY MAYNARD OWEN WILLIAMS

AUTHOR OF "GREAT BRITAIN ON PARADE," "BY CAR AND STEAMER AROUND OUR INLAND SEAS," "EAST OF SUEZ TO THE MOUNT OF THE DECALOGUE," ETC., IN THE NATIONAL GEOGRAPHIC MAGAZINE

With Illustrations from Photographs by the Author

THE *khamzin*, bringing heat and dust from the Sahara, had blown itself out. Now heavy seas were helping pile up cabin sites on the Port Said beach, and massy spray, breaking completely over the western jetty, reached up to where the statue of the Suez Canal hero extends a bronze arm in welcome to this maritime turnstile between East and West.

Outside the long sea wall a small Yugoslav tramp wallowed under a deck load of lumber, her signal flags snapping, her engines at rest (see illustration, page 615).

Wrapping himself in an oilskin, the pilot entered the boat at our stern and the hawser was paid out till solid water slapped the faces of its crew.

Then we turned in a half circle and swung the smaller boat as children play snap-the-whip. Steered nicely to the swaying rope ladder, the agile pilot clambered aboard.

A landlubber at Port Said does not often have a staunch pilot boat under his command. So we visited the harbor and talked "shop"—the Canal.

Those who man the narrow sea lane between the two hugest continents never tire of singing its praises. From Port Said to Port Tewfik, in squealing dredge and quiet office, in lonely station and noisy machine shop, the workers love it. The British most of all—for your Britisher knows the sea and all that pertains thereto.

DISRAELI MAKES AN INVESTMENT FOR BRITAIN

Frederick Greenwood, entertaining Lord Beaconsfield at dinner, told him that Khedive Ismail's Suez Canal shares could be bought. It was nearly six years since the French yacht *L'Aigle*, with banners flying and the Empress Eugénie on board, had proudly started the procession of 68 ships which, except for four days during the rebellion of Arabi Pasha, has never since stopped.

There was no wireless then. But poor communications could not deter Disraeli. The 176,602 shares were definitely offered to him on November 23, 1875. On Novem-

ber 24 Rothschilds guaranteed the \$20,000,000. On November 25 the contract was signed in Cairo. On November 26 the British Consulate had possession of the shares. Only then did the editor of the *Pall Mall Gazette* publish the news of the transaction.

We swung past a dredger and were opposite the statue of Ferdinand de Lesseps (see page 613). The statue, which once stood at the end of the jetty, is now miles from the outer buoy. The lighthouse, which was built at the edge of the Mediterranean, is blocks inland. The hundred-mile short cut is getting longer.

If the sea and wind keep on their work, the Sunday promenaders on the Port Said jetty, which protects the Canal entrance from the Nile mud, may some day be able to walk halfway to Cyprus!

A BUSY, LOCKLESS "SAND DITCH"

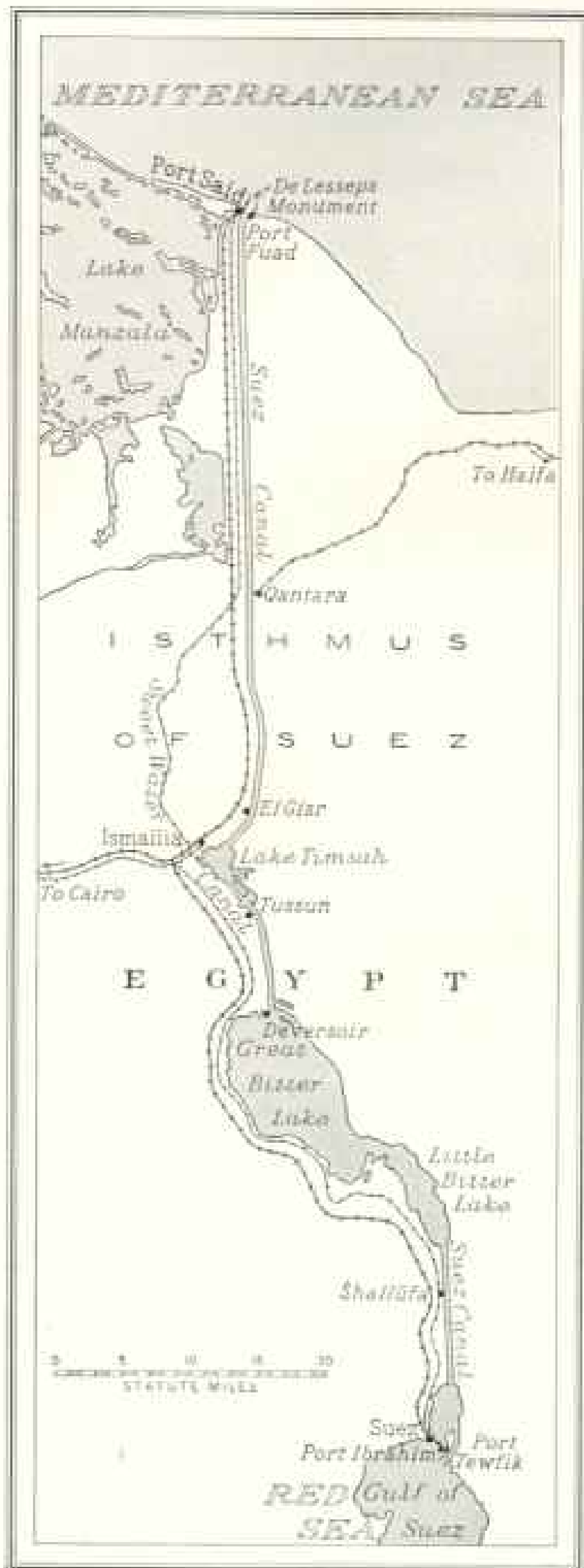
The Suez Canal is a lockless sand ditch connecting two landlocked seas and three lakes (see map, page 612). From the average crow's nest one may look down upon the highest earth ridge through which it cuts.

But with industrial Europe at one end and the populations and raw materials of the East beyond, this sand ditch is a barometer of world life.

Each separate cargo adds its clue. Coal, moving in the inverse direction; grain brought from unfamiliar fields; wood coming from Burma instead of Kamchatka; the appearance of unusual numbers of ships making their maiden trip; the use of Diesel engines instead of steam or oil fuel instead of coal; the numbers of soldiers sent out or brought back—thus world life registers its symptoms on the records of the Company (see text, page 619).

In normal times, along this short cut between hand and mouth, loom and back, and rubber tree and balloon tire, cargoes almost assemble themselves.

Freight pays the profits, but it is the demand of the passenger for more palatial accommodations, the vogue for round-the-world cruises, that makes the dredges squeal.



Drawn by Herbert Eastwood

A 100-MILE DITCH IN THE DESERT IS THE
"JUGULAR VEIN OF EMPIRE"

Through the 66-year-old Suez Canal, Great Britain and other powers are linked with their eastern realms. It is Italy's route to Eritrea, Somaliland, and Ethiopia.

A large proportion of the ships now using the lengthened, widened, deepened canal could have passed through it when it was first opened for traffic in 1869. But larger and finer liners are ever passing this way, coming to the Holy Land and Egypt from the rainbow crowds of Bombay, from Hong Kong with its barrel-chested chair coolies toiling upward toward "the Peak," from the cherry blossoms of Japan.

Ships, like travelers, are sun hunters, and when the cold winds sweep down from the Grand Banks and ice forms on the rigging, those not needed in the North Atlantic seek the Tropics. Many go by way of Suez.

According to the Suez Canal Convention of 1888, the waterway is "always to be free and open, in time of war as in time of peace, to every vessel of commerce or of war, without distinction of flag."

WHERE EAST MEETS WEST, AND NORTH,
AND SOUTH

Between Gibraltar and Massaua the shipping lanes are much the same, although Mediterranean ports furnish considerable cargoes.

But once outside the corners of Africa, the ships go their separate ways, following the African coast to Mombasa, Durban, and Capetown; crossing the Equator to Melbourne and Sydney, pushing up the Persian Gulf to Bushire and Basra, entering the roads at Bombay or the treacherous Hooghly, berthing at Colombo or Insulinde, waiting in the Woosung for the Shanghai tender, or steaming past the peerless cone of Fujisan to the harbor of Yokohama.

This one with the long, flat decks, tightly sealed, and a single funnel aft is a new oil tanker in from Abadan. That, whose dazzling upper decks are hung with passengers buying trinkets from a tossing bumboat by the cable-and-basket route, is a floating home for those who see the Bay of Naples, the Church of the Holy Sepulcher, Tutankhamen's tomb, India's burning and bathing ghats, Hong Kong's staircase streets, Japan's geisha dances, the Golden Gate, and two world canals—all without closing the wardrobe trunks placed in their state-rooms in New York or Southampton months before.



DE LESSEPS CONVERTED A SLOGAN INTO A REALITY

On the pedestal of this bronze statue at Port Said appears the Canal builder's ambitious watchword—"Aperire Terram Gentibus" (To Open the Earth to All Peoples). The outstretched right arm points along the "sand ditch" which shortened the route from London to Bombay by more than 5,000 miles. On the jetty stroll straw-hatted Westerners and fez-topped sons of the East, their ladies muffled in veils.

Near Suez are the remains of a lock which was part of an ancient canal, begun under Seti I, about 1300 B. C. Rameses the Great, between waging Hittite battles, temple building, and sitting for stone portraits, found time to continue the waterway to connect the Nile with the Red Sea.

Necho, son of Psammetichos, according to Herodotus "was the first to attempt the construction of the Canal to the Red Sea—a work completed afterwards by Darius the Persian—the length of which is four days' journey and the width such as to admit of two triremes being rowed along it abreast!"

A dream which takes 800 years from the time when one man grabs his pick until another sees triremes passing each other between river and sea is a potent dream.

Trajan seems to have kept the Canal in shape. The Caliph Omar had 'Amr ibn el-Asi restore the Canal to proper working order, but Al Mansur, near the end of the ninth century, wanted to stop the shipment of grain to Arabia, and so it was finally filled in.

For 2,200 years, various men were either building a canal, using it, letting it fall into disrepair, or deliberately destroying it. With such a record before them, one might



A PONTOON BRIDGE REPLACES SWARMING NATIVE "WATER TAXIS"

Until a few years ago, yelling boatmen fought for every passenger who landed at Port Said. Now one may walk ashore. Drama has been silenced, color dulled—and efficiency improved. After weeks on shipboard travelers from the Americas, Japan, Indo-China, India, Madagascar, or Australia welcome the chance to stretch their legs, sip a cooling drink on shore, or buy anything from shoddy to treasures in the canal-side city's shops.

have thought that De Lesseps and the present Company would have planned in terms of centuries. But the 99 years phrase imposed its convention, according to which, in 1968, the Canal will lapse to the Egyptian Government.

When De Lesseps was barnstorming England in behalf of the Canal, the British had the thought of making a railway do the work. That would now take 10 trains an hour, night and day. Were the Canal closed, India would be 5,000 more sea miles away.

What broad burlesque it would be today to have a Thomas Waghorn appeal to the India Office in London for permission to carry duplicate dispatches on horseback in an attempt to beat existing means of communication between England and the East!

NAPOLEON BALKED BY TIDE REPORT

Yet it was by carrying such duplicates in competition with the steamers around the Cape of Good Hope—and soundly beating them—that Waghorn convinced the British that a railway from Alexandria to Suez would be a good thing.

Ferdinand de Lesseps felt so grateful to this Don Quixote that he erected a statue to Lieutenant Waghorn at Port Tewfik (see illustration, page 622).

When Napoleon dreamed of divesting Great Britain of her Indian Empire, he had preliminary surveys made with the intention of building a Suez canal.

Lepère, Napoleon's chief road engineer, estimated that the Red Sea level was 33 feet higher than that of the Mediterranean. This miscalculation stopped Napoleon. But not De Lesseps. To him the 33 feet looked smaller than the 5,000 miles to be saved.

Then it was shown that the difference in level between the two ends of the canal would, by comparison, make the Dardanelles look like a waterfall.

De Lesseps appealed to the Viceroy, Mohammed Saïd Pasha, and heard from his friend these cheering words: "I am convinced and I agree to your plan: it is understood between us. You can count upon my support."

That was in the middle of November, 1854. In two weeks, De Lesseps had his coveted concession. He thought that the



A SMALL STEAMER WALLOWS IN THE WHITECAPS OUTSIDE THE PORT SAID ENTRANCE TO THE CANAL

Signal flags snap in the cool, brisk breeze which follows the hot *khamzin* from the Sahara. The men in the pilot boat draw their oilskins more closely about them as their little craft ships spume, and the Yugoslav tramp which has been tossing outside the west jetty puts in for port.

world would demand a slice of the melon. But it was five years before digging began.

There was a time when bankruptcy hung over the Canal and for years the interest coupons were not paid.

It is hard to believe that when the Canal was completed steam had not yet won the seas. When its supremacy over sail was proved, the success of the Canal was assured. A sailing vessel might waste the time required to circle the Cape, but a steamer's time, fuel, and bunker space were valuable.

DIGGING IN THE DESERT SUN

Not all of De Lesseps' difficulties were diplomatic or financial. The physical labor of digging a canal under the fierce sun of that desert, with little aid from machinery, was inconceivable. Even a seventy-mile sand ditch is a considerable problem for hand labor, armed only with primitive tools and soft baskets to transport the dirt.

The Viceroy provided 25,000 workmen for whom the Company furnished food and pay high enough so that conscription was not necessary. But before he would ratify

the firman, the Sultan of Turkey insisted upon the suppression of the *corvée*, or use of forced labor, and this necessitated the wider use of machinery in the building of the Canal.

Much modern excavation machinery was mothered by the necessities of the then unprecedented task at Suez.

It cost \$2,000 a day to bring enough water by caravan to supply 25,000 men, so the Company constructed the second of the two essential canals.

The Sweet Water Canal takes off from the Nile below Cairo and, splitting into a T at Ismailia, flows to Suez and Port Said. On it are locks by which small boats can step down to the traffic canal.

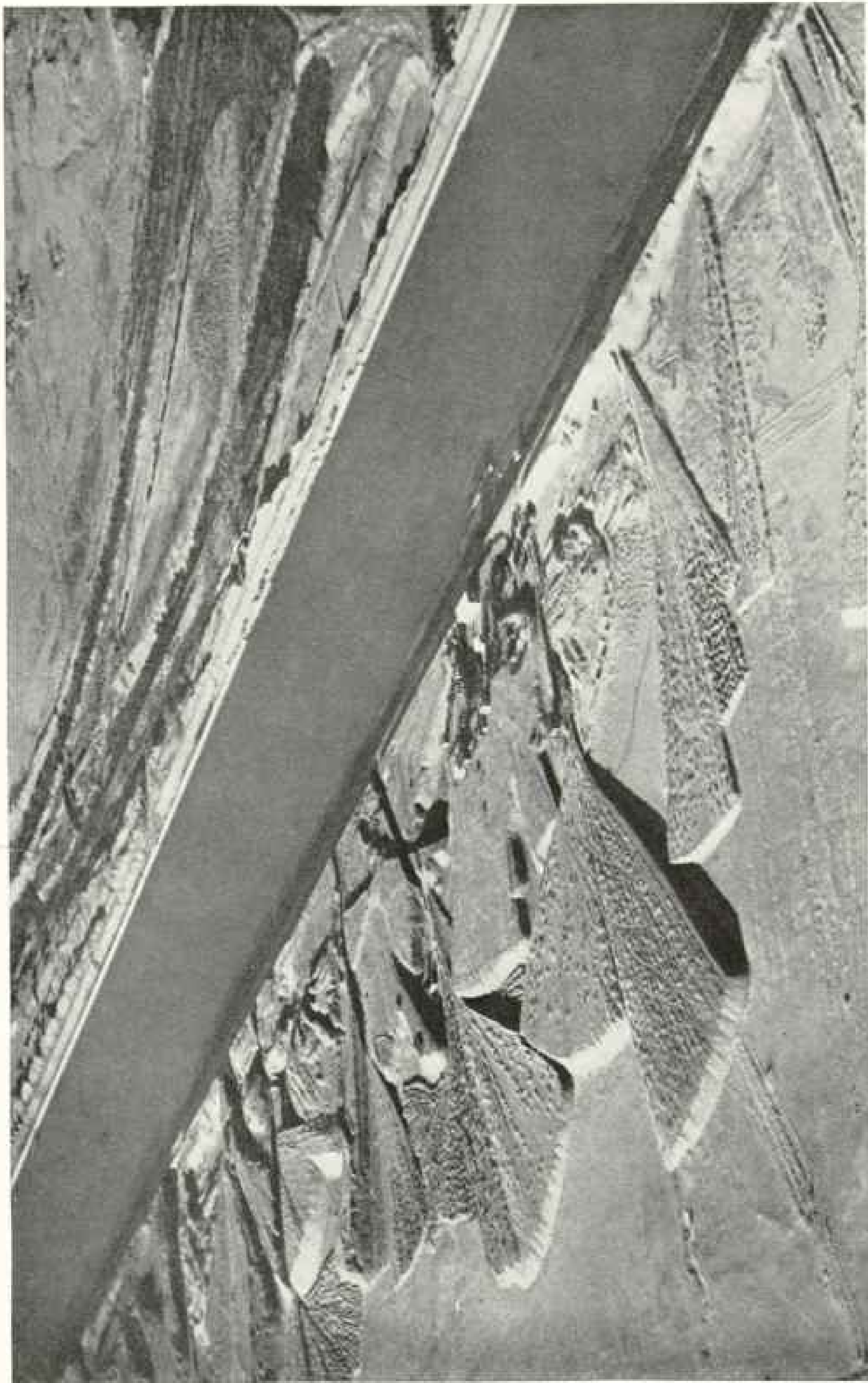
THE LAND OF JOSEPH AND HIS BRETHREN

For many miles the Sweet Water Canal follows an ancient bed dating from the time of Tutankhamen. This waterway was first constructed to win from the desert the fertile land of Goshen, where Joseph and his family found a home and where the Israelites were later forced to make bricks



THE CANAL IS A TRIUMPH OF WILL OVER APATHY, OF WATER OVER SAND

The historic "twixt West and East" was started by hand labor, but now several varieties of dredge are used to maintain and deepen the waterway. The slender arm carries a sluiceway along which the sand and gravel sucked up are washed shoreward by water and dumped in the desert. Men are stationed along the sluice to keep the soupy mixture moving (see illustration, page 622). Originally 26 feet deep, much of the Canal today has a depth of 42 feet, and all but a very few modern leviathans may steam through it.



Royal Air Force official photograph (Crown copyright reserved)

BUT FOR A SEA-LEVEL WATERWAY, ASIA AND AFRICA WOULD HERE BE ONE

In the center is a Canal station, with its landing stage. Fanlike dumps show where dredges have piled back the wind-blown sands or emptied loads of dirt or shale excavated from the bottom of the Canal. Traffic on this water highway is a barometer of world trade. Thousands of ships pass through it each year—5,663 in 1934.



THE CANAL, LIKE MAIN STREET, HAS ITS FILLING STATIONS

Motorboats get water-side service from fuel pumps at Port Said. The Canal area is fenced off from the town, but such barriers cannot counteract the lure of the waterfront. Youngsters—and their elders, too—come down to look at the ships, and perhaps to pick up a few coins from travelers

without straw under the lash of the Pharaohs.

The traveler hanging over the rail at Port Said and watching the fresh water tubing throb with every stroke of the pumps may not realize that this water has come from reconstructed waterworks which first served the people of Egypt before the Exodus.

From the very first, De Lesseps showed a deep interest in humanitarian measures and from 1856 the employees have shared in the profits.

There is a tradition in the Company that a man never quits and is never dismissed. Skilled workers pass an entrance test or come up from the ranks with a year's probation. Many of the pilots have commanded their own ships, but they spend two years on probation. A few picked day laborers attain permanent work.

Although the model town called Port Fuad, in honor of the present King, was built by the Company on the barren east bank opposite Port Said, with homes and even gardens for skilled workers and laborers, some still prefer to draw a money allowance and live on the west bank near the cafés and movies.

Some feel that the Canal pays too well and trade depression has brought some criticism of Canal profits. But the main thing for those who foot the bills is continuous, efficient service.

On the whole, the shipmasters pay the dues with a feeling that a few cents for each thousand ton-miles saved is not exorbitant, and the average passenger is glad to pay the equivalent of \$2 to avoid going around by the Cape, especially since the Canal fee usually is included in the price of his ticket.



SAILS SURVIVE, THOUGH SHOVED ASIDE BY STEAM

Only local fetching and carrying is done by the small, wind-propelled native boats (see illustration, page 630). Yet the Suez Canal dates from an era when much of the world's commerce was carried by tall-masted sailing vessels.

The Compagnie Universelle du Canal Maritime de Suez is registered as an Egyptian company under Egyptian law, with its main administrative offices in Paris. The president is always French, as are also 21 of its 32 directors and its entire secretariat and higher personnel. The general workers are a cosmopolitan group. I found a Corsican and an Italian in charge of one Canal station. At the next, the two men were a Syrian and a Greek.

"THE SHIPS MUST GO THROUGH"

The Canal Company does nothing that it can get others to do equally well. When hand labor gave way to machine operation, various entrepreneurs were given the work of excavation and the majority of the digging was done by contractors. Part of the west jetty, made up of cement blocks worth \$65 apiece, was built by contract.

The Company had to construct a fresh-water canal and filtering stations in order to carry on its basic work. But it leaves the delivery of the water to others. The personnel has just three things to do: to keep the Canal open, to keep the ships passing through, and to keep the records.

The maintenance of the Canal and its improvement is in the hands of the Works Department, whose officers are first class graduates from the *École Polytechnique* and the *École Centrale* in Paris.

One never knows how much equipment is required in the upkeep of a canal until he accompanies a member of the Works Department through the shops and around the small harbor where the broken-toothed dredges come back to have their dentistry done. It looks as though every disabled or incorrigible piece of wood or metal in that part of the world were dumped about.

Compared with the Works Department, the Traffic Department has a nice clean job. One sees no clutter of papers, no bulky correspondence. The principal officers are recruited from the French Navy.

There is, in addition to the watchfulness of captain and pilot, an eye on every ship that goes through the Canal from the time she is sighted in one sea until she is turned loose to shift for herself in the other.

The British Post Office refused to recognize the Canal for two years. "Too slow," they said. Yet nothing but an airplane has equaled the speed actually attained between Port Said and Port Tewfik on the Canal itself. The Traffic Department has some little Thornycroft boats which can make the trip in a trifle over two hours and a half.

The speed for steamers is 6.21 miles an hour, but pilots exceed the limit when side winds prevent the ship from obeying her rudder at a slower speed. The Canal is now 104½ miles long, jetties having added considerably to its length in recent years.

During the transit of the Canal two pilots are used, each making one-half the journey. They serve only in an advisory capacity, though many a captain lets the pilot handle the ship as though it were his own.

Officers of the Company unhesitatingly sacrifice a single vessel to the common good. A shipload of explosives was sunk near the Port Said waterworks and a cargo of benzine in the Commercial Basin. But ships carrying dangerous cargoes are being removed farther and farther from the main anchorages and as careful a quarantine is kept against spontaneous combustion as against cholera.

THREE TOWNS OF THE CANAL

Of the towns on the Canal, only one existed before De Lesseps began his work. Suez, then a miserable Arab village, is now a miserable Arab town. A few apartment houses are rising on squares of salt-encrusted land which are filled in to bring them up to the level of the street. The Sweet Water Canal brightens things up and flowers, fruits, and vegetables line its banks.

Clouds and the softer light that comes with them give to nondescript Suez a beauty such as many a greener, lovelier spot would envy. The upper curve of the Red Sea becomes purest emerald and be-

side it the tawdry town seems carved from silver and onyx. In the background, their imposing flanks mottled by shadows into a chocolate and coffee marbling, lie the barren hills of Africa.

In the middle distance gray oil tanks seem almost phosphorescent in spite of the brightness of the whole scene, and tall chimneys of the Port Ibrahim refineries rise like full-leaded exclamation points.

Suez has little to do with the Canal. It lies up a creek in which the dhows from the Arabian coast are stranded at low tide and is connected with Port Tewfik by a causeway.

Port Tewfik, like Port Said, is a by-product of the Canal. When there was need for land on which to build, the dredges dumped it there.

Along the Canal front runs the Avenue Hélène, a shady bund with a comradely café or two. Nursemaids occupy shaded benches and one healthy little miss of three or four, who had fallen quite in love with Lieutenant Waghorn, stood gazing at his monument for minutes together.

Port Tewfik, gateway to the teeming East, is provincial. On the Canal and hence a busy place, it is not a port at all. Ships wait in the Gulf of Suez until the pilot takes them in hand. Ships coming down the Canal don't stop at Port Tewfik. They only drop the pilot and signal "Full Speed Ahead."

Port Ibrahim is principally a haven for tankers which come there to spew up the viscous crude oil or pump forth a silver stream of refined petroleum.

To the east of Suez there was formerly a large camping ground for Mecca-bound caravans made up of swarthy Egyptians, slender Syrians, serious-faced Turks, and Moslems from Turkistan clad in wadded gowns made of bright-colored cloth like upholstery cretonnes, with their women hiding behind horsehair veils.

Now this vast expanse is deserted. A single stalking camel or a Bedouin on horseback would make it a desolate picture. Lacking the living element, it is only empty.

SIGNALS FOR PASSING SHIPS

The first station north of Suez is Shallúfa. Near the small wharf are some brightly painted buoys. At the foot of the signal mast are the canvas balls, cylinders, and cones used to signal to passing ships. Back



Photograph by Dr. Robert Randall.

EGYPTIANS AND ITALIANS MATCH THEIR SKILL AS FISHERMEN

Friendly rivals are the Italian, staggering along under a bumper load, and the Egyptian father and son, displaying a basket of whitebait, which looks more like bait than a table delicacy. Fishermen cast their nets near the north entrance of the Canal, and in Lake Manzala, a famous fishing ground behind the native quarter of Port Said, 7,000 boats compete with pelicans, herons, and flamingoes for the catch.

of the homes and office is a water tank served by a windmill and provided with a filter. A few trees give sparse shade. That is all.

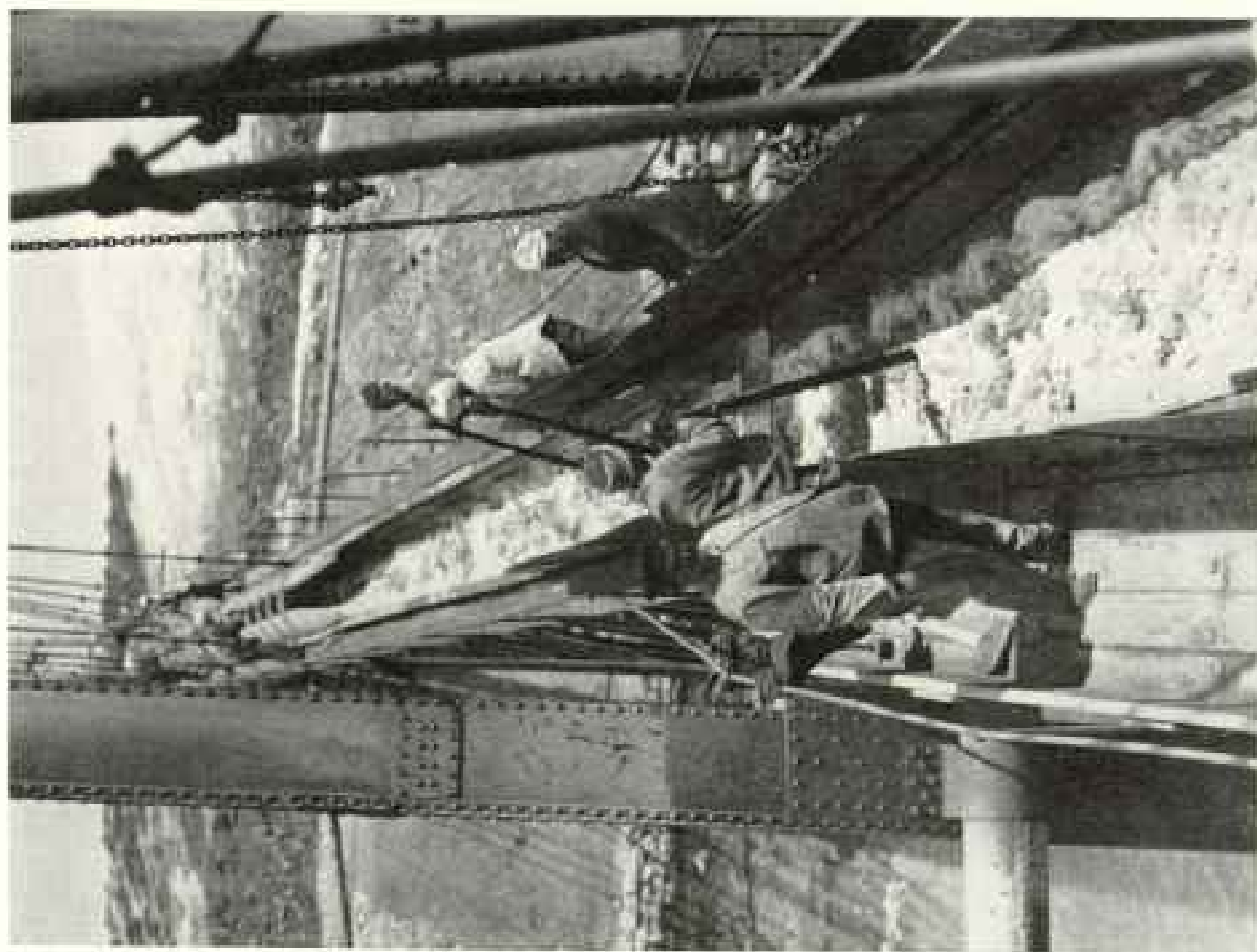
Along the northern half of the Canal the railway runs just behind these Canal stations and the station master can keep in touch with the world on land as well as the world of ships. But Shallûfa is a lonely spot. The visitor is greeted like a prodigal son.

Within their limits, and subject to the ever-present telephone, the station masters and their assistants are supreme. Suez has a four-foot tide. The Mediterranean's

tide is so slight that sometimes the statement is made that there is none at all.

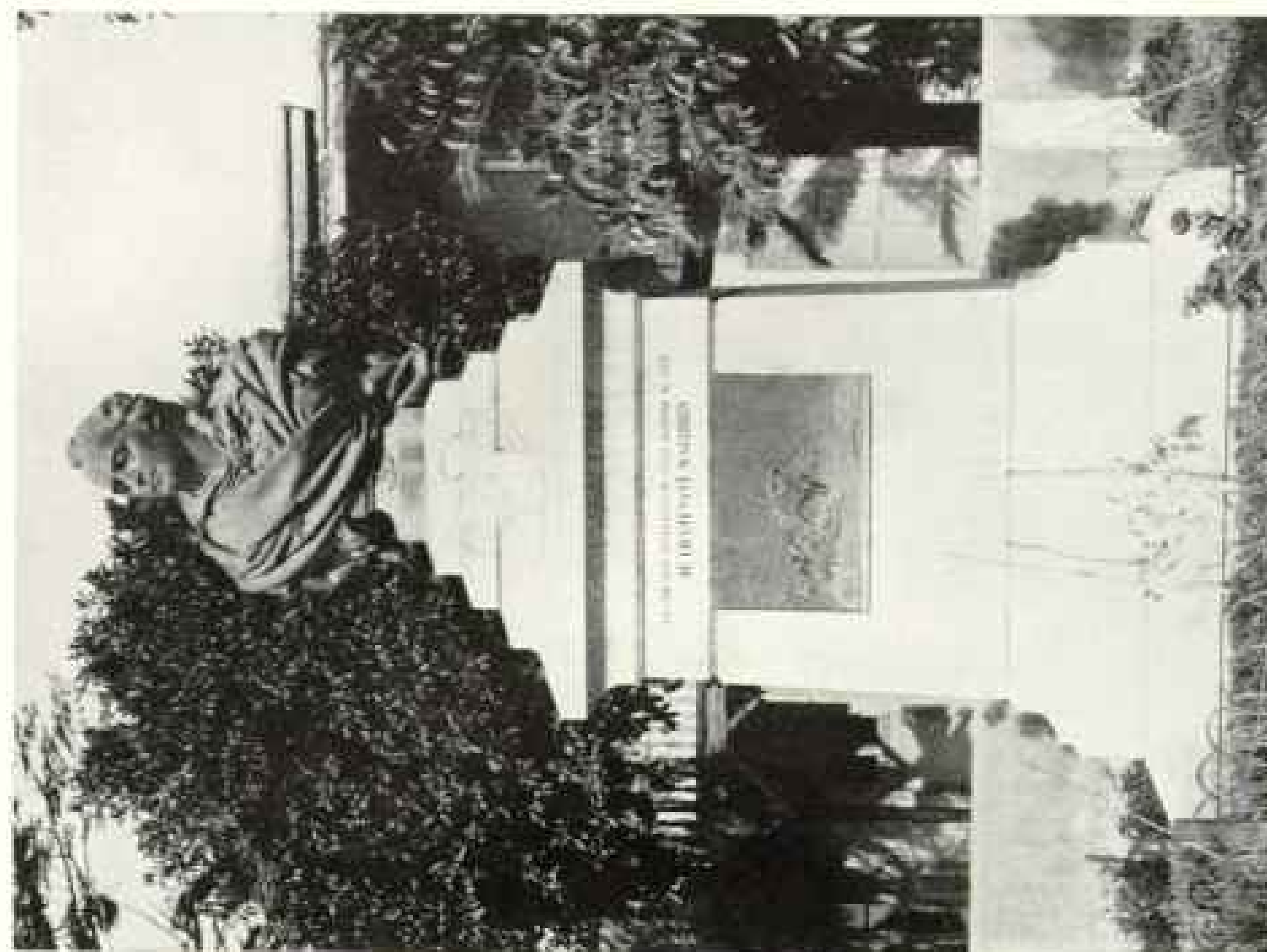
Some ships have a strict mail schedule to keep. Others are unkempt tramps whose engines need no slowing down to keep them within the proper speed. Winds sweep across the desert with tremendous force, although the banks of the Canal, behind which a steamer looks like a procession of masts, protect all but the largest ships. Dredges, with barges alongside, are always shifting their position.

The station master knows no favorites. It may cause the captain of a great cruise ship some chaffing at table if he has to



CONSTANTLY THE CANAL IS FIGHTING THE DESERT

These dredges combat the shallowing effects of wind-blown sand and make the big ditch even deeper. Here the sand and gravel sucked up from the bottom are being sluiced out through a long, elevated channel and emptied on the bank (see illustrations, pages 616 and 617). Near this spot a Turkish force unsuccessfully attacked the Canal during the World War.



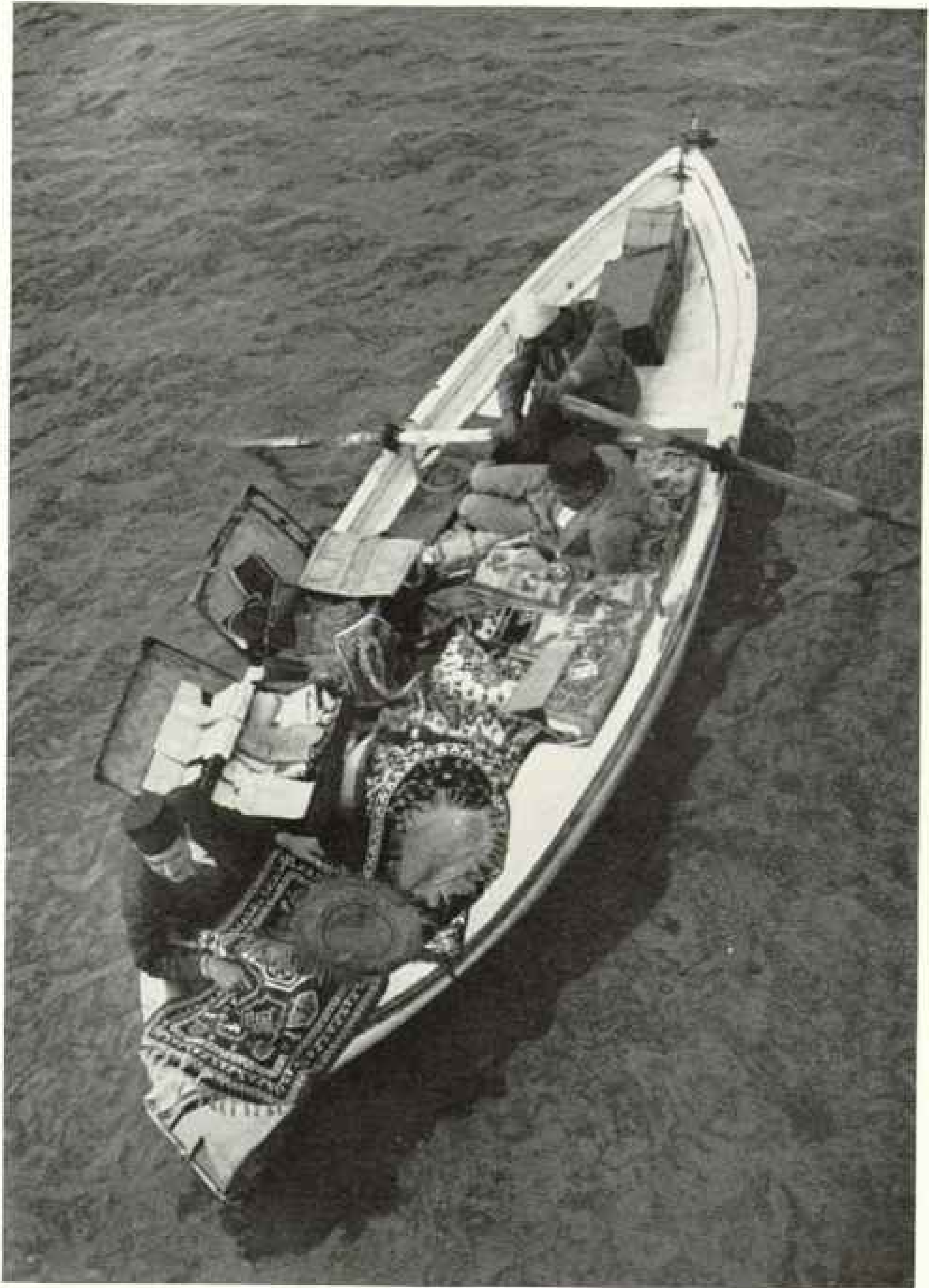
DE LESSEPS' TRIBUTE TO WAGHORN, OVERLAND MAIL CARRIER

At Port Tewfik the French Canal builder erected a monument to the British officer for his efforts to link the Mediterranean and Red Seas by land-going postal and passenger service. By carrying duplicate dispatches in a race with steamers rounding the Cape of Good Hope, he directed attention to the time-saving of the Egypt route (see text, page 614).



THE KING'S MAIL TIES UP WHILE MERE COPRA MOVES AHEAD

Steamers obey the orders of the station masters, whose decisions depend on wind and tide. Often the most palatial ships must stop while a "tramp" steams proudly past (see text, page 621).



Photograph by Dr. Robert Ramsdell

IF CUSTOMERS WON'T COME ASHORE, THE STORE WILL PUT TO SEA

The stop at Port Said is often short and some travelers stay aboard their ships. So the energetic native salesmen prove that the Western World has no monopoly on go-getting salesmanship tactics by taking their shops afloat and tempting passengers over the ship's side with a varied array of merchandise, good and bad. The stock on display in a typical bumboat ranges from machine-made plush and cheap embroidery to genuine oriental rugs. Each sale means lengthy bargaining, with the seller usually naming a price far in excess of what he expects to receive. Purchases are hoisted aboard by the cable and basket route.

tie up and let a smudgy tramp steam slowly by. But he takes his orders from those who know the Canal and would lose their jobs if they didn't. As the tide ebbs and flows between the Red Sea and the equalizing tanks of the Bitter Lakes, the ship facing the current, be it ragged tramp or well-groomed merchant prince, ties up.

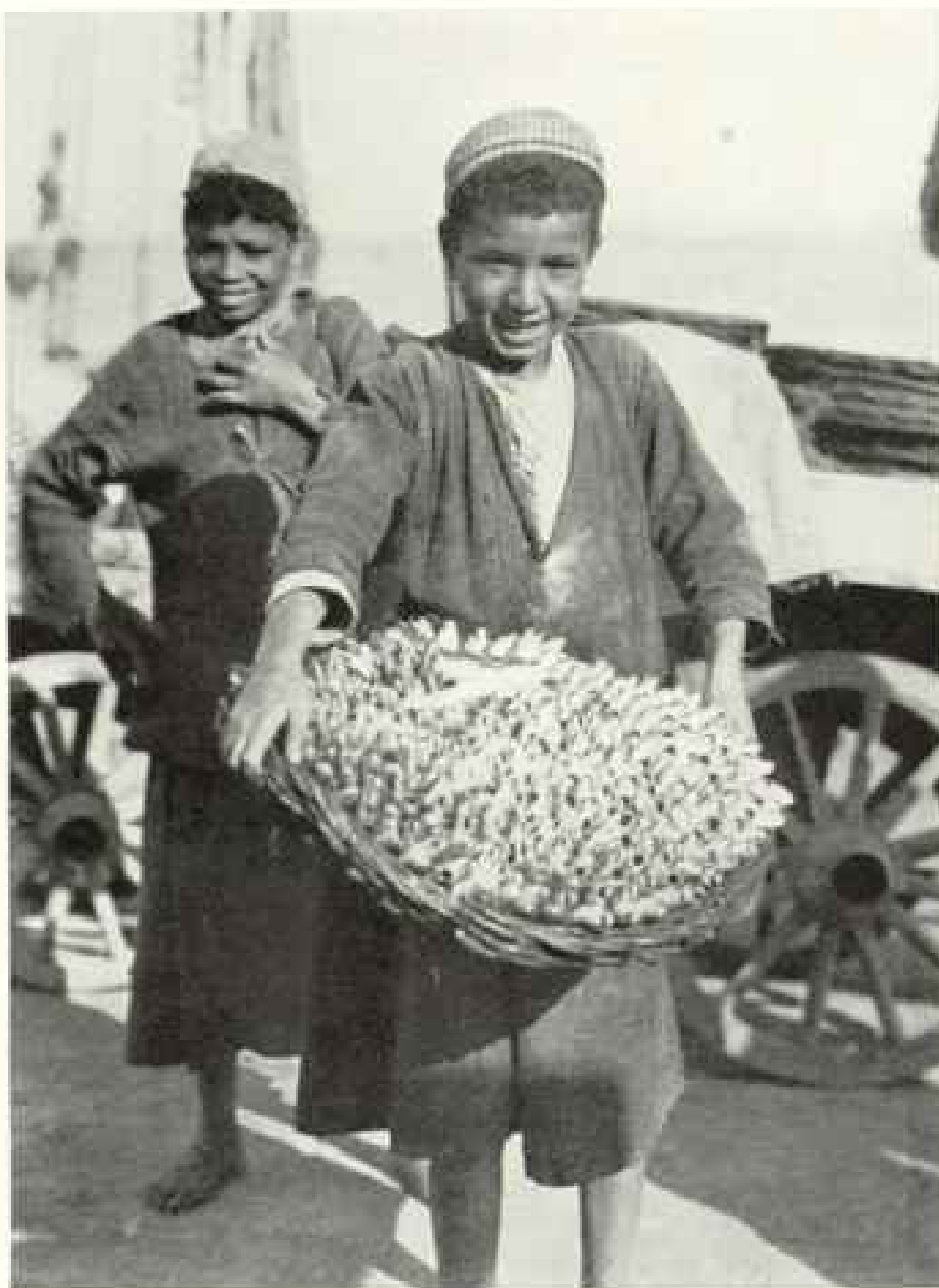
BEDOUINS' TILL AN- CIENT CANAL BED

I had been past Shallûfa several times before I knew how interesting it was. From the upper deck of any decently large steamer one can here trace the course of the ancient canal. Making the moderate depression more conspicuous are haircloth tents of the Bedouins, who plant grain and vegetables in its concavity. The station master of Shallûfa uses a section of the ancient canal as a private garden.

That old canal seems a puny thing beside the modern water-rift in the desert. But the same sort of tools and baskets were used in building both. Now there are three different types of dredges at work within a mile of the old canal bed (pages 616, 622).

No two of them seemed to be digging up the same sort of bottom. The first one visited was scooping up a conglomerate of shells and yellow clay in its 36 sturdy buckets. The next was bringing up blue clay and shale, which it emptied beyond the embankment by means of a long arm.

A machine like a pile driver was breaking a stratum of shell-filled rock south of the Little Bitter Lake, so that the dredges could work on it.



A SMILING SON OF EGYPT OFFERS A TRAY OF HAND-SELECTED FISH

The fingerlings are as much alike as sardines in a can, for Port Said dealers long since learned to sort and arrange their wares to catch the buyer's eye. The mixed haul of fish and crustaceans is painstakingly picked over by hand on the quay and laid out attractively in baskets or trays.

The Bitter Lakes give the steamers a chance to speed up and pass each other without tying up, and they act as a buffer for absorbing the power of the tides from Suez. Beyond Deversoir, the waste weir, where the dredges have piled up a ground plot for one of the prettiest and loneliest of the stations, no tide is felt. At Suez there is a flow for seven hours and an ebb for five.

VESSELS MUST LIGHT THEIR WAY

When, in 1887, it was decided to use the Canal day and night there arose the



THESE PIGEONS MUST EAT WHETHER THEY WANT TO OR NOT

Egyptians in the native bazaar of Suez have a way of forcibly feeding them by taking grain into their own mouths and blowing it into the crops of the birds. In this way a dealer can feed a whole crate of pigeons in an unbelievably short time.

question of whether the Canal or the ships should be lighted. The latter was decided upon. A fine experience is to lie flat on the bow above the headlight while its silver beams advance into the mystery of Asia on the one side and Africa on the other. Then another Polyphemus eye far down the Canal turns its lidless stare upon one and comes silently on.

Aside from the lighthouses at either terminus, two lights marking the channels at the ends of the Bitter Lakes and an occasional beacon at a curve in the Canal, only the bright stars of the desert light the pathway.

The one station between the Bitter Lakes and Lake Timsah is near the Arab village of Tussun, with its whitewashed sheik's tomb standing out at night like a chalk sketch on dark-blue paper. Here the Canal dredges brought up such interesting fossils of Miocene animals and wood that scientists conducted excavations of their own.

A TOWN WITHSTANDS THE DESERT'S SIEGE

Lake Timsah could well be exploited for its beauty. Blue as the sea and caught between golden sands and swamp verdure

of the deepest green, it has on its north bank the attractive little town of Ismailia, a charming example of something made out of nothing.

With every heavy wind the desert tries to recapture the little town. But the inhabitants fight back so successfully with water that the gardens of Ismailia are noted throughout the Delta.

Fleet sailboats skim the lake. A golf course wallows its way through the sand. A movie or two bravely tries to live up to its advertising. There is tennis and bright-eyed Italian and French girls or lithe young men with whom to play it. The International Club dances are famous.

"Barbe du Pasha" trees, so called because their blossoms resemble a pointed beard, shade the streets. Enormous masses of purple bougainvillea and a scarlet-orange flower that looks much like it climb the trees, drape the fences, and form arches over the entrances to the well-built homes.

In a garden are the ancient monuments found while excavating the two canals. The \$200,000 palace which the spendthrift Ismail Pasha built to celebrate the completion of the Canal is now no more and nothing along the Canal today suggests that at the opening ball 6,000 persons—2,000 of them self-invited—here ate and drank while Ismail celebrated the greatest event of his rule to the tune of millions of dollars in expenses.

The house of De Lesseps stands in its lovely garden before which camels pass, unable even by their presence to give a desert aspect to this colorful street overhung by trees. Across the Sweet Water Canal there is a garden where roses somehow preserve the softness of their velvet petals. Yet, were it not for its charming family life, Ismailia would be only a smaller Port Said.

At the corner of Cairo and Constantinople Streets I saw a cross-eyed Arab jealously guarding a half-dozen tomatoes of irregular shape and unimposing size. Near at hand a roadside cobbler, his angle-iron last driven deep into the sands, was replacing the one original bit of a desert man's footwear.

There was, of course, that oasis of Islam, always suggestive of cleanliness and quiet, a mosque. Down a dusty street a native wedding packed itself into three or four loose-jointed victorias, while a flock of milch goats rested in the warm sand.

As one comes to the station, he sees a bare-legged gardener watering a flower-garden that would do credit to Peradeniya or Singapore, and he realizes that this oasis town is preserved against its enemy, the desert, by little drops of water triumphing over little grains of sand.

FIVE MONTHS TO FILL A LAKE

North of Lake Timsah the canal diggers met with their most serious obstacle. El Gist, the embankment, here crossed the course of the Canal and made it necessary to remove approximately twice as much material by primitive methods as all the dredges now remove each year. Here 25,000 *jellahin* toiled for two years digging a narrow channel for the dredges. When the waters of the Mediterranean were let into the swamp that is now Lake Timsah, it took five months to fill.

Qantara—"the bridge"—marks the ancient route between Africa and Asia, between the Valley of the Nile and those of the Tigris and Euphrates, between many-godded Luxor and Nazareth. Here the Canal splits a land route old as the caravan. By this way came Joseph, sold into Egypt as a slave, later to rescue it from famine. By this route came that other Joseph, with Mary and the Christ Child.

During the war Qantara was the military base which saved the Canal and from which Palestine was won from the Turk. A dozen diverse races of Indians, wearing the uniform of the British forces, as well as Tommies from the four corners of the Empire, were quartered here.

Trains whistled as they crossed the new bridge that again connected Asia and Africa. Motor lorries roared back and forth. Airplanes circled overhead. Walls of fodder and supplies flanked the Canal. Out of the desert warring Aladdins conjured a full-grown military camp.

A FERRY LINKS TWO CONTINENTS

The Turk was never able to harm Qantara. But Time finished it. No longer does the air of victory hang about the spot. There is little to indicate that trains once passed this way from Cairo to Constantinople (Istanbul) and that for a few months Asia and Africa were here linked by rail.

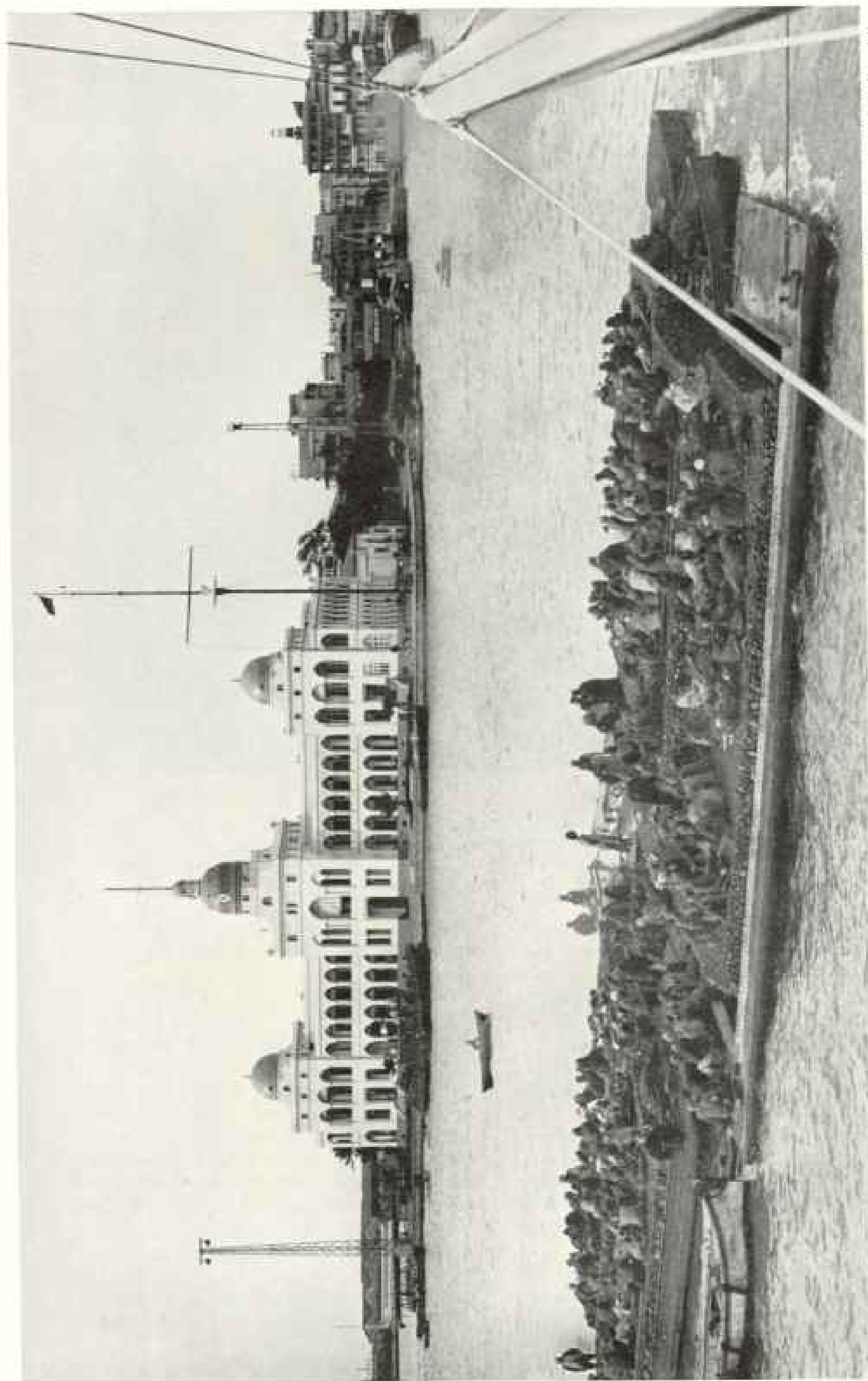
Now two small ferries serve to carry the passengers and their baggage from the Egyptian State Railways to the Palestine Railway.



Photograph by W. Reid

PORT SAID'S MAN POWER LONG HELP THE WORLD'S COALING RECORD

The din is deafening as an endless chain of grimy laborers, yelling and singing, pours basket loads of coal into the ports of a steamer at the Mediterranean gateway to the Suez Canal. To keep out the penetrating dust, cabins and public rooms are sealed and most passengers spend the time ashore. Oil now competes with British coal as a fuel for ships at Port Said.



Photograph by Dr. Robert Mansdell

COAL BARGE AND CANAL COMPANY OFFICE SERVE ONE END—TO KEEP SHIPS MOVING

Before a liner enters the Canal at Port Said, its tonnage, cargo, fuel needs, and local passengers are known. A definite berth is signaled, barges heavy with coal and man power hasten to their task, fresh water is pumped aboard, the medical inspection made, and at the last minute Canal pilots arrive to help the ship as far as Ismailia. If the vessel is outward bound, a harbor pilot is assigned to take it to sea.



RAKISH SAILING VESSELS SHARE THE CANAL WITH MIGHTY STEAMSHIPS

From the desert, the hulls of these simple craft are hidden, and pointed sails, like slanting quills, write their record of maritime travel athwart an ancient caravan route (see text, page 627). Through the Sweet Water Canal such boats connect with the Nile and often await their turn at the locks of Ismailia or Suez.

A four-car freight ferry hauls itself across on two chains. But when a ship appears, the chains are lowered to the bottom and the sea route of 66 years' standing takes precedence over the land route established more than 50 centuries ago (page 632)

A caravan of Bedouins was waiting there, its camels being slowly ferried across, a few at a time, to be sold in the rich land of Goshen. The small ferries are worked by hand power, and the Egyptian laborer sought assistance of a desert man in head cloth and camel's hair crown. The Bedouin toiled proudly until the laborer thoughtlessly made fun of him.

The dignity of a prince touched the desert man. Before the African bank was reached the Egyptian was sweating under a masterful eye. There was something

about the long-gowned son of the desert that made the laborer want to get him ashore.

In pre-war days Port Said was as wide open as the sky and disreputable men and women flocked thither with the riff-raff from passing ships. But soldiers must be protected and Port Said is now a place to which one may take wife and children.

The shops seem stocked with deck sports goods or bridge prizes. One can smell the streets of Delhi, the narrow bazaars of Benares, the dampness of Canton, the factories of Japan. But here is a truly lovely vase that carries one back to Kyoto, there some excellent silk from Shantung, there a shimmery veil from the Chowringhee.

Port Said has no more nationality than a wireless wave!



Photograph by Dr. Robert Ransdell

A LULL IN THE DAY'S OCCUPATIONS IN PORT SAID, THE CANAL'S COSMOPOLIS

Gone is the time when "Little Egypt" picked up carelessly tossed *bakshesh* from the floor. Tonight visitors from many nations will meet in a night club at this midcity hotel. But morning belongs to the natives, who need no newspaper to know what's going on. Port Said, a sandspit town, born of the Canal and named for the Khedive Saïd, now has a population of 105,000.

The harbor is a place of infinite interest. Fishing boats sweep up the Canal entrance in pairs, dragging a net between them. When evening comes, these sturdy but graceful boats, manned by Italians from Bari, edge up to the pier with three or four men clinging to the long tip-tilted masts and furling the sail, once bloated by the breeze but now hanging in senile wrinkles.

FISH IN ATTRACTIVE TRAYS

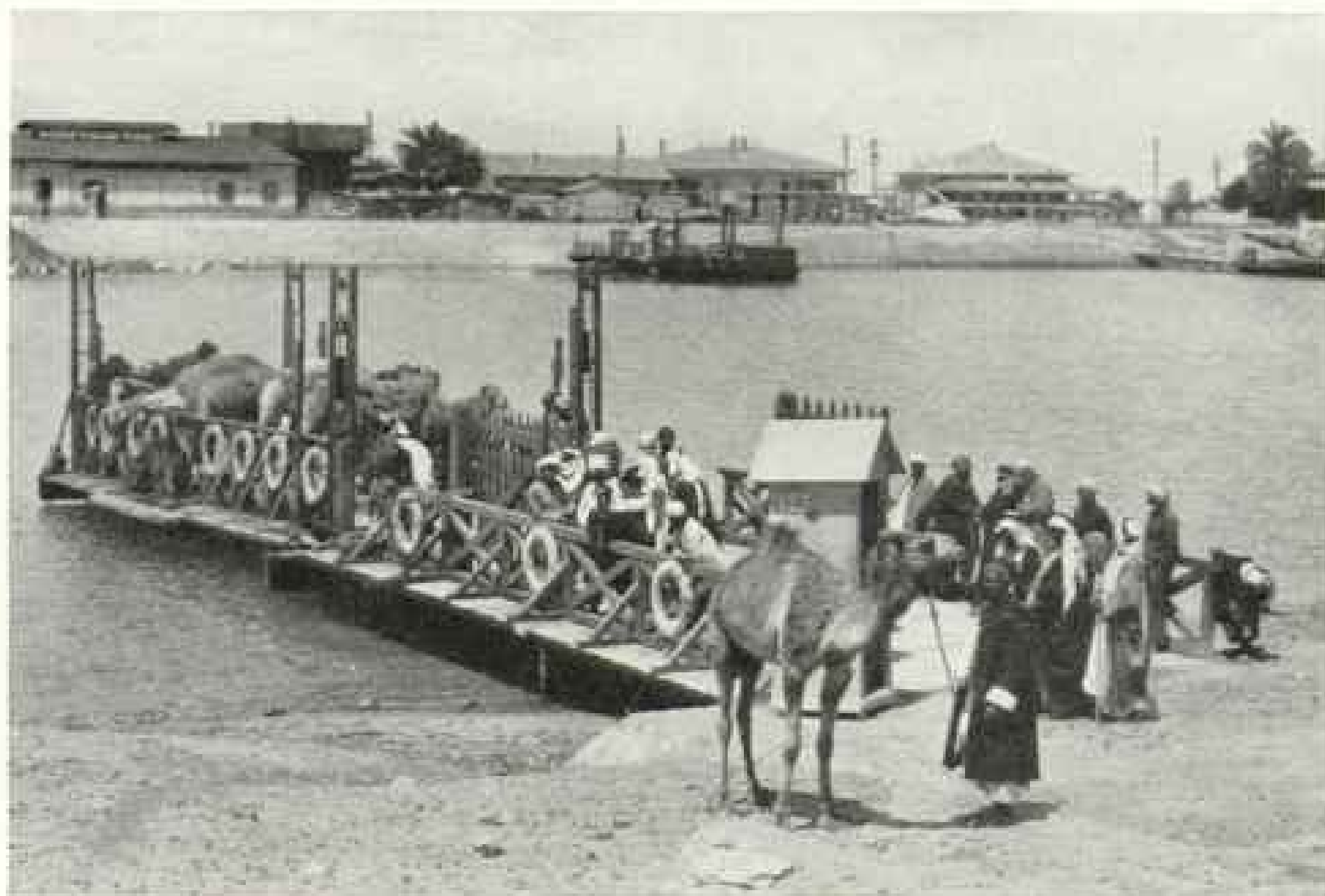
Their very mixed catch is sorted and piled up in trays until the shrimps make one's mouth water and even unattractive little fish are so arranged that they seem eminently desirable (see pages 621 and 625).

The harbor fills and empties in a marvelous way. One liner slides in from the

north. Another from Suez has just made fast. Coal barges move out and attach themselves to the flanks of the liners like baby whales or submarines along the mother ship. Pontooned causeways curve out from shore to gangplank (see page 614). Water barges move into position to pump their load into the thirsty steamers. Tugs hustle here and there.

A traffic cop seems called for, although one knows that each berth is allotted, each movement made in accordance with orders from the handsome Company building with its clean-tiled dome (see page 629).

An hour later, the ships have gone their several ways. The barges have taken their sooty men with shining teeth and eyes back to the coal piles. The harbor is as empty as Wall Street on Sunday.



A SHIP OF THE DESERT TURNS UP HIS NOSE AT A MERE PERRY

Asiatic nomads are ferrying their camels across the Canal from Asia to Africa at the spot where the 66-year-old canal interrupts a caravan route which was old in the time of Moses.

Then a pilot boat plows her way out to the north, a smudge shows beyond the water tower and in a few minutes Sunday morning changes to Saturday night.

A sturdy little tug called the *Titan* lies at anchor in the Commercial Basin. "Is she as good as her name?" I ask.

"The *Titan*? Say! If she can't get the ship off, she will get something off the ship."

One wonders what treasure a diver has been seeking under that welter of shipping. "Coal," is the reply. Tons a day are thus saved from blocking the channel and the coal syndicate divides the product.

TRADITIONS OF EARLY SEAFARERS

As one watches the fishers dragging in their nets or sweeping in under sunset clouds, hears boatmen arguing over fares, notices coal heavers piling fuel into the side ports of an impatient liner, sees the pilot board a small steamer tossing outside the jetty, or admires the majesty of great mail steamers cluttered about by small craft, he realizes that Port Said is the home of those who go down to the sea in ships,

that the tradition of Sidon and Tyre has slipped down the east coast of the Mediterranean to the mouth of this maritime canal.

Then he goes ashore. Landsmen pounce upon him with silks and cigarettes, ostrich plumes and post cards.

Out on the jetty stands the monument to Ferdinand de Lesseps, the potent-dreamed canal digger, around the base of which the loafers have futile dreams and pretty little girls hold the hands of doting grandfathers. The wide-swept arm above them, like the inscription on Sir Christopher Wren's tomb in St. Paul's, seems to say, "If you seek his monument, look about you."

As one sits there on the ever-lengthening jetty in the shadow of that statue, he thinks of a silver ribbon stretching south through the dark desert under a star-strewn sky, with Asia on the left and Africa on the right, while the camels at Qantara roar their protest at this barrier to their caravan route which, till De Lesseps broke its back, had been as old as time.

OPEN-AIR LAW COURTS OF ETHIOPIA

With Illustrations from Photographs by Harald P. Lechenberg

IN THE accompanying series of unusual photographs (pages 634-646) Mr. Harald P. Lechenberg* depicts life in some of the informal Ethiopian and Eritrean law courts. With unusual photographic technique, he has caught the facial expressions and gestures when these subjects were unaware that a European observer, with a camera, was anywhere near.

Ethiopia has its Supreme Court, which today still passes judgments according to the laws of Solomon. This Court has jurisdiction in all important cases, such as those which involve murder or inheritance disputes. After it come the district law courts, which try more petty cases. Their judges are chosen for the most part from among city and town officials, in whom the Government vests power to administer justice. Such officials may, in turn, delegate judicial powers to two worthy inhabitants as assistants.

These "courts" use no regular court building, but meet for trials on any convenient street corner or village plaza. There, like shopkeepers or street peddlers, they may sit down and wait for cases to come. Because of the incessant haggling common in all Ethiopian trade transactions, these street courts seldom have to wait long before litigants appear.

TO TRIAL BY CHALLENGE

Any citizen who feels he has been wronged may demand that his aggressor go with him to the nearest judge. Such a challenge is usually accepted at once, as the people seem to enjoy litigation. Should an alleged wrongdoer refuse, a plaintiff may go to the judge, who will then assign two stalwart citizens to fetch the other party, by physical force if need be, in the interest of "ethics."

Accuser and accused each has the right to give a detailed account of his case; to bring all witnesses to the spot who may help verify his statements; and also to question such witnesses. He who, for any reason, will not conduct his case alone may take a lawyer; many self-made lawyers,

* See "With the Italians in Eritrea," by Mr. Lechenberg, and "Traveling in the Highlands of Ethiopia," by Leo B. Roberts, in the NATIONAL GEOGRAPHIC MAGAZINE, September, 1935; and "Life's Tenor in Ethiopia," by James Loder Park, June, 1935.

listening eagerly and freely commenting on the case, are always found in street crowds, attracted by these open-air courts.

The noisy, free-for-all courts permit endless oratory, on themes relevant and irrelevant, in which both plaintiff and defendants may also distinguish themselves. Speeches may dissect any topic, from private scandal to the Nation's gravest foreign affairs. Hence a visit to such courts is, for the Ethiopian, not only amusing but also a source of political instruction.

JUDGES' FEES PAID FROM WAGERS

Another reason for the popularity of these law courts is that here the native passion for gambling is officially linked with the search for truth and justice. Either or both plaintiff and defendant, when he has made a statement, may lay a bet that he is right, and that the court will so find. Half a sheep, a pound of flour—even a white horse—may be wagered, depending on the importance of the dispute.

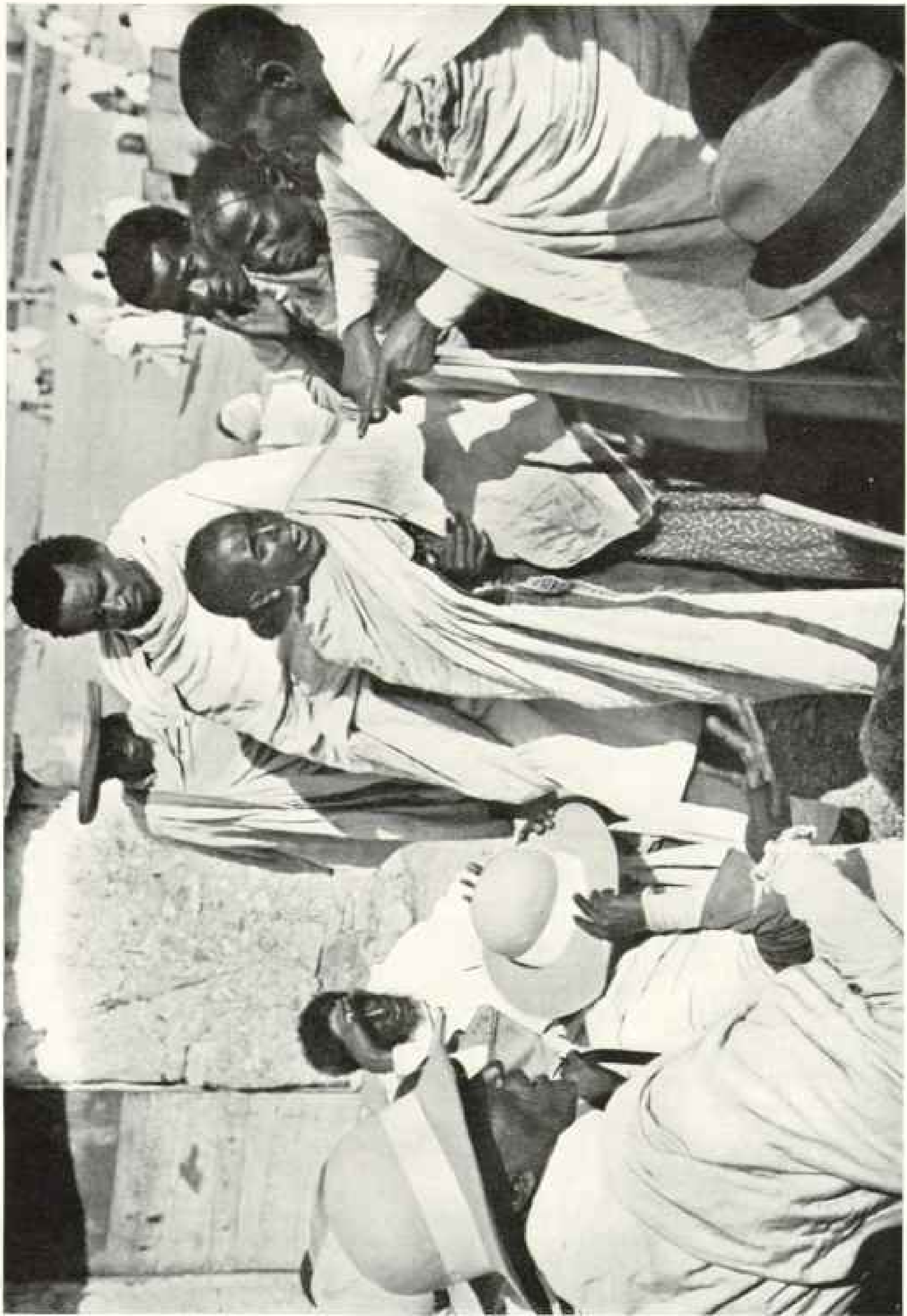
If one litigant offers such a bet, the other can only "take the bet," or else retract his own statement and thus lose the suit. Often, in the end, these bets are worth more than the trifling object which started the quarrel.

Judges in these street courts receive no salary; they live solely from the proceeds of wagers. Whoever loses must pay their fee, and the judges seem to earn a good living, as some have large houses.

In cases where decisions cannot be given immediately, as when distant witnesses have to be called or special inquiries arranged, plaintiff and defendant may be confined in the same room until the end of the trial.

In some districts it is also customary, during the trial, to tie both parties together by their garments, or to fasten a debtor to the creditor with a small chain until a verdict is reached. Should a litigant lose, yet not be able to pay his bet, he must remain in the house of the judge until payment is made. This confinement may last for months; fear of such imprisonment seems a deterrent to excessive betting.

At most of such courts the crowd seeking justice is so large that trials are held daily, without interruption, from 9 o'clock in the morning until 5 in the afternoon.



UPROARIOUS LITIGATION MARKS ETHIOPIAN OUTDOOR-COURT SCENES

District judges, entrusted with such petty cases as this one involving correct weight, meet on any convenient street corner, in Eritrea, where Ethiopian judicial customs long prevailed, the defendant (right center) and the plaintiff (facing the accused, with fingers pointing in customary gesture) both talk at once, the judge (left foreground) appealing for order. The man holding his hat over his ears to shut out the noise is one of the petty judges.



"AND DID SHE NOT ACCEPT MY GOODSE?"

"I gave her olive oil that flowed soft and clear from the ladle," continues the shopkeeper with indignation. "My sugar was white as snow. I demand her impudent claim be rejected; that she be enjoined from annoying me and claiming more money than all her sheep are worth!"



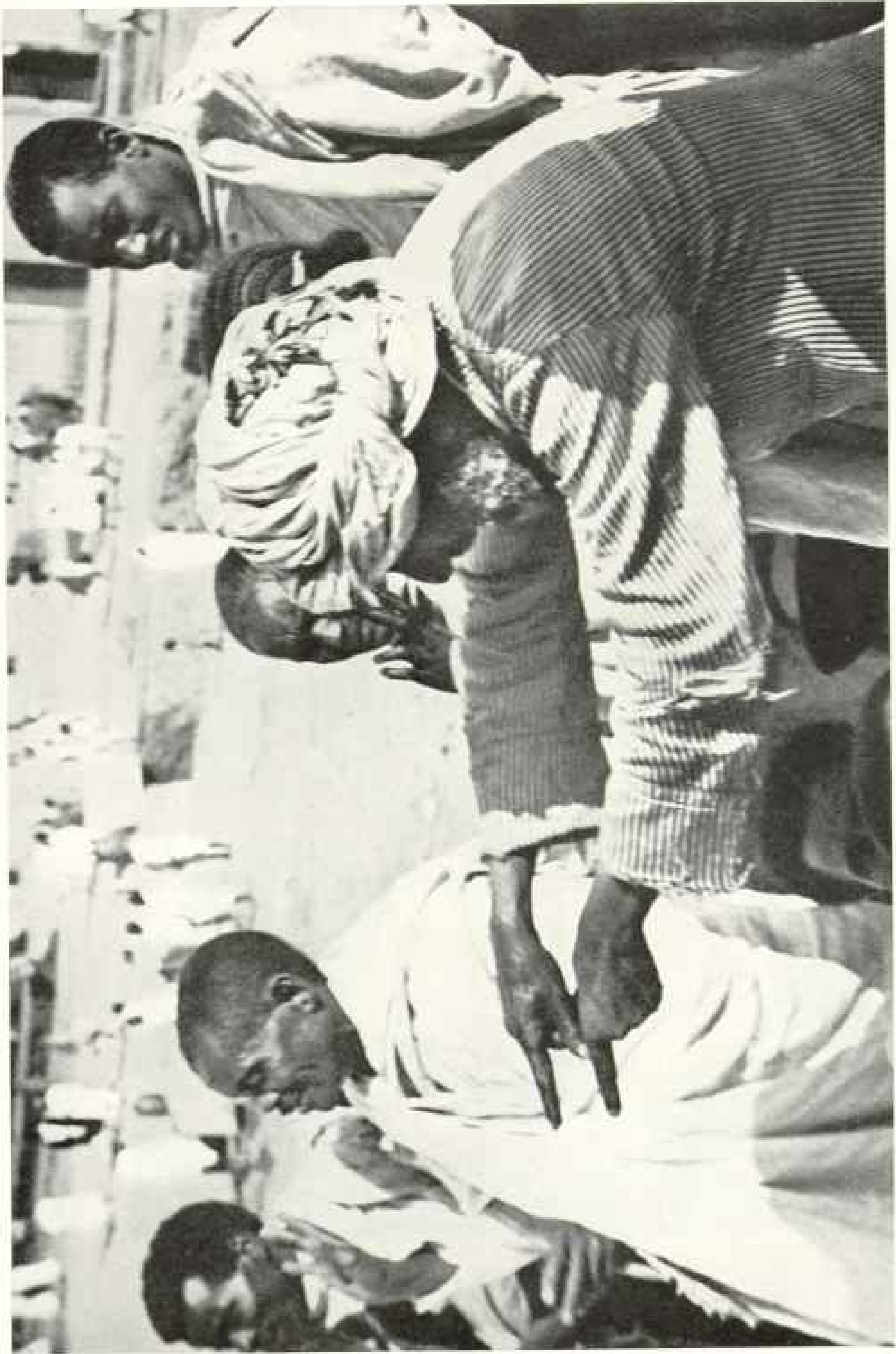
"OUT OF PITY I TRADED WITH THE BUTCHER WOMAN!"

This Mohammedan shopkeeper is being sued by an Asmara woman butcher for 10 thalers (about \$3.25) in addition to goods exchanged. "Her meat was as bad as the sheep which graze among barren rocks," the shopkeeper tells the judge, "an old, tough, and evil smelling."



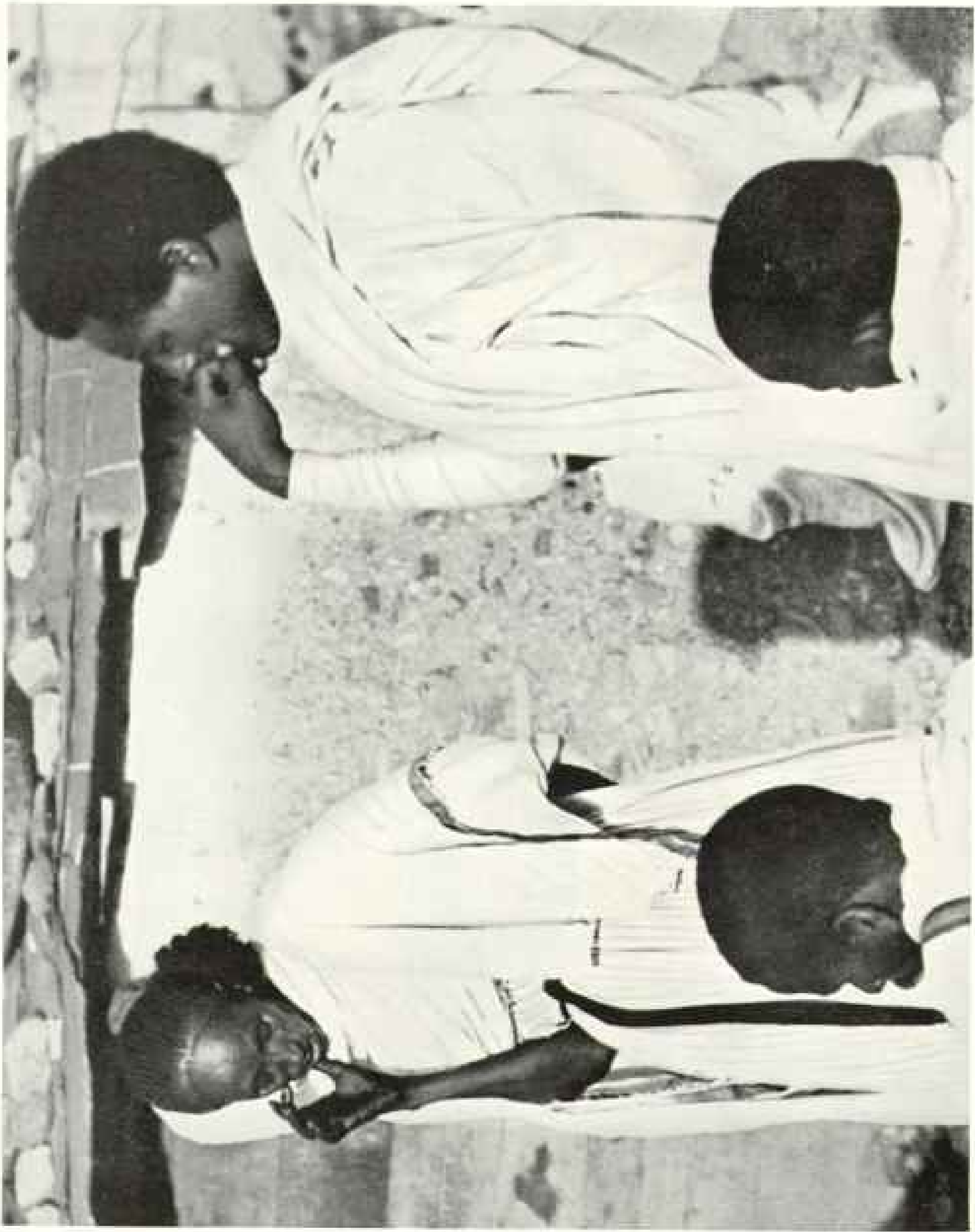
THE PLAINTIFF AND DEFENDANT "TELL THE JUDGE" ABOUT THE MUTTON

Whenever the accused shopkeeper (on the right here; see, also, illustrations, pages 635 and 637) pauses for breath, the woman butcher (left) breaks in with her argument for 10 thalers more. "In the name of justice," she says, "I insist she be sentenced to pay all she owes me, and that she be enjoined from insulting my sheep, whose meat is as fresh as the first grass in spring!" Any principal in such cases who does not wish to conduct his own trial may have a lawyer, who usually gets as excited and talks as passionately as the interested parties.



THE HUSBAND OF THE SHOPKEEPER SUED FOR MUTTON PAYMENT (ILLUSTRATIONS, PAGES 635 AND 636) COMES TO HER DEFENSE

An Arab from Yemen, this man testifies that the butcher's meat his wife served was bad enough to poison him. Because she offered him such food, he added, he was forced to beat her, thus teaching her the respect to which he was entitled as her husband. Dozens of witnesses in even the simplest case may be called, providing entertainment for a whole neighborhood where the street court is held.



MARITAL PROBLEMS PLAY AN IMPORTANT ROLE IN NATIVE COURTS

Because she must pay 80 thalers (about \$26) for her divorce, this Ethiopian woman is downcast. So-called "80-thaler marriages," customary when the bride is already a divorcee, are performed by the native judge and carry an obligation, in case matrimonial bonds are later dissolved, for the party at fault to pay the judge 80 thalers—an obligation which prevents many divorces among the less prosperous. Besides this type of wedding, there are various religious marriages with Christian or Mohammedan services, and the civil ceremony.



LISTENING IN ON AN INTERESTING DIVORCE CASE

Free discussion of any topic, from unflattering mention of an opponent's ancestry to political analysis of foreign affairs, may enliven such cases. From the arrogant expression of this 13-year-old Ethiopian girl, it appears she has no fear of ever needing an 80-thaler divorce.



A SYMPATHETIC SPECTATOR AT AN 80-THALER DIVORCE

Lacking many movies and other modern forms of diversion, Ethiopians find amusement and instruction in these open-air courts, frequently held. Having no regular building in which to sit, judges wait at street corners or village plazas for customers sure to appear before long.



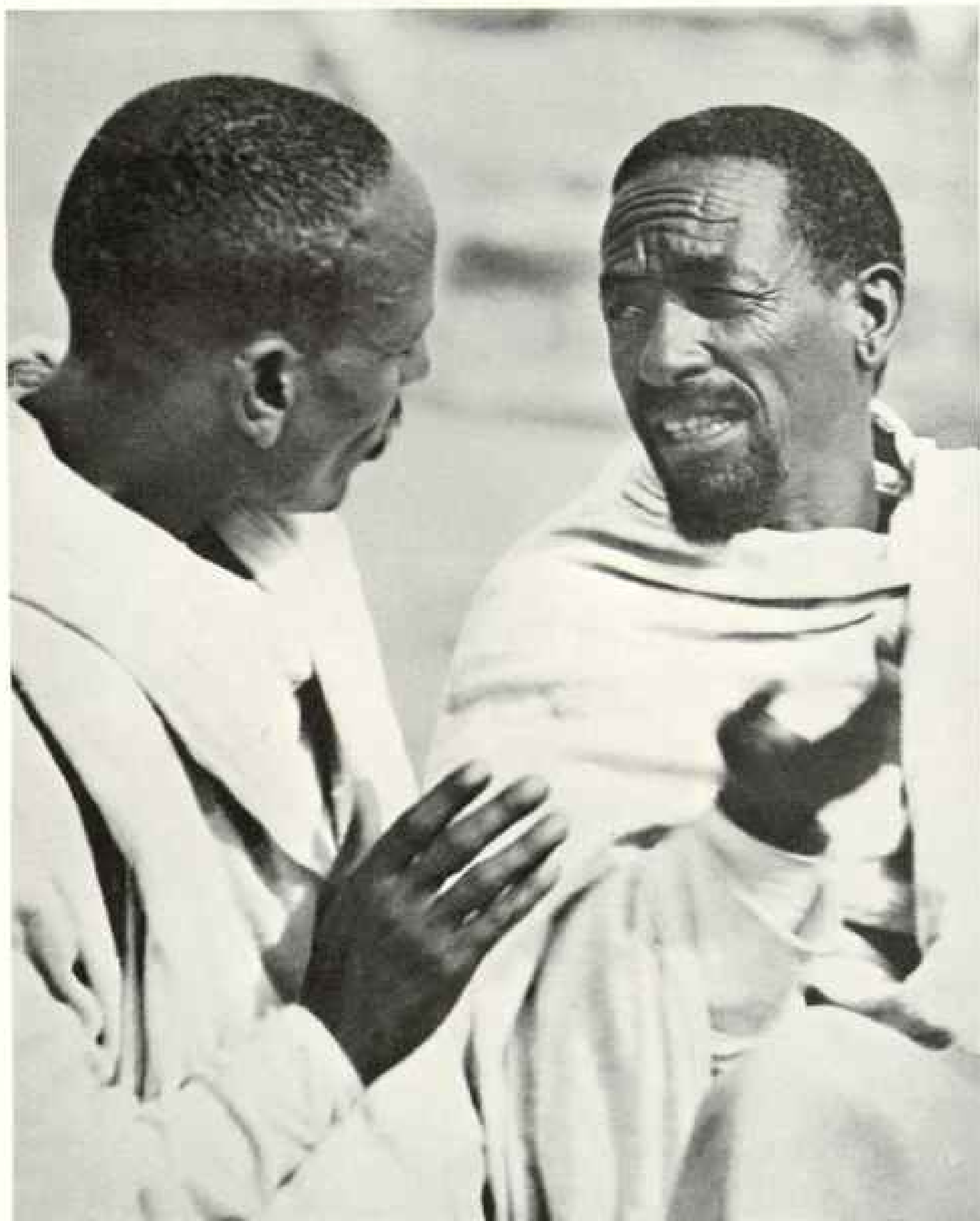
A DEFENSE LAWYER AND HIS CLIENT MARSHAL THEIR ARGUMENTS

The woman (center) is accused of shortchanging three guests at her inn, but is fortunate in having engaged a clever lawyer (left), who turns the tables on the accusers.



AMAZED, THE ACCUSED INNKEEPER HEARS HER LAWYER'S ELOQUENT PLEA

Though the charge involves shortchanging by many piasters, "this money has scarcely any bearing on the case," says the defense attorney. "How she was insulted by these men who called her 'daughter of a donkey thief,' is far more important. . . . An Ethiopian woman who could stand being so called without losing her senses would not be respectable. . . . Besides," he adds, "these fellows did not know her father at all."



THE PLAINTIFF (LEFT) AND THE DEFENSE LAWYER ARGUE THE MERITS OF THE
"SHORTCHANGING" CASE

In Ethiopian court cases, innumerable witnesses may be called by either side and questioned at length on relevant and irrelevant topics—one of the reasons why litigation here is a national outdoor sport. A Supreme Court makes decisions in murder charges, inheritance disputes, and other important cases, but it is in these informal district courts that the life of the people is most intimately revealed. "My client," says this attorney, "is a poor but honorable woman. And who would believe that these men, who admitted being unsteady on their feet, could count correctly, when they could not even prevent words escaping their mouths which I would be ashamed to repeat?"



THE FINAL PLEA OF THE INNKEEPER'S COUNSEL

"I, O Supreme Judge, have lived in Ammari—as you well know—twenty years. There is not one 'pub' I don't know. But I never called the hostess 'daughter of a donkey thief.' Gentlemen manners and dignity forbid."



THE JUDGE MARKS DOWN A WAGER

Gambling here is an official part of litigation, both disputants and bystanders betting on the judge's decision. Refusal to wager amounts to withdrawal of the case. Street court judges receive fees paid by losers.



VISITING DEALERS FROM THE TRIBE OF GURAGE BRING A DISPUTE TO ASMARÁ'S DISTRICT COURT

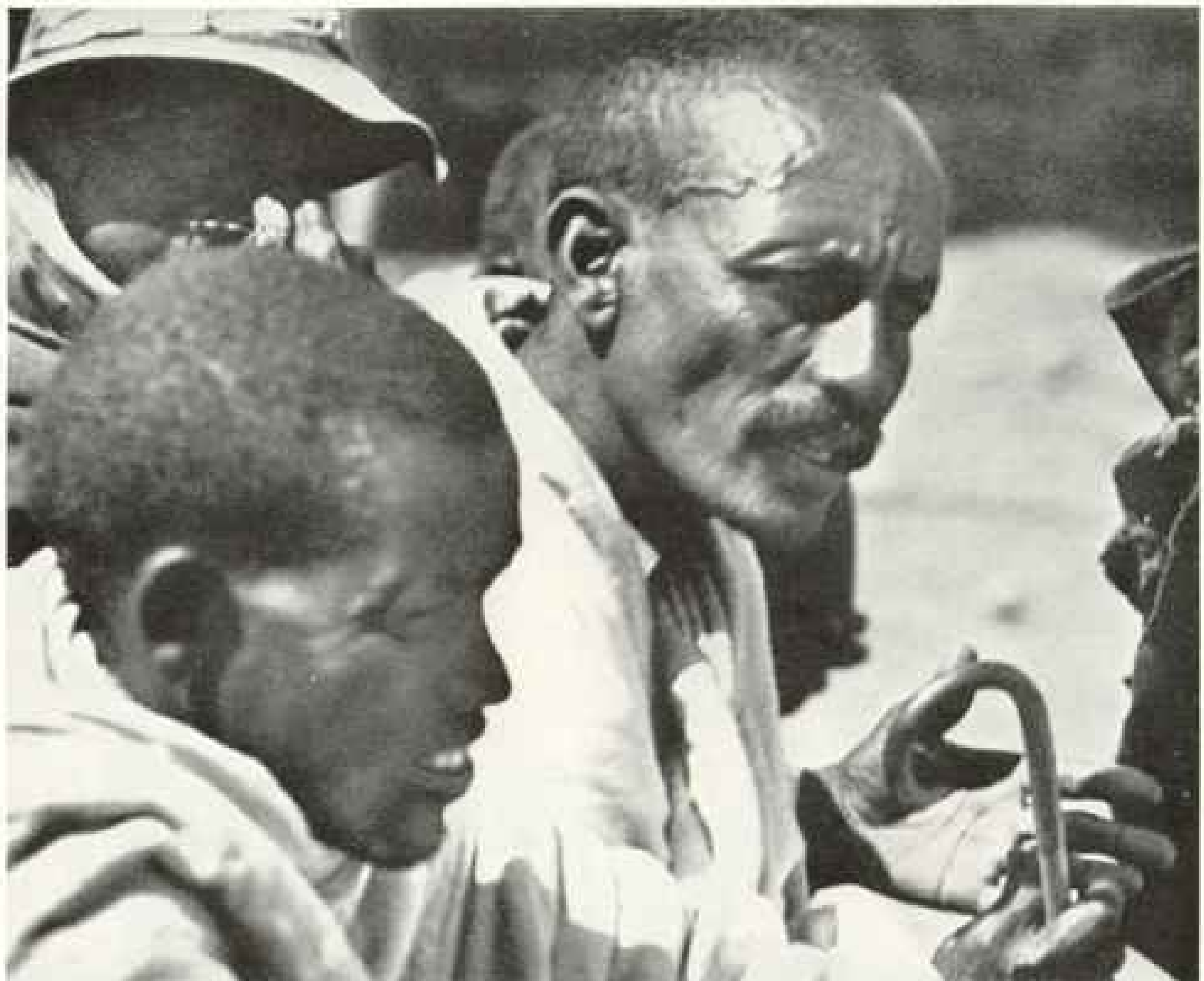
A problem for Solomon, this case involves 15 donkeys to be divided between two men. Coming to town, say the principals, the donkeys all ran together. Without witness, the judge is here attempting to persuade the defendant (right) to give up the extra donkey which the plaintiff insists is his (page 646).



Photograph by Addison E. Southard

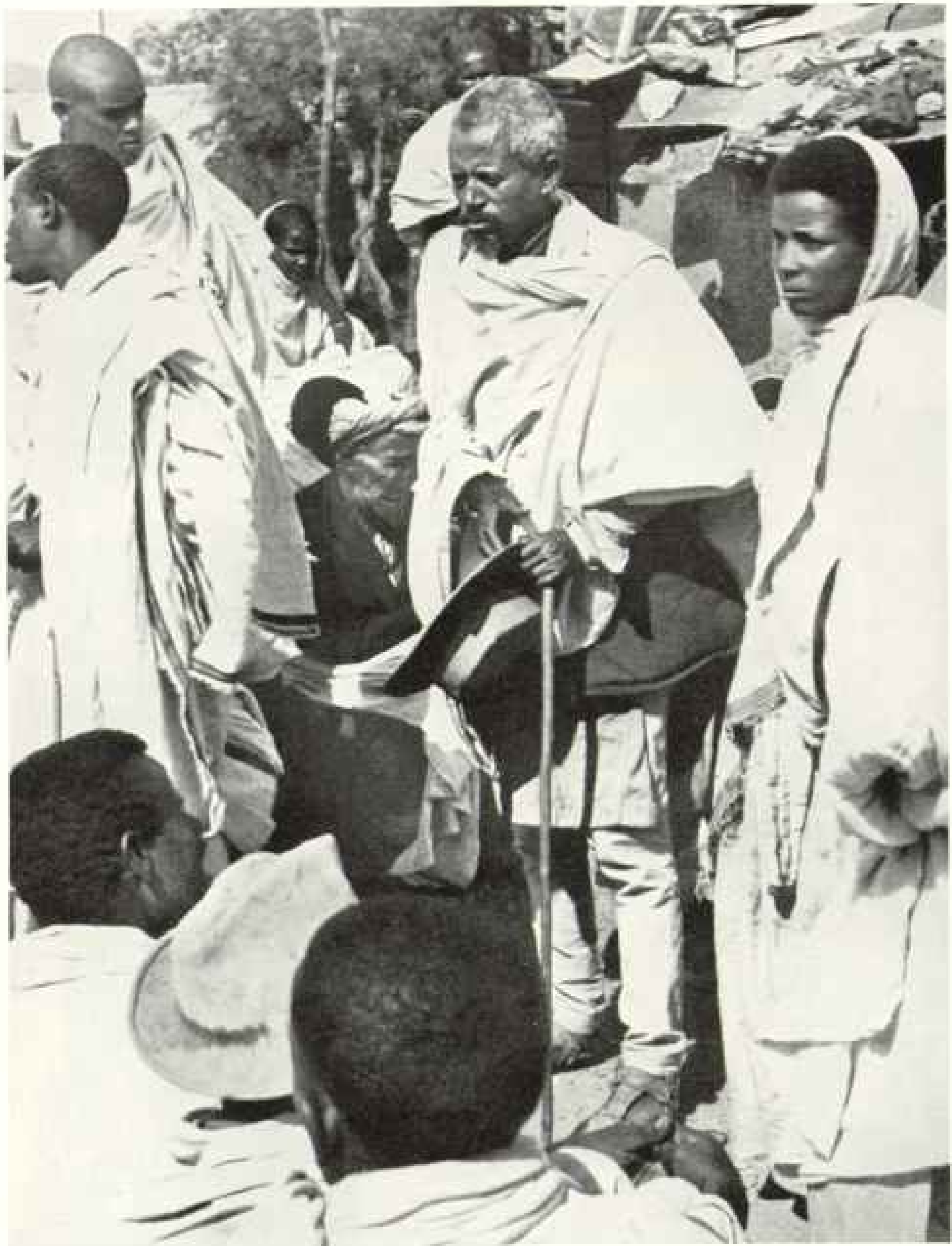
AN ETHIOPIAN CHIEF HAS HIS ARMED BODYGUARD

Ras Mikael, of Saganeiti, is typical of the dignified tribal heads who are permitted to rule according to age-old traditions in Italian Eritrea, as well as in the realm of Emperor Haile Selassie.



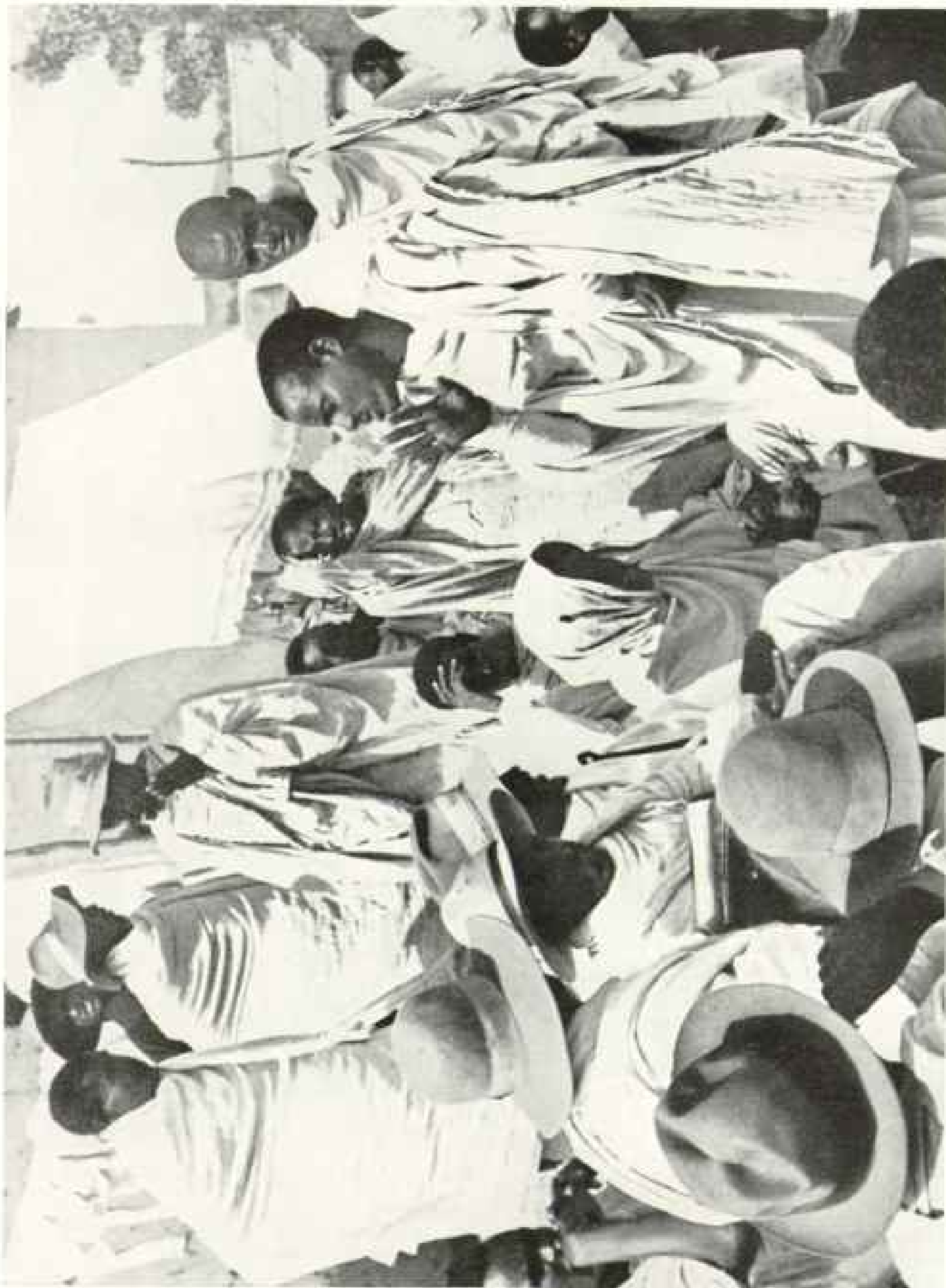
CAN HIS CLIENT ESCAPE THE HEAVY DIVORCE PENALTY?

The defense lawyer (at the right) follows his case with frowning concentration, seeking some loophole by which his client may win. If a defendant in any of these native cases should refuse to go to court at the request of the plaintiff, the judge may send two sturdy deputies to bring him.



ANOTHER WITNESS IN THE CASE OF THE "SHORTCHANGING" INNKEEPER.

Daily court sessions, from 9 a. m. to 5 p. m., are held at Asmara to accommodate all the litigants. In cases where witnesses are called from a distance, both plaintiff and defendant may be confined till trial is over. The witness to the right center here, swaying uncertainly because of too long a visit at a "pub," is testifying on behalf of the defendant (right), whom he "believes to be, like all other innkeepers of her sex, both respectable and honest."



HIS ELOQUENCE FALLS ON DEAF EARS

Retained in the case involving ownership of the 15th donkey, the defense attorney (right) has been speaking for some time, but, the author says, to little avail (see page 643). Having confidence in the justice administered by their district courts, Ethiopians are usually willing and anxious to submit to trial, and cheerfully accept the judge's verdict.

THE MALTESE ISLANDS

Cicero's Land of "Honey and Roses," and Stronghold of the Knights, Again Is Focus of Naval Strategy

BY SIR HARRY LUKE

Lieutenant Governor of Malta

ONLY seventeen and a half miles long and nowhere more than nine miles wide, Malta is the principal island of one of the smallest archipelagoes in the world. It survives from those remote days when continents were differently shaped and the Mediterranean was a series of lakes, divided by land bridges that connected Europe with Africa.

Of one of these bridges the Maltese archipelago is today the sole existing pier, the one fragment extant of a causeway along which prehistoric pachyderms and ruminants groped their puzzled way to the African warmth when driven from Europe by its increasing glaciation.

Some of these mighty beasts lingered too long on the Maltese pier, and the cave of Ghar Dalam, near the southern extremity of the island, is full of their bones, converted in the course of ages into perfectly preserved fossils (see text, page 648, and illustration, page 649).

CROSSROADS OF THE MEDITERRANEAN

Together with the other inhabited islands of the group, Gozo, population 23,796, and Comino, population 41, and including the naval, military, and Air Force establishments, Malta has some 258,400 souls—that is to say, more than 2,000 to the square mile. Thus it is one of the most densely settled geographical units.

Why has this rocky little excrescence from the bed of the Mediterranean played a major part in history? Why does it play a part in the life of the modern world at such variance with its topographical dimensions? (See map, page 651.)

The answer lies, first, in its all-important strategic position between Sicily and North Africa, and, secondly, in its possession of some of the finest harbors in the world.

The tongue of rock on which La Valette built his capital is in shape not unlike Manhattan Island, with the Grand Harbor, where the battleships are berthed, corresponding to the Hudson, and Marsa-

muschetto Harbor, the anchorage of destroyers and smaller craft, to the East River.

But there is the difference that, both from the Grand Harbor and Marsamuschetto, there branch several subsidiary creeks, providing secure and ideal anchorages, in the past for the galleys of the Knights and their predecessors, at the present day for the Mediterranean Fleet of Great Britain (see map, page 650).

All around Grand Harbor rise, bold and still perfect, the Knights' magnificent fortifications, intended to insure that never again should Malta and the Order have to endure at the hands of the Moslems, to whom the Hospitalers were an ever-present menace, another such siege as that of 1565.

Then, after a desperate struggle of nearly half a year, the Knights and the local population were just able, by superhuman efforts, to repel the flower of the army of Sultan Suleiman the Magnificent.

If Malta's quarter of a million population is large, measured by the area on which it has to live, it is small for a separate nation. For the Maltese are a nation unto themselves, with their own language, their own traditions, their own physical characteristics, and a history that is perhaps one of the longest to which any people can lay claim.

HERE LANDED THE APOSTLE PAUL

In Malta and Gozo the art of building in remote Stone Age days reached a development of skill and refinement unknown in other centers of the megalithic world. Thus Malta was already an ancient center of civilization when the "tempestuous wind called Euroclydon," that still whistles across it during the winter months under its modern name of *gregale*, the "Greek wind," drove St. Paul to its shores. Thereafter, the Roman chief of the island, Publius, became its first bishop (see illustration, page 657).

During the many centuries of their recorded history the Maltese have had many rulers: the Phoenicians and their offspring,



Photograph by T. H. Salt

BRITISH WATCHDOGS OF THE MEDITERRANEAN FILE INTO THEIR KENNEL AT VALLETTA

Out of the mist they come, steaming majestically through a narrow entrance to ideal anchorages in the deep, sheltered waters of Grand Harbor. As a naval base, tiny Malta plays an all-important part in guarding Great Britain's "life line" to its eastern empire.

the Carthaginians, then Romans, Arabs, Normans, Aragonese and Castilians, then for two and a half centuries the international Order of St. John of Jerusalem (we also know them as the Hospitalers, and as the Knights of Rhodes and Knights of Malta) and, finally, after a brief French occupation, the British.

THE LANGUAGE OF HANNIBAL

Despite so cosmopolitan a history, the Maltese have clung tenaciously to their ancient Semitic tongue, which is recognized by experts to be of Phoenician structure, and, to all intents and purposes, the language of Dido and of Hannibal.

Naturally, the old Maltese language has borrowed, in the course of ages, words from other languages, but it has always fitted them into its own Semitic framework. The Maltese who emigrated to Asia and to the north coast of Africa have no difficulty in making themselves understood by their Arabic-speaking neighbors, especially in Palestine and Morocco.

Here is a translation into Maltese by Sir Augustus Bartolo, one of His Majesty's

judges in Malta, of the first verse of Longfellow's "Psalm of Life":

Tghidolix li d-dinja hija bolma,
Mhux hliel frugha, u nikel, u hemm;
Dak li jidher fil-wieċ hu qarrieqi,
U jekk torqod ir-rub taghna tintemm.

In some parts of the Old World the visitor may select, according to his tastes, the century that he prefers. It is no exaggeration to say that in Malta he can choose the millennium.

"TRAM LINES" OF THE ANCIENT WORLD

A paleontologist may wander about the cave of Ghar Dalam and study the remains of the elephants and hippopotamuses which left their bones there when the world was yet young. Advancing from these and from the Neanderthal Man, of whom possible traces have been found in Malta, many thousands of years into the Stone Age, he will find in Malta and Gozo a series of neolithic sanctuaries—Tarshin, the Hypogeum at Hal Saflieni, Hagiar Kim, M'naidra, Il Gigantia, to mention only the most important—unequaled elsewhere (see pages 656 and 657).



Photograph by Vela Studio

THOUSANDS OF PREHISTORIC ANIMALS LIE PRESERVED IN GHAR DALAM CAVE

Fossils of elephants and extinct hippopotamuses occupy the lowest layer of a deposit on the cavern's floor. The next stratum bears remains of many deer, whose bodies may have been swept into the cave by floods.



Photograph by T. H. Salt

NATIVES CALL MALTA THE "FLOWER OF THE WORLD"

In support of their use of the lavish phrase, patriotic Maltese point to such verdant gardens as these of San Antonio Palace, winter home of the Governor (see text, page 664).



Drawn by Newman Bonstead

MALTA, COMINO, AND GOZO ARE REMNANTS OF A LAND BRIDGE THAT ONCE LINKED EUROPE TO AFRICA

Neither river nor lake exists on their combined surface of less than 120 square miles, and water for the quarter of a million residents must come from springs. A gusty winter wind, the *griegale*, would literally blow the thin soil off its limestone base and into the sea were it not protected by walls and terraces.

Other survivals of a different sort are the cart tracks which traverse many of the barren rocky surfaces of the island, the tram lines of prehistoric man. The width of the tracks of the two-wheeled carts which, with their gaily caparisoned little ponies or donkeys, are the traditional vehicle of the Maltese farmer today, correspond almost exactly with those of his ancient predecessor (see page 662).

On the small, uninhabited islet of Filfla, now used only as a target for naval gun practice, survives a lizard of dark green spotted with red (*Lacerta muralis* var. *filfolensis*), which occurs nowhere else except in this group.

The Museum in Valletta, housed in the former *Auberge d'Italie*, has an admirable collection of the artistic products of the Stone and Bronze Ages. Among them are the astonishing fat deities characteristic of Maltese neolithic sculpture, made available

in chronological sequence by the learned Director, Sir Themistocles Zammit, who has done so much for Maltese archeology and excavation.

If one wishes to see how the distant forebears of the present population cultivated their land, one has only to watch the Maltese farmer of today plowing his field; and a student will note the eyes of Osiris still painted on the bows of Malta's sturdy little schooners.

SOME HISTORIC FESTIVALS

In Malta, during mid-Lent, are the carnival festivities common to other Mediterranean places, with features of more special interest. One of these is the *Parata* dance in the Palace Square, which takes its symbolism from the capture of a Maltese bride by a Moslem corsair.

At the feast of St. Peter and St. Paul, June 29, are the densely thronged *Imnaria*



ALMOST IN THE CENTER OF THE MEDITERRANEAN, THE MALTESE ISLANDS REAR THEIR HEADS

A hundred and forty miles from Europe's mainland and 180 miles from Africa, they guard the busy marine highway between Gibraltar and Suez. Italian territory, the coast of Sicily, is only 58 miles away. Strategic location and its spacious harbors have given Malta a place in history out of all proportion to its size.

racers. These races for horses and donkeys are of unknown but undoubtedly great age. The course is a piece of straight, hard road leading uphill to the big square in front of Notabile, where from his great stone box the Grand Master in former days handed down, and now the Governor of Malta hands down, the banners of victory to the winning competitors.

Spectators, including leading families of the island, watch the proceedings from two smaller but similar boxes flanking that of the Governor.

The name *Imnaria* is a corruption of *luminaria*, illumination, for it was the custom on that day to illuminate the churches of Notabile and adjacent Rábat in honor of the two saints. A more picturesque, if less trustworthy, tradition derives *Imnaria* from Hymen, the God of Marriage, it being supposed that the young men of the island were wont in former times to choose their wives from among the maidens coming to watch the contest.

The banners still given as prizes are long and narrow pieces of brocade of different colors. The fortunate winners take them back to their village to be used as altar cloths of the parish churches for the ensuing year.

Visitors are always interested in the *jaldetta* (more properly called *ghonnella*)

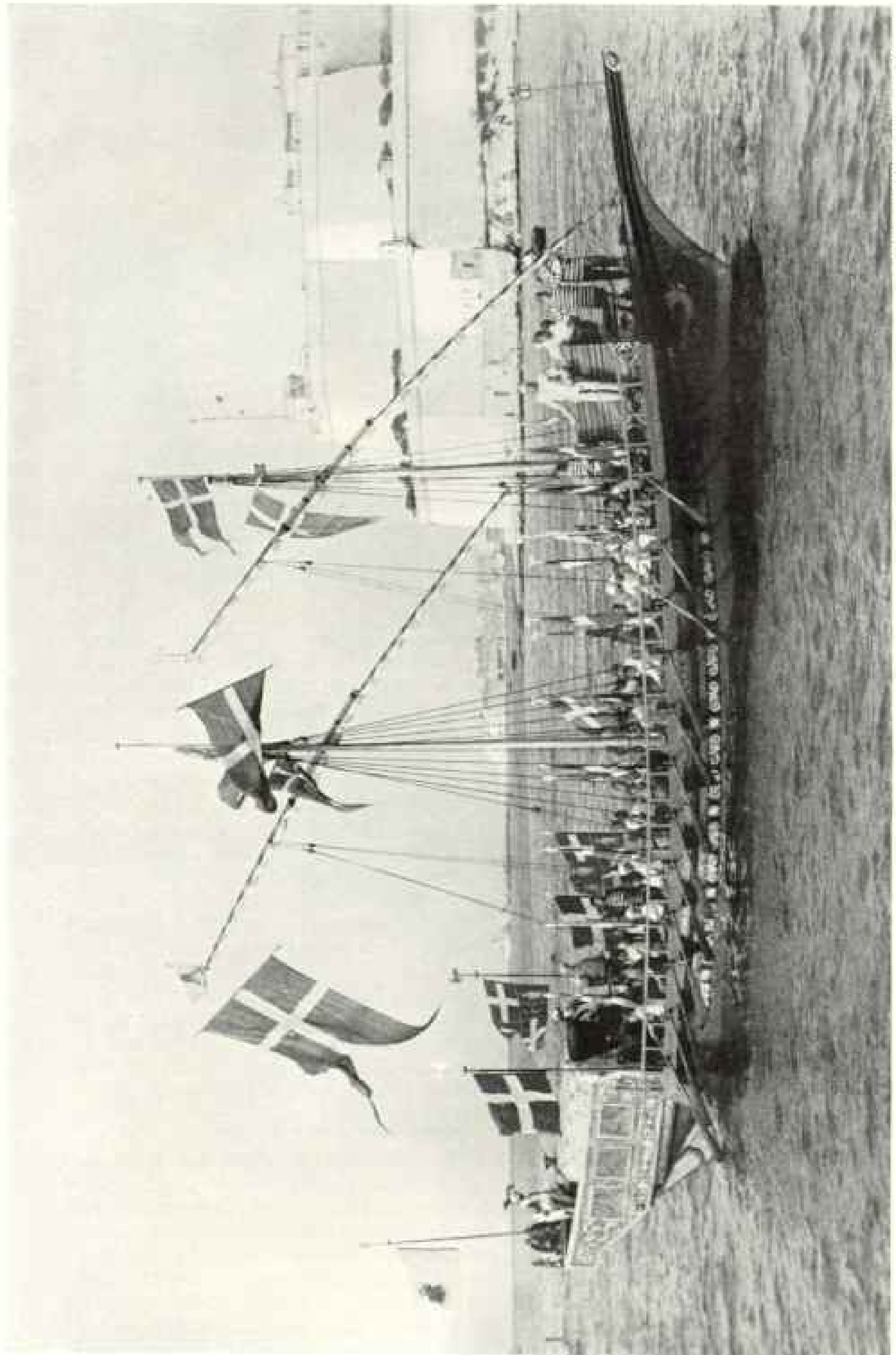
of the Maltese women. This headdress does not owe its existence, as some allege, to the excessive gallantry of Bonaparte's troops, but is of much more ancient origin. It is a voluminous hood of rich silk, stiffened inside the top edge by a piece of cardboard about a yard long, black everywhere save in the villages of Zabbar and Zeitun, where it is blue. One end rests on the head while the other has to be held (see page 655).

This striking adornment, or rather, concealment, is Malta's one characteristic article of dress and constitutes the local method of shrouding a woman's face and form, a custom common to southern latitudes from India west to the Azores.

Its one drawback is that it takes up so much space, more space, unfortunately, than is available in the motorbus, which is modern Malta's form of land transport.

FROM STONE AGE TO THE KNIGHTS

The dominant architectural notes of the Maltese islands are megalithic and baroque, and the gamut thus constituted can scarcely be called a narrow one. Roman remains include villas and catacombs. There survives a certain amount, although not very much, of Sicilian Gothic, particularly one complete house in Notabile, whose owner has been at pains to preserve and restore it wisely and furnish it suitably.



BEDECKED WITH BANNERS OF THE CROSS, WAB GALLEYS OF THE KNIGHTS OF ST. JOHN ONCE PLOWED THE MEDITERRANEAN

Photograph from Sir Harry Luke

Malta exhibited this reproduction at a water carnival held during King George V's Silver Jubilee. Fort St. Angelo (right background) is raised by the British Admiralty as a man-of-war. Saracens first fortified the site in the ninth century. Count Robert of Normandy strengthened it in the tenth, and the Knights rebuilt it in 1685.



© Publishers Photo Service

CANNONS OF THE SALUTING BATTERY POINT TOWARD GRAND HARBOR, BASE OF BRITAIN'S MEDITERRANEAN FLEET

So vital is the port that careful defenses have been reared against attack by sea or air. Some of Valletta's fortifications are hewn in rock along the shore. An old bell, rung when the Turks besieged the town centuries ago, still hangs in one of the fortresses. Long a naval base, Malta promises to become an increasingly important hub for air traffic.



© Donald McLeish

LITTLE MALTESE LACEMAKERS HANDLE THEIR THREADS WITH DEFT FINGERS

From each dangling bobbin a thread runs into the patterns which the youngsters fashion on long, round "pillows" used as supports. Much of their product, like that made in Genoa, has a peculiar stitch which resembles a kernel of wheat or an oat seed. Both China and India have copied the lace, distinguished also by a cross, since missionaries introduced the work in those countries.

After the Stone Age men the most conspicuous builders were the Knights, who in this last period of their career as territorial rulers took their name from Malta.

Valletta and Floriana on one side of the Grand Harbor, and the "Three Cities" of Vittoriosa, Cospicua, and Senglea on the other side, are eloquent in their massive fortifications, still intact, in their sumptuous public buildings, their palaces and their churches, of the activities of that vigorous, wealthy, and splendor-loving body of men, whose coinage did not cease to be legal tender in the islands until 1886.

The Knights of St. John came into being in Jerusalem, after its capture by the Cru-

saders in 1099, as a brotherhood of charitable men vowed to the tending of sick Christian pilgrims to the Holy Places.

The original Bull, dated 1113, whereby Pope Paschal II gave the Order its official charter, is to be seen to this day in the Armory of the Governor's Palace, formerly the Grand Master's Palace, in Valletta (see text, page 664).

In 1291 the Crusaders lost the last remnant of their territory in the Holy Land to the Saracens, and the Order—by this time it had become a militant in addition to a nursing Order—migrated to the island of Rhodes, where it ruled until that outpost of Christendom was taken by the



© Publishers Photo Service

RICH WOMEN WEAR THE FALDETTA TO CHURCH; THE POOR USE IT ALWAYS

Some believe the enveloping canopy, also called *ghounella*, first appeared when native women sought to avoid Bonaparte's soldiers. Others say the hoods became a symbol of mourning in the island for the destruction his army wrought. But the headdress existed long before Napoleon's forces came to Malta. Cardboard sewed in the hem produces the arch, large enough for the wearer to carry small bundles inside it (see text, page 651).

Turks after a prolonged siege at the end of 1522.

For the next few years the Order was homeless, but in 1530 the Emperor Charles V, of whose vast territories Malta was then a part, allocated the Maltese islands, together with Tripoli on the African mainland, to the Order in return for the annual tribute of a falcon, payable to his Viceroy of Sicily.

In October of that year Grand Master L'Isle Adam, who had suffered the mortification of surrendering Rhodes, had the satisfaction of making his entry into the Order's new home.

In the 1550's the Order lost Tripoli to the Turks, not altogether to its regret, seeing that this distant and vulnerable dependency was a liability rather than an asset. Henceforth, the Order's territorial possessions were confined to the Maltese islands, with one curious and very temporary exception, until it was expelled from them by Bonaparte in 1798.

In 1653 Grand Master Lascaris bought from King Louis XIV of France the four West Indian islands of St. Kitts (now British), St. Barthélemy (now French), St. Martin (now French and Dutch), and St. Croix (now American), for the sum of



Photograph by T. H. Salt

BENEATH "STRAW HAT" STONE LIDS LIE OLD MALTESE GRANARIES STILL USED

Knights built the underground warehouses and in them stored grain to feed the people. Wheat and barley will grow on many of the island's 10,000 farms, but much grain is imported and kept until needed in these bins between Valletta and Floriana (see page 655).



Photograph by Edw. A. Gouder

LOST IN ANTIQUITY ARE THE BUILDERS OF THIS RUINED TEMPLE

Tradition says Malta's prehistoric people were Cyclopes, a fabled race of giants with one eye in the center of the forehead. The residents left traces of their civilization in stone here at Tarshin. They worked without metal, cutting the blocks with sharpened flints.



Photograph by T. H. Salt

BEHIND A RAMPART OF WALLS RISE CRUMBLING PALACES OF THE EARLY CAPITAL.

At Notabile the Cathedral of St. Paul stands where Publius is thought to have lived when Paul was shipwrecked on the island. Near by is a gr^otto, in which, legend says, the Apostle dwelt during his stay. Pre-Christian catacombs are hewn in rock.



Photograph courtesy Malta Museum

AN ANCIENT WOMAN OF CLAY SLEEPS ON A CEREMONIAL COUCH

The statuette came from the Hypogeum at Hal Saf^olini, which is a maze of small rooms cut in the rock. Many relics have been found in the chambers, such as sea shells, vertebrae of fish, artificial seeds, ax-shaped pendants, tiny pillars, and holed stones.



© Donald McLeish

THUS HAVE TWO-WHEELED CARTS AND SHROUDED WOMEN ENTERED THIS MALTESE TOWN SINCE ITS GATES WERE BUILT

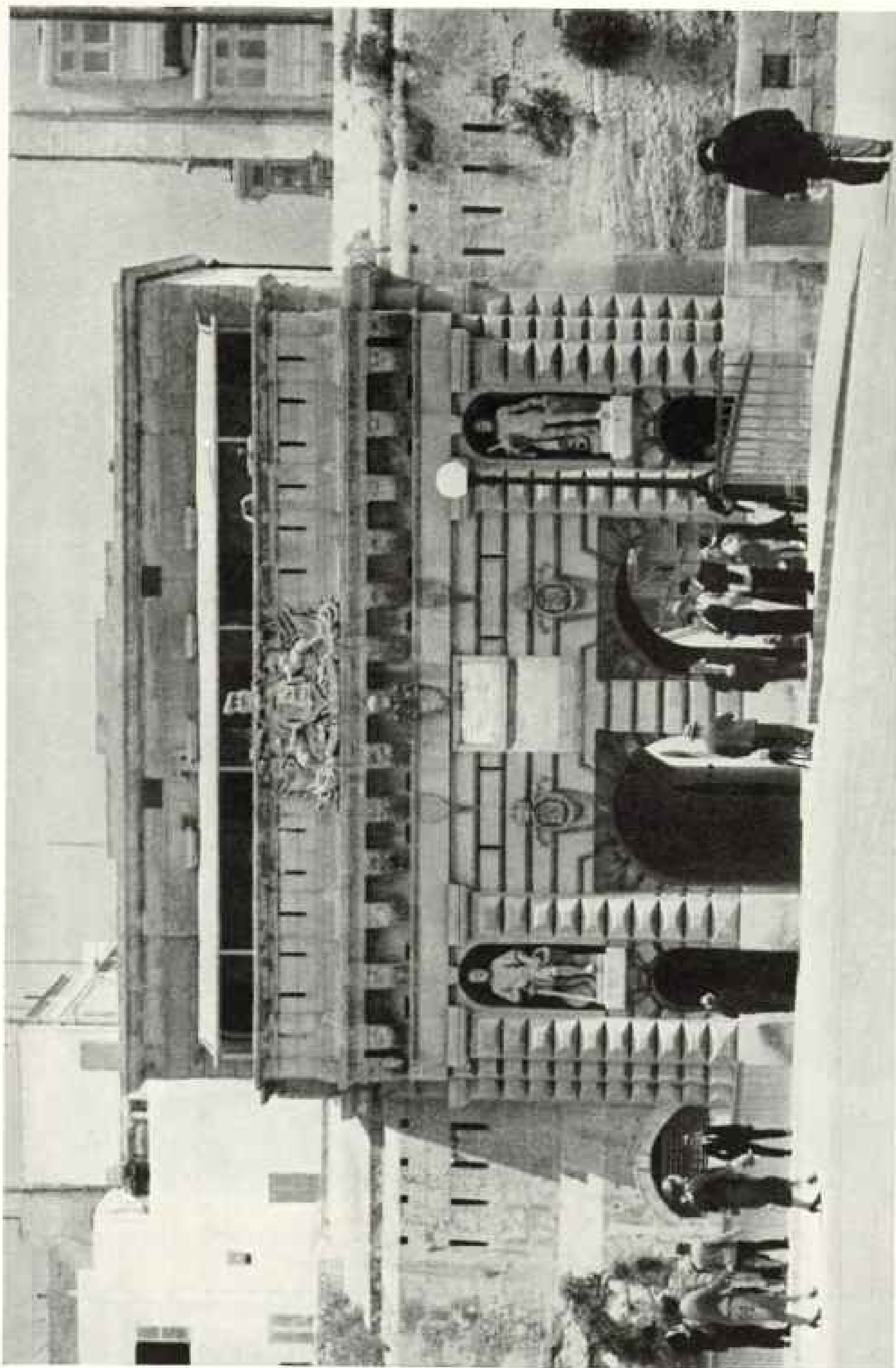
Great Britain, like her predecessors on the island, has effected little change in the lives of the people. Their language, their carts, and their dress remain as they were long before the Union Jack flew over the land. Here a villager driving a diminutive donkey exchanges greetings with a woman acquaintance hurrying along on foot. Everywhere the streets are kept clean. Men haul barrels of water to dirt roads and sprinkle the surface to keep down the dust.



© Donald McLeish

STREET AND SIDEWALK ARE ONE BENEATH OVERHANGING BALCONIES IN
THE WINDING LANES OF BIRKIRKARA

Women wearing their traditional headgear pause under an awning to escape the sun and exchange morsels of gossip. Children are numerous, for boys and girls marry young and have large families. The sculptured figure standing high above the street at the corner suggests a Madonna and Child. Religion plays an important part in the lives of the people and Biblical scenes are often portrayed. Elaborate festivals are held, especially during Lent (see page 650).



Photograph by Edm. A. Goudar

KNIGHTLY FIGURES GUARD A MASSIVE GATEWAY SEPARATING VALLETTA FROM FLORIANA, ITS SUBURB

The statue in the niche at the left of the gate represents Jean Parisot de la Valette, for whom the town was named. He became Grand Master of the Knights of St. John and led the defense of Malta when the Turks besieged it in 1565 (see page 647). With fewer than 9,000 fighting men, he finally drove the Mohammedan forces of at least 30,000 back to their ships.



© Grand Studio

THOUSANDS OF WORSHIPERS GATHER AT FLORIANA FOR AN OUTDOOR RELIGIOUS SERVICE

St. Paul, patron saint of Malta (the island is called Melita in the New Testament), was shipwrecked on the northwest coast about seven miles from Valletta A. D. 67. He healed the father of Publius, "the chief man of the island," and spread Christianity among the people. Houses of worship are numerous and beautifully decorated.



Photograph by T. H. Salt

LITTLE MALTESE TWO-WHEELERS RATTLE OVER THE STONY STREETS

The islanders have used such vehicles for centuries. Ancient tracks in the rocks of Malta apparently are ruts made by somewhat similar carts in prehistoric times (see illustration below, and text, page 650).



Photograph by C. Zammit

RUTS OF ANCIENT CART ROADS CRISSCROSS MALTA'S ROCKY SURFACE

The tracks measure from four to six inches wide—just about the width of ruts made by the two-wheeled carts used on the island today. Some of the imprints are worn eight inches deep. They lead inland to cliffs, outward to the sea, everywhere. They even antedate the Phœnician occupation of Malta.



GAILY DECORATED SKIFFS BOB UP AND DOWN IN GRAND HARBOR

Swarms of canopied *dghajns*, or "dicers," cluster about liners when they arrive. The small boats have tapering, bladelike prows, as did old Venetian gondolas. Many bear the names of saints and some have eyes painted on them (see text, page 650).



Photographs by T. H. Salt

A BRITISH BATTLESHIP IN GRAND HARBOR "DRESSES OVER-ALL"

On special occasions bright flags are flown from bow to stern. Valletta, one of the world's most strategic ports, is valuable to Great Britain as a refueling and repair station. The island "stepchild of the Mediterranean" has been held successively by many nationalities.

123,000 livres tournois. But, twelve years later, the Order resold the group to some French merchants.

Because of the density of population, the paucity of soil, and the abundance of excellent building stone, which in the course of ages takes on a beautiful golden patina, the proportion of Malta's area that is built on is exceptionally high.

And every corner of the islands is eloquent of the Knights' history: towns, villages, and even the tiny island of Comino, from whose stony fields, where is cultivated the cumin seed from which the island takes its name, there rises one of the massive square keeps which they scattered throughout their territory.

The villages, called *casals* in Malta, are not villages in the ordinary sense. They are compact stone townships of tall houses and narrow streets, solidly built in good substantial baroque architecture and sometimes holding a population running into five figures.

Their outskirts may be dignified with the spacious country house of some nobleman, concealed behind high walls amid charming gardens—the beauty of the Maltese gardens is celebrated—while the focus of the *casal*, both literally and metaphorically, is the parish church, usually a baroque structure of golden sandstone flanked by two massive towers.

A VILLAGE CHURCH HAS ONE OF THE WORLD'S LARGEST DOMES

An exception is the parish church of Musta, built in the classical style in the middle of the last century mainly by the efforts, both technical and financial, of the villagers themselves. It is topped by a dome which is one of the largest in the world. In sheer size it compares with those of St. Sophia in Istanbul and St. Peter's in Rome. It is higher internally than the dome of the Roman Pantheon, and exceeds by 16 feet the diameter of that of St. Paul's in London.

The Maltese are among the most devoted sons and daughters of the Roman Catholic Church. There is no sacrifice they will not gladly make for the embellishment of their churches.

They are ardent churchgoers; they love the ecclesiastical processions which are one of the features of Maltese life and which, on Good Friday, assume something of the realism of a Passion Play.

On the annual *festa* of their villages, the local saint's day, they give themselves up whole-heartedly to rejoicings. The celebrations are punctuated by the detonation of crackers, maroons, and every form of noise-making contrivance and illuminated by ingenious, locally made fireworks.

On these days the towns are brave sights when they fly from the top of every house of importance the flag of the Grand Master who was their patron or their founder, gay with the rich heraldry and coloring of the last phase of the age of chivalry.

GOVERNOR'S HOME ONCE PALACE OF GRAND MASTERS

Malta is an island of palaces and churches, and the Governor of Malta is probably more interestingly housed than any other colonial administrator.

In Valletta he has, though it is now mainly used for official purposes, the massive Palace of the Grand Masters, with its magnificent state apartments, its armory with one of the finest collections of armor in the world, and its tapestry chamber with a superb set of Gobelin tapestries. These were made for that very room at the end of the 17th century by order of the Spanish Grand Master Perellos and they are as well preserved in coloring and texture as if they had been completed yesterday.

The Throne Room served as the original Chapter Hall of the British Order of Saint Michael and Saint George, and is adorned with a contemporary frieze depicting various incidents in the Siege of Malta.

Adjoining one side of the Palace is the Library, the last building of importance to be erected in Malta by the Order and containing a notable collection of manuscripts, books, charts, deeds, and armorial bindings connected with the Order. The archives of the Knights, dating back to the period of their rule in Rhodes, which Bonaparte had not time to remove, are housed in another of the departments of the Government.

Except in the hot summer months, the Governor usually resides in the Palace of San Antonio, between Valletta and Notabile, whose gardens, open to the public, are celebrated (see page 649).

The summer residence is the lordly feudal castle of the sixteenth century that dominates the southern end of the island and was built by the splendor-loving Verdala, the only one of Malta's Grand Masters who



Photograph by Edw. A. Gouder

ST. JOHN'S CO-CATHEDRAL CRYPT SHELTERS THE TOMBS OF EARLY GRAND MASTERS

The Cathedral's 400 marble memorials to the Knights, its mosaic pavements, its statue of John baptizing Christ, and its solid silver altar railing, which escaped Napoleon's grasp because a priest had painted it black, make the church one of the most interesting places in Valletta. Pope Innocent IV conferred the title "Grand Master" upon the chief of the Knights in 1252. In Malta the Order developed its own flag, its coinage, its customs, and became virtually a sovereign State.

was at the same time a Cardinal of the Roman Church. This moated fortress is surrounded by the Boschetto Gardens, containing the sole wood in these islands so bare of trees. There Verdala and his guests were wont to hunt the gazelles which he imported from the North African mainland.

The Knights of the seven Languages, or nations (later eight), into which the Order was divided, were lodged in their several auberges, or hostels. These auberges, magnificent buildings for the most part retaining their original features unimpaired, are still in use. That of Italy (see page 650) now is the Museum; that of Castile, the finest of all, serves as naval and military headquarters; that of Auvergne houses the Courts of Justice; that of Provence, with its magnificent dining-room, the Union Club. The Anglo-Bavarian Auberge is a school, those of Aragon and France serve Government purposes.

The division into Langues, so characteristic of this international Order, is manifest also in the sumptuous Co-cathedral of St. John in Valletta, among whose principal features are the richly decorated chapels set apart for each of the Order's component nations. What with these, and its tombs of the Grand Masters, its heraldic paving stones of members of the Order, and its tapestries likewise given by Grand Master Perellos, not Gobelins this time, but masterpieces of the Brussels factory, some woven from cartoons by Rubens, St. John's is one of the most brilliant churches in Christendom.

Beautifully crowning a rocky scarp that rises picturesquely almost in the middle of the island, the small fortified burgh called Mdina in Maltese is one of the most unspoiled of all medieval and Renaissance towns. It also is known by its other names of Notabile, or Citta Vecchia, because King

Alfonso of Aragon called it the most notable jewel in his crown. It was the capital of Malta before the Knights came and Grand Master La Valette built the city which bears his name (see text, page 647).

A HAUNT OF ANCIENT PEACE

Consisting almost entirely of convents, churches, and the roomy, stately palaces of the Maltese nobility, surrounded by a moat and by a complete cincture of walls and bastions that rise superbly above the plain, with narrow, shadowy streets along which sandaled friars pad their silent way, streets so narrow that the sky appears above them only as a narrow streak of blue, Notabile is indeed a gem of a bygone era and a haunt of ancient peace.

Malta has its own nobility, recognized by the Court of St. James's, with an official precedence granted by the Maltese Government and its own Committee of Privileges.

There are 25 of these Maltese peerages, most of them feudal titles granted by the Grand Masters, but one of them goes back to the fourteenth century. The present holder of this venerable title and the premier Noble of Malta is the Most Noble Mary Inguanez, Baroness in her own right of Diar-il-Bniet and Bukana.

This lady resides in an ancient and beautiful palace in Notabile. In one of the many apartments is a marble slab bearing the following inscription:

On the IX November, 1927
His Most Catholic Majesty
King Alfonso XIII
Honoured Baroness Inguanez
With a visit to this house
In which for three months
King Alfonso I
Lived as a guest of the
Inguanez family in
1432.

The Baroness Inguanez represents, among many other families, the ancient Maltese clan of Sceberras, which once owned the promontory on which Grand Master La Valette built the city of Valletta. The head of the Sceberras family at that time, so tradition has it, generously gave the land on which the Grand Master's Palace was erected, to be held by the Grand Masters on a perpetual leasehold for the annual payment of five grains of wheat and the offering of a glass of water from the Palace well.

The water was to be offered to the head of the Sceberras family by the Grand Master himself in the Hall of the Grand Coun-

cil, now the Throne Room, or Hall of St. Michael and St. George (see page 664). It is legitimate to suppose that the special opening of the mouth of the well outside the Throne Room on the first floor of the Palace, protected by an ornamental grille, was made to enable this right to be exercised.

It is a peculiarity of the Maltese titles that, although they include the ranks of Marquis, Count, and Baron, there is no distinction in seniority between the ranks, precedence being determined solely by the date of creation. Some of the titles are sonorous in the extreme, as examples will show: Marquis of St. George, Marquis Testaferrata Olivier, Baron of Ghariexem and Tabia, Baron of Benuarrat, Marquis of Grien Is-Sultan, Count of Ghain Tuffieha.

The principal industry of the islands is agriculture, and the Maltese, despite the stony nature of their land, are skillful and industrious farmers with a wonderful knack of extracting the utmost from the soil, despite methods still somewhat primitive.

Maltese potatoes and Maltese oranges have a high reputation, vegetables are good, while wheat does well where there is room to grow it. But the islands can produce only a fraction of their annual consumption of cereals, and much has to be imported from outside.

Among the most typical of the modern survivals from the era of the Knights are the underground granaries in the open space between Valletta and Floriana. These are sealed with round stone lids and still are used for conserving the island's stocks of imported grain (see page 656).

The lacemaking industry is traditional, and cloth is beginning to be woven from locally grown cotton. The countryside cannot be called grand, but Malta itself, and still more the sister-island of Gozo, are pleasantly green in winter and a rich red in March and April when the clover is in flower. Later the freshness of winter and spring gives way to a brown aridity.

Cicero referred to Malta as a land of honey and roses, while the Maltese like to call their country the "flower of the world." This term, if held to refer only to scenery and vegetation, might seem to verge on the excessive. If it be taken to apply to the many-sidedness of Malta's interests and amenities, it is not altogether without justification.

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Four New Stars of first magnitude now sparkle in the automobile sky—the 1936 Buicks. Above is one of the four—the new BUICK Century, a cyclonic conqueror of distance and time. Crowning its graceful modern beauty is the sleek, streamlined solid steel "Turret Top" Body by Fisher—with perfected No Draft Ventilation

THE public and the trade agree that the outstanding motor car feature of today is the solid steel "Turret Top" body. Clearly as a date line, this single feature unmistakably marks the modern automobile from the cars of even the recent past.

By the protective crown of seamless steel it arches over the heads of passengers, it makes a major contribution to safety.

In its clean lines and flowing contours it enables new harmonies of beauty and subtleties of style, expressed in the loveliest cars the world has

so far seen.

It is a buttress to strengthen the whole car structure, its ruggedness stiff-

ening and reinforcing the entire assembly.

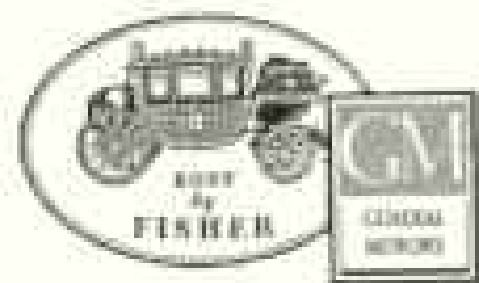
It is cooler under the summer sun, as proved by conclusive tests, and warmer in winter — quiet with the engine idling, or at speed.

It is economical for the owner, because it obviates any chance of leakage, any need for top repairs or re-dressing.

Its many advantages are so clear and so obvious that today it "dates" a car almost as definitely as a serial number.

No thoughtful purchaser of a motor car in the months to come will overlook the big dollar-and-cents importance to him of the solid steel "Turret Top" Body by Fisher.

It contributes directly to the enjoyment-value as well as to the re-sale value of the modern automobile, and is found only on General Motors cars.



The Solid Steel "TURRET TOP" Body by Fisher

*Registered

BODY BY FISHER on GENERAL MOTORS CARS ONLY:

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THE LONGEST WAY 'ROUND

... is the most romantic way home.

*Here's a world-cruise route that cuts the widest
globe-circling swath in travel history!*



THE circumference of the world is not always 24,902 miles, as the books say—there are many ways around it. One route, by air around the upper part of the Northern Hemisphere, totalled only 15,596 miles. And ships, too, can follow a number of courses . . . around South America or the Cape of Good Hope, below or above the Equator.

Yet most world-cruises have shown little originality in their routes. Most of them wind around not far above the Equator, rarely dipping below it. Only the Cunard White Star liner *Franconia*, built for just such voyages, has gone far off the beaten path in world-cruise exploration. It was she that first called at Bali. It was she that inaugurated the Southern Hemisphere route, permitting pleasure travelers to visit with ease the wonders of Madagascar, South Africa, South America.

This next year again the *Franconia*

does something new . . . reaches a climax in her adventurous circumnavigations. She, first among world-cruising liners, will combine the Northern and the Southern Hemisphere routes. She will not only circle the Cape of Good Hope, but will sail as far north as Japan. Her passengers will see Peiping as well as Rio de Janeiro, Tokyo as well as St. Helena and South Africa, Siam and the wonders of the Indies as well as Madagascar! She not only circles the globe from west to east . . . but from north to south her round-the-world swath is more than 5000 miles wide!

Pore over the itinerary outlined below . . . and think of visiting those glamorous lands in the *Franconia*, that favorite among world-cruising liners. Get literature, ship-plans and rate-sheets now . . . from your local travel agent or Cunard White Star Line, 25 Broadway and 638 Fifth Avenue, or Thos. Cook & Son, 587 Fifth Avenue, New York.



SEE JAPAN . . . AND SOUTH AFRICA, TOO!—Nikko at Cherry Blossom time, and Victoria Falls . . . both available, for the first time, in one world cruise!

FRANCONIA

1936 Around the WORLD CRUISE
sails from New York Jan. 7 to

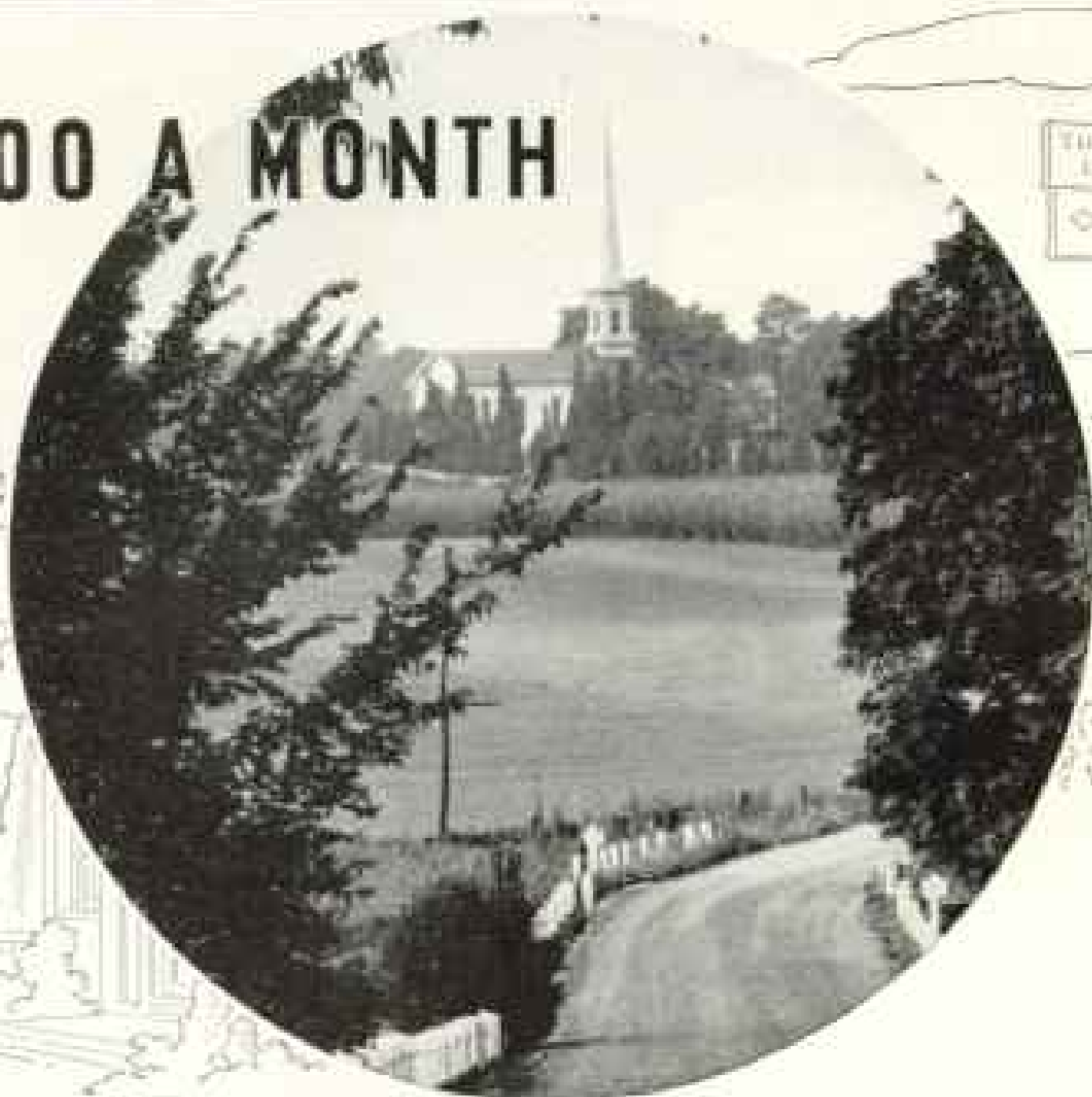
TRINIDAD BRAZIL ST. HELENA
SOUTH AFRICA MADAGASCAR
SEYCHELLES INDIA* CEYLON
STRAITS SETTLEMENTS SIAM JAVA
BALI PHILIPPINES CHINA JAPAN
HAWAII CALIFORNIA PANAMA

*To include Bombay,
Delhi, Agra, Fatehpur Sikri.

Returns to New York May 20th
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144 days, Over 34,000 miles of ocean travel. Over 4,400 miles of shore excursions in the regular program. All included in the low rates of \$1750 up.

ON \$100 A MONTH



You can live
in Tranquility, N.J.

It's a charming little town—Tranquility, New Jersey—with an old church and comfortable homes, near the line between Warren and Sussex counties. As in many other parts of this interesting state, you could live there on \$100 a month, enjoying the tranquil old age that comes with earned leisure.

New Jersey has many beautiful spots—peaceful and quiet—where it would be pleasant to live when you retire from the strenuous work-day world. Down on Cape May you would find the climate much like that of some Southern States, with snow-fall of any depth a curiosity, and seldom a really uncomfortable day.

You may prefer some other part of the country when you retire—or your own home town—but what plans have you made for your less active

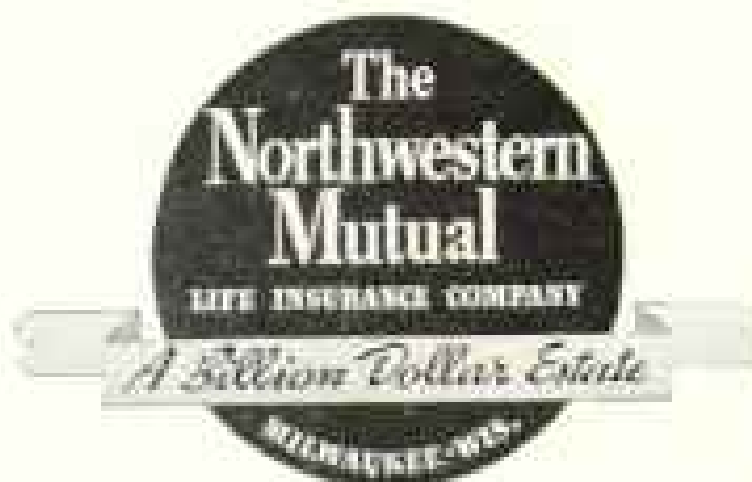
years when your earning ability may begin to fail you? Can you count on an income of \$100 a month, or more, when you are 55, or older?

More men and women than ever before are now answering that question by taking out NORTHWESTERN MUTUAL RETIREMENT INSURANCE. They want to live in tranquility. They may reach 55 with an income of more

than \$100 a month—but they want to be sure of that much at least.

Write for the
Wander Spot Book

Mail coupon for the "Wander Spot" booklet—describing and illustrating more than 25 American communities where an elderly person, or couple, can enjoy life on \$100 a month.



The Northwestern Mutual
Life Insurance Company
Milwaukee, Wisconsin
Write for coupon, name and full address.
Name _____
Address _____
City _____

The assets of the Northwestern Mutual, as reported to state insurance departments, now total a billion dollars—a great estate administered for the mutual welfare and protection of more than 600,000 policyholders with over three and a half billions of insurance in force.

MORE CURIOUS FACTS ABOUT Southern California

FIRST discovery of California gold was made in England in 1831. (Found on the roots of trees sent back by a Scotch botanist.)

Famous Southern California extremes: world's largest vineyard, olive, citrus groves; highest U. S. point (Mt. Whitney); lowest U. S. point (Death Valley); largest U. S. city in area (Los Angeles); world's oldest, largest living thing (4000-year-old tree).

Southern California is sometimes called the "millionaire's playground." Yet costs here are 18% under the U. S. average.

The first transcontinental train trip to California in 1869 took 6 1/4 days. Now it's just overnight from New York by plane, 3 days by train, 5 to 7 by auto or stage. Ships took 3 months; now 2 weeks.

Although the highest U.S. mountain range extends the length of California, slopes are so gradual that cross-country motorists detect no "mountain driving" at all.

Gas from hot geysers at Salton Sea is compressed into "dry ice" to refrigerate fresh fruit.

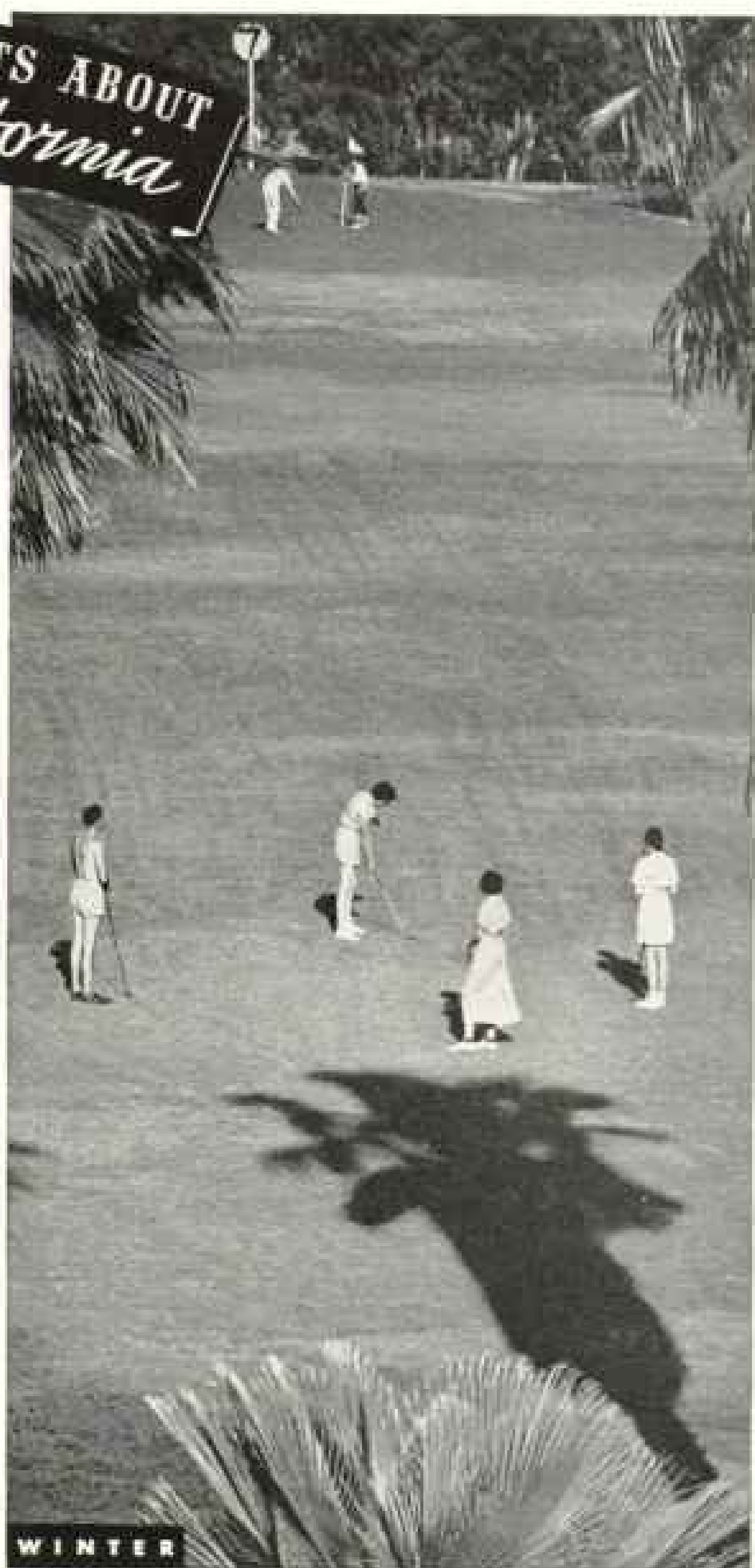
Southern California has sunshine an average of 315 days out of the year's 365.

The climate is only one reason for Southern California's unique open-air markets. Scarcity of flies and other insects is another.

Movie studios find right here virtually every type of the world's scenery: Alps, South Seas, Sabana, Black Forest, Riviera, Irish Lakes, etc.

From Mt. Wilson you can see Pasadena, Long Beach, Santa Monica, Glendale, Beverly Hills, Pomona and 50 other cities in one view.

By Pony Express, mail cost \$10 an ounce between California and the East. Today a



penny postcard carrying this coupon brings you FREE an interesting, 80-page book answering impartially every Southern California vacation question (what to do and see, itemized costs, 100 photographs, maps, etc.).

ALL-YEAR CLUB OF SOUTHERN CALIFORNIA

Come to California for a glorious vacation. Advise anyone not to come seeking employment, lest he be disappointed; but for tourists, the attractions are unlimited.

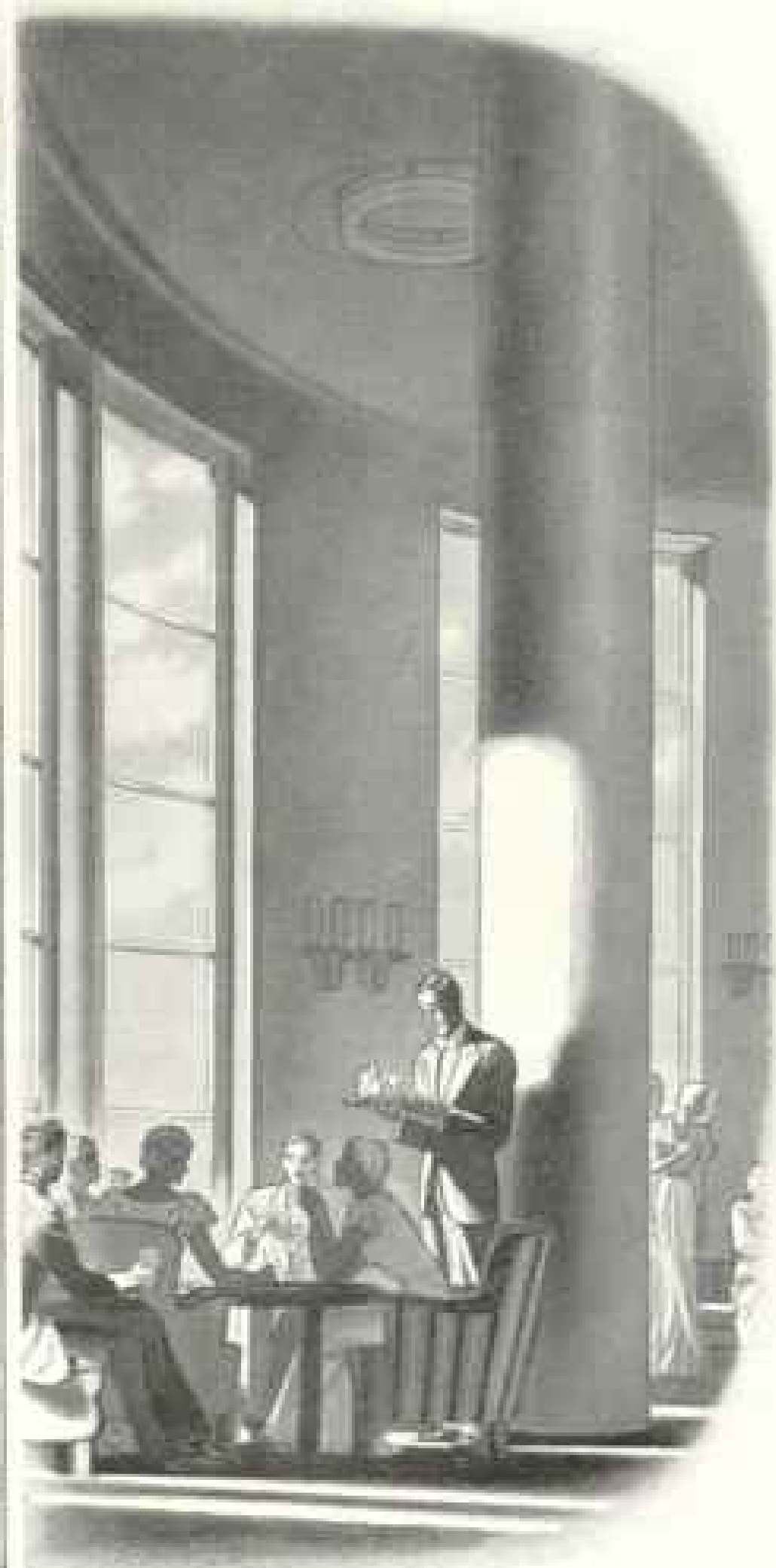
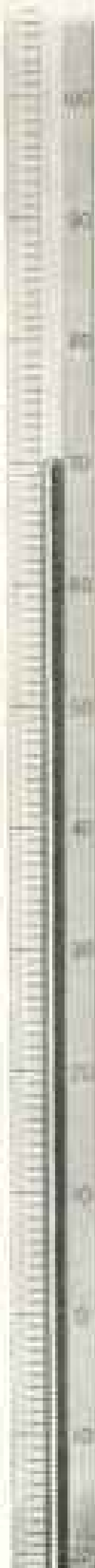
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All-Year Club of Southern California,
Dept. 11-G, 629 So. Hill St., Los Angeles, Calif.
Send me free book with complete details (including costs) of a Southern California vacation. Also send free routing by auto, rail, plane, bus, steamship. Also send free booklet about countries checked: Los Angeles, Santa Barbara, Riverside, Orange, Inyo, San Diego, Ventura, San Bernardino, Imperial.

Name _____
Address _____

OUTDOOR "LIDO" LIFE .. INDOOR SPLENDOR

ONLY ON THE SOUTHERN ROUTE CAN YOU ENJOY BOTH
ALL YEAR ROUND...THE THERMOMETER TELLS WHY.



*Actual readings at noon on Dec. 11, 1934, show...68° on the
Conte di Savoia (1 day from New York)...11° in New York
at same time. Ask for booklet of other amazing statistics.

IT goes on right through the winter! Lido life combined with ship-splendor. Warm, sun-flooded decks—together with the sumptuous interiors of great ships that rank with the most modern and magnificent afloat! • Only on the Southern Route is the combination possible—the thermometer proves it. Last winter when New York lay in the clutch of zero temperatures, Italian Line ships were sailing in warm mid-ocean sunshine—with the thermometer at 70° and passengers actually swimming in the great outdoor pools! • You enjoy sun-travel at its best aboard the brilliant superliners—

Rex and Conte di Savoia. Likewise, more leisurely, aboard the original Lido-ship Roma, or the Vulcania or Saturnia, each with a whole deck of private verandah-suites. On your winter trip abroad—choose the route the sun shines on!

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New York: 624 Fifth Ave.; Philadelphia: 1601 Walnut St.; Boston:
86 Arlington St.; Cleveland: 944 Arcade, Union Trust Bldg.; Chicago:
133 North Michigan Ave.; San Francisco: 389 Post St.; New Orleans:
1504 American Bank Bldg.; Montreal: Archambault Bldg.; 1133 Beaver
Hall Hill; Toronto: 139 Bay St.



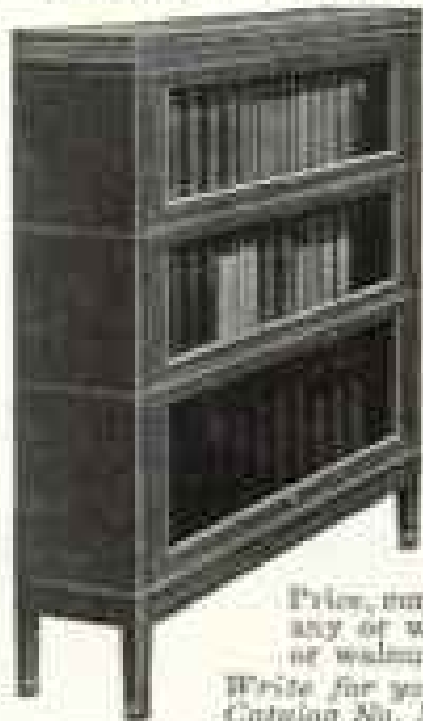
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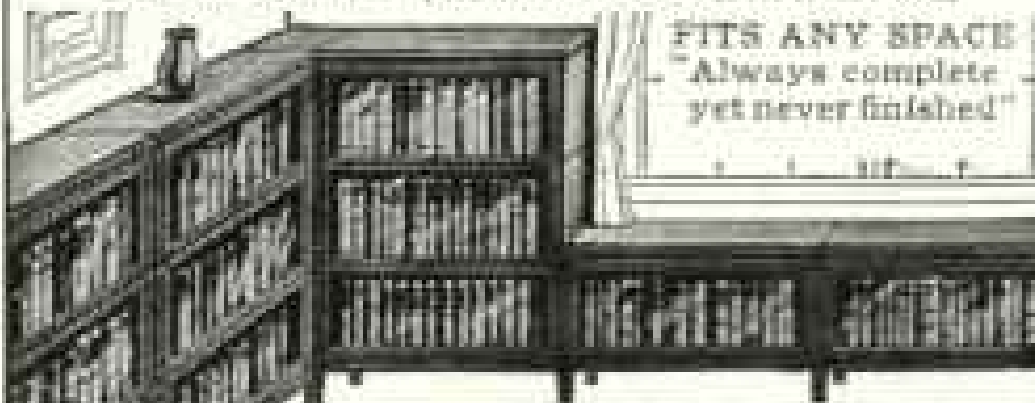
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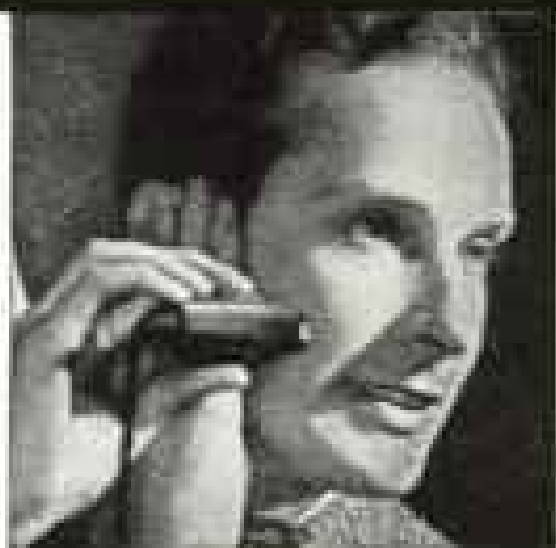
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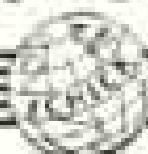
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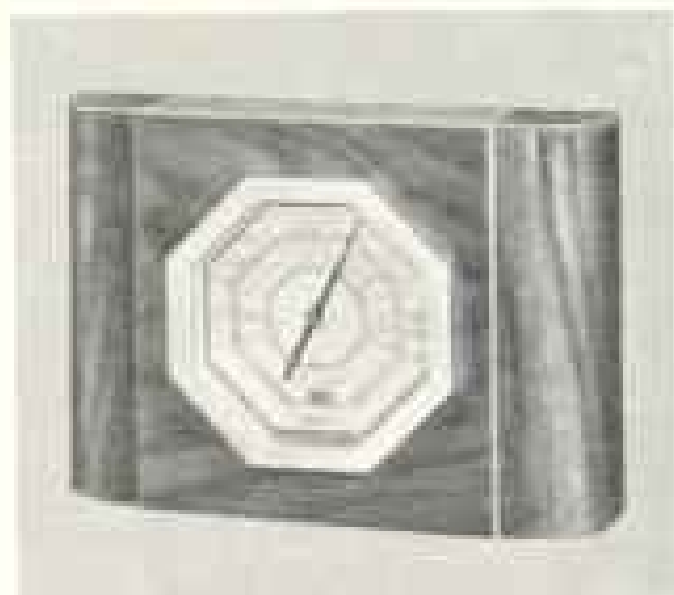
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A STORMOGUIDE PREDICTS THE WEATHER 24 HOURS IN ADVANCE

PELTING RAIN or bright sunshine...gales or calm, they all show up on a Stormoguide. No need to wait until the weather strikes you. Look at your Stormoguide and know it hours in advance. Plan your golf games, your auto trips, any outdoor activities, sure in the knowledge you can count on the weather. Uncanny? Of course it is, but easily explainable. Stormoguides are made by Taylor, the same company that for nearly a century has made instruments to predict, measure, and chart atmospheric

conditions for official weather bureaus, for noted explorers, and for leaders in scientific research. With this wealth of experience behind them, no wonder tomorrow's weather is an open book—no kind of weather is likely to catch a Stormoguide off guard. They are made in many styles and sizes and types of design; prices range from \$7.50 to \$60. If your favorite store cannot supply you, call or write direct to Taylor Instrument Companies, Rochester, New York. Offices also in Toronto, Canada.



"GROSVENOR" STORMOGUIDE. Mahogany, walnut, or maple-and-walnut frame. Dull-gilt brass dial. Altitude adjustment to 3500 feet. Also has automatic signal device which tells at a glance what the weather tendency is. An exclusive feature with most Taylor Stormoguides. \$15.00.*

START A WEATHER BUREAU OF YOUR OWN. It's a fascinating hobby. Taylor makes many types of instruments for predicting, measuring, and charting the weather. Send for a copy of the Scientific Catalogue.

*Prices slightly higher west of the Rockies and in Canada.

Taylor

INSTRUMENTS

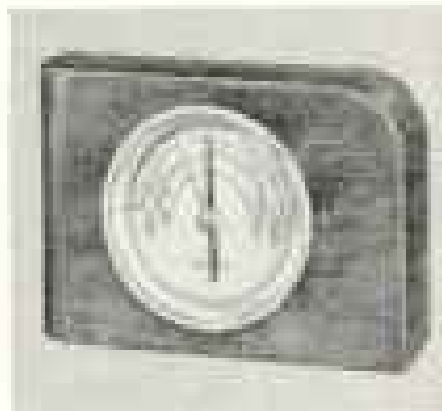
IN INDUSTRY, other types for indicating, recording and controlling temperature, pressure and humidity.



"STRATFORD" STORMOGUIDE. Dark mahogany-finished frame in good-looking, modern design. 4-inch grained brass finished dial, easy to read. Altitude adjustment to 3500 feet. Set according to elevation of your locality. \$7.50.*

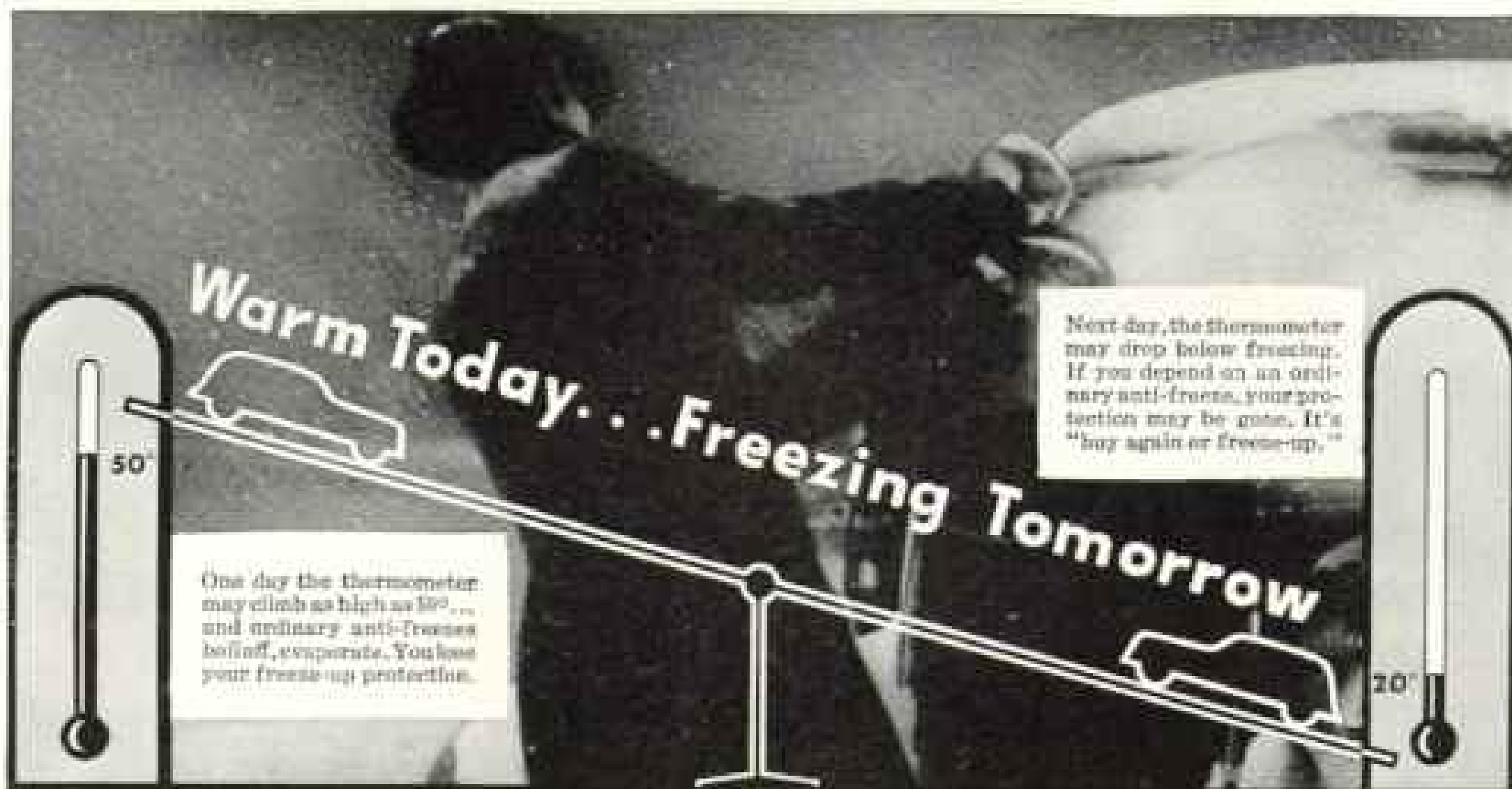


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"WARWICK" STORMOGUIDE. Mahogany-finished frame. 4-inch grain brass-finished dial. With lens. Altitude adjustment to 3500 feet. Also has exclusive Taylor weather-tendency indicator that works automatically. \$10.00.*

DON'T GET CAUGHT IN



Put in EVEREADY PRESTONE

the GUARANTEED* ANTI-FREEZE

One shot, put in now, will guard your car against freeze-up and rust all winter. Eveready Prestone won't boil off no matter how warm the weather gets between the cold snaps. Has no odor. Specifically guaranteed.

Ask Your Dealer This One Question

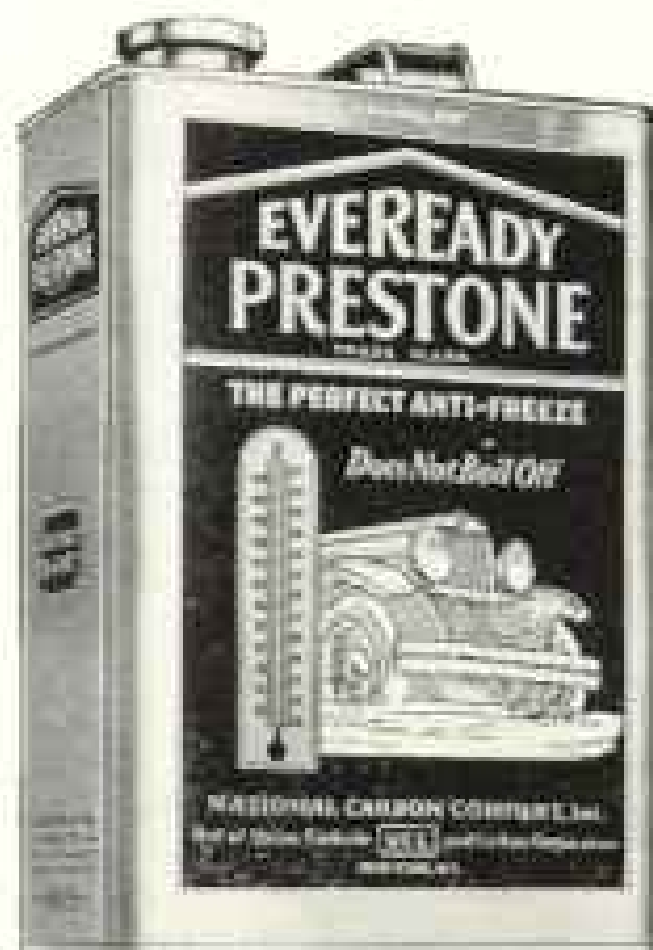
Of more than 100 brands of anti-freeze on the market, most are based on alcohol—but are not plainly labeled as such. So ask your dealer this question about any anti-freeze you consider buying: "How much of this product is alcohol?" That is important, for alcohol, no matter how disguised or what it is called, is subject to evaporation, leaving you without adequate protection.

Your dealer will tell you that Eveready Prestone contains no glycerine, no alcohol... and that it will not boil off or evaporate. Back of every drop of Eveready Prestone is the following guarantee... your definite assurance of all-winter protection.

* A DEFINITE GUARANTEE

*National Carbon Company, Inc., specifically guarantees that Eveready Prestone, if used according to printed directions, in normal water cooling systems, will protect the cooling system of your car against freezing and clogging from rust formations for a full winter, also that it will not boil away, will not cause damage to car finish, or to the metal or rubber parts of the cooling system, and that it will not leak out of a cooling system tight enough to hold water.

Special Offer... A "Weather Wheel" which will help you to forecast the weather. Also "Weather as a Hobby"... a 48-page illustrated book, prepared by weather experts. Full of fascinating weather facts. Send 10c stamps or coin to National Carbon Co., Inc., Box 600, Grand Central Station, New York, N. Y.



UCC

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THE WINTER SEE-SAW

FIND YOUR CAR ON THIS CHART

IMPORTANT! The price per gallon of an anti-freeze means nothing unless you know how many gallons you will need during the entire winter. You can't get that information on a half-way anti-freeze. But you can get it for Eveready Prestone...and here it is. See how reasonably you can get two-way protection all winter long against both freeze-up and rust with one shot of Eveready Prestone—one shot because it won't boil off, no matter how warm the weather gets between the cold snaps. If your car isn't on this chart, your dealer has a chart showing all cars; and amounts needed for temperatures to 62° below zero.

Find your car and read from left to right. The first figure shows the protection you get with one gallon of Eveready Prestone in the cooling system; the second with one and a half gallons—and so on. "+" means above zero, "-" means below zero. If your car has a hot water heater, add 1/4 gallon to the quantity called for.

	1 GAL.	1 1/2 GAL.	2 GAL.	2 1/2 GAL.
Auburn				
6-12, '24; 8-12, '28	+17	-4	-27	-39
8-100, '32; 8-101, 8-102, '33	+18	+2	-26	-42
8-95, '31; 820, '24; 821, '28	+17	+8	-9	-28
Buick				
40, '24, '25;				
46, '27; 50, '31, '34, '38	+8	-13	-24	
46, 48, '27; 49, '31, '34, '38	+10	-8	-24	-42
48, 49, '32; 49, '34, '38	+13	+2	-19	-42
81, 92, '32; 90, '34, '38	+19	+9	-2	-19
Cadillac				
370-D, '24, '28	+14	2oz	-21	-20
392-D, '24, '28	+16	+8	-12	-24
402-D, '24, '28	+19	+8	-2	-19
370-A, '31; 392-B, '32; 392-C, '33	+21	+19	+2	-9
Chevrolet				
Standard, '23, '24, '26	-12	-12		
Master, '23, '24, '26	-8	-47		
Master, '31, '32	2oz	-24	-42	
Chrysler				
6-, '27, '31, '34, '35	+12	-4	-27	-38
8-, '31, '32, AP, EMP, '33	+15	+2	-16	-42
Roy R, Roy R, '33; Air R, '33	+19	+4	-12	-24
Imp., '26, '27, '30, '33, '34	+18	+8	-8	-23
De Soto				
6-, '31, '32; '33; 8-, '31	+19	-8	-24	-42
6-, '34	+16	+4	-12	-19
Admiral, Admiral, '35	+12	-4	-27	-39
Dodge				
6-, '22, '23, '24	+12	-4	-27	-39
See 6-, '30; New Six, '23	+13	+2	-16	-42
6-, '22, '23	+8	-12	-43	
Ford				
A-, '28, '31; B-, '32, '33	+12	-4	-27	-39
V-8, '32, '33, '34	+13	+2	-16	-42
V-8, '35	2oz	-24	-42	
Graham				
11-501 6; 72-A, '36	+18	+4	-8	-23
6-, 8-, '31; 8-, '34; '37, '38	+19	+4	-12	-24
Hudson				
6-, '31, '32, '34; 6-, '35	+14	2oz	-21	-20
6-, '33	+16	+4	-12	-24
6-, '34	+12	-4	-27	-39
Hupmobile				
18, '31; Com. 8, '32; 125, '33	+17	+9	-9	-28
417, 421, '34; 511, '35	+19	+9	-1	-19
Hupmobile (cont'd)				
123, '32; 422, '34; 518, '35	+17	+8	-9	-28
325, '32; 425, '34; 527, '35	+19	+10	2oz	-12
La Fayette				
1944; 2010, '35	+17	+2	-16	-42
La Salle				
350, '34; 35-82, '35	+15	+2	-16	-42
343-B, '37; 345-C, '38	+21	+13	+4	-8
Lincoln				
126, '32, '34, '35; 145, '34, '35	+23	+17	+10	-2
Nash				
60, '31; 660, '32, '35, '31; 970, '32	+3	-25	-42	
1120, 1070, 1170, '33; 1220, '34	+12	-4	-27	-39
1280, '34; 2280, '35; 1080, 1180, '32	+17	+8	-9	-28
Oldsmobile				
F-30, '30; F-31, '31; F-35, '35	+3	-25	-42	
F-32, L-32, '32; F-33, '33, L-'33	+12	-4	-27	-39
L-33, '33; L-34, '34	+13	+2	-16	-42
Packard				
120-'33				
Sup. 8-, '32, '34; 8-, '34, '35	+12	-4	-27	-39
Sup. 8-, '35	+16	+4	-12	-24
745, '30; 845, '31; Div. '32	+18	+8	-8	-23
Pierce Arrow				
41, 42, 43, '31; 54, '32; 838-A, '34	+21	+12	+3	-9
840-A, '34; 845, '35	+22	+15	+6	-5
Plymouth				
30, '30; PF, PG, '34	+8	-18	-24	
PA, '31; PB, '32; PE, '34; PJ, '35	+10	-8	-24	-42
PC, PD, '33	+2	-23	-42	
Pontiac				
'30, '31; 6-'32, '35	+6	-14	-24	
8-'33, '34, '35	+8	-17	-43	
Reo				
6-21, 6-25, '32; FC '35; Roy, '35	+12	+2	-16	-42
8-25, '32; 9-5, '33; 9-6, '34	+16	+4	-12	-24
Studebaker				
Com. 8, '31, '32, '33; Div. 6, '34, '35	+10	-8	-24	-42
Div. '31, Com. 8, '34; Pres. 8, '35, '34	+14	2oz	-21	-20
Pres. 8, '31, '32, '35; Com. 8, '32	+17	+9	-9	-28
Terraplane				
6-, '32, '33; 6 Spec. '32	+3	-23	-42	
8-, '33; 6 DeL., '33	+10	-8	-24	-42
6-, '34	+14	2oz	-21	-20

PRICE REDUCED AGAIN
Eveready Prestone was used by a million more motorists last winter than the winter before. Thanks to by far the highest volume in its history, the price has been reduced again to only \$2.70 a gallon.

\$2.70
A GALLON



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Cancer of the Breast?

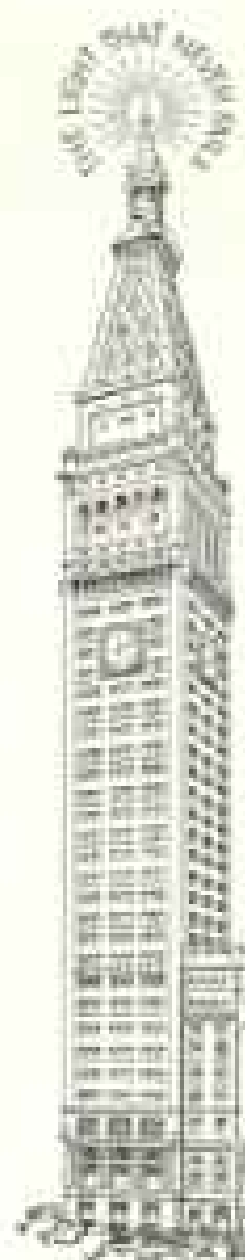
Many women who fear that they have breast cancer are worrying without cause

Most "lumps" in the breast are not cancer. But the dangers of untreated cancer of the breast are so great that every woman owes it to herself to discover the true nature of any lump, or other unusual condition, as soon as she becomes aware of it.

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Breast cancer occurs at almost any age but mainly among women over forty. After a woman reaches the age of thirty, careful examination of the breasts should always be a part of her periodic health examination. Husbands should urge their wives to have examinations regularly.

Whenever a lump is discovered in the breast, a careful and exact study should be made to determine whether it is definitely cancer, possibly cancer, or not cancer at all. Your physician will probably recommend that the diagnosis be made by a specialist. In its early stages a breast cancer usually yields to expert use of surgery, with or without the help of X-rays or radium. Safety lies in prompt action.



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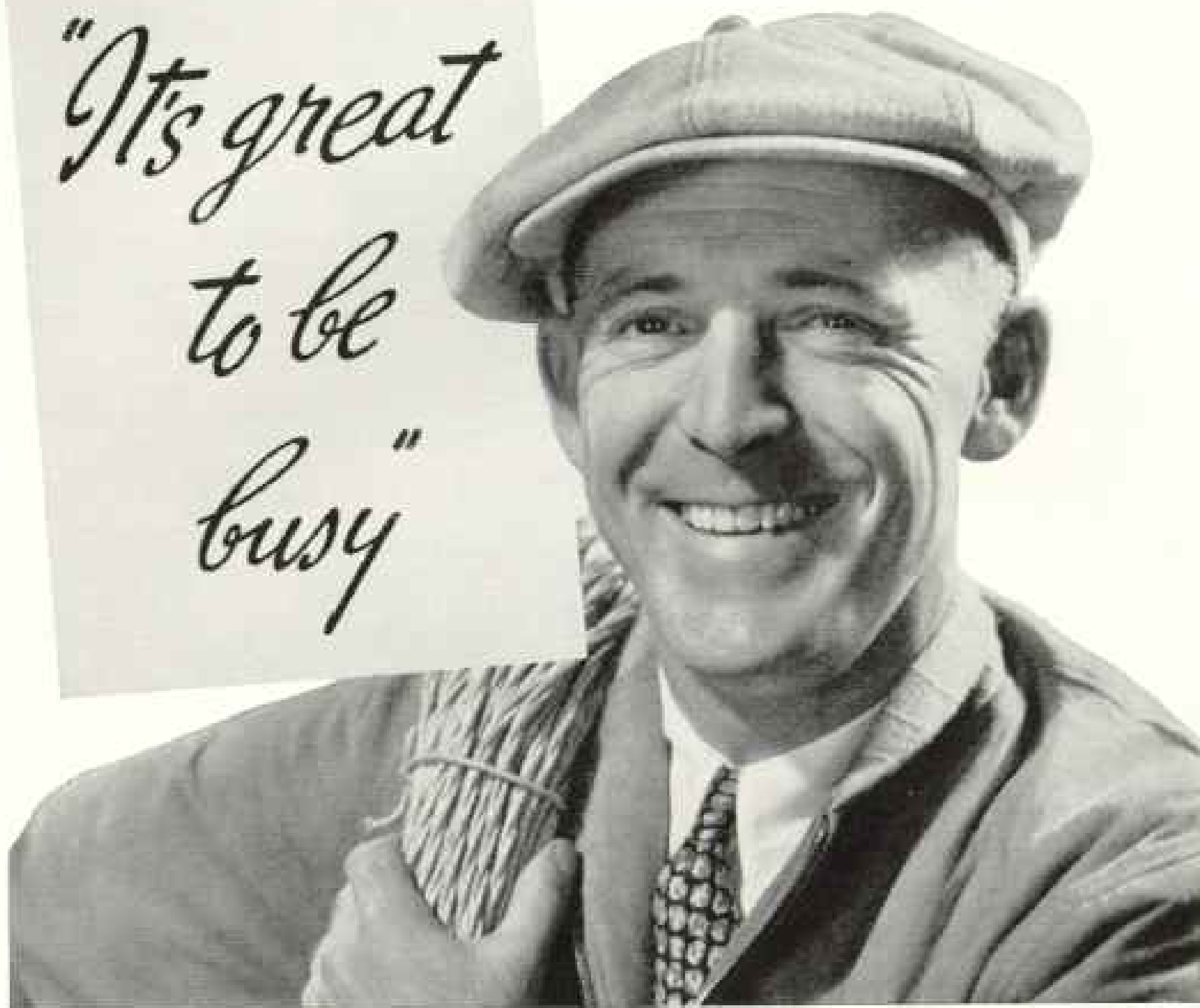
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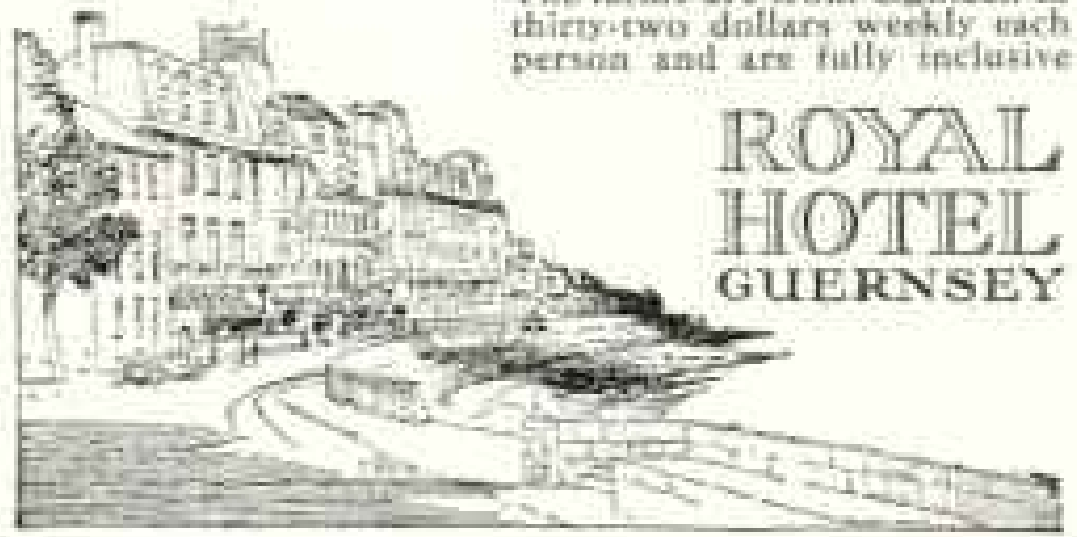


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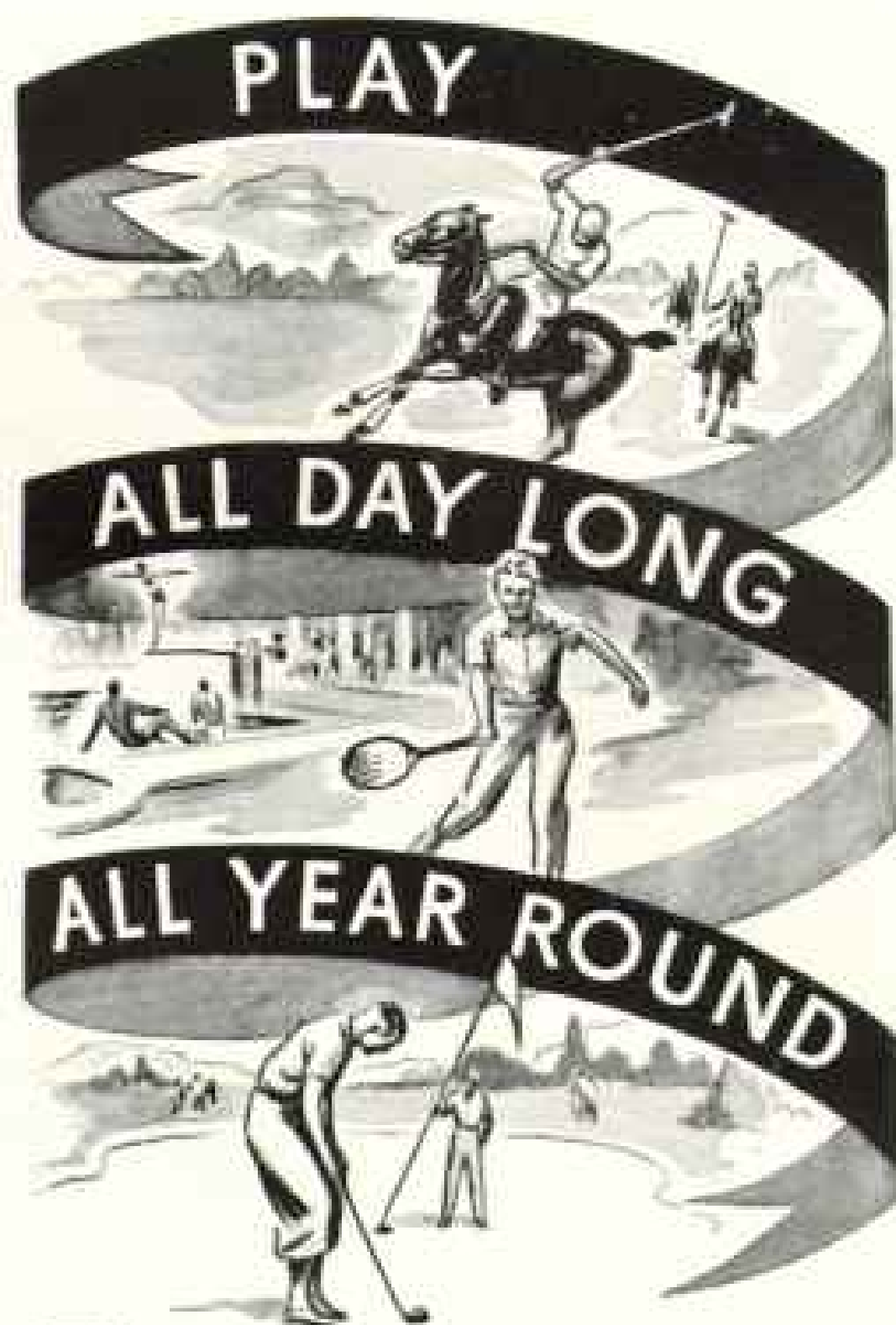
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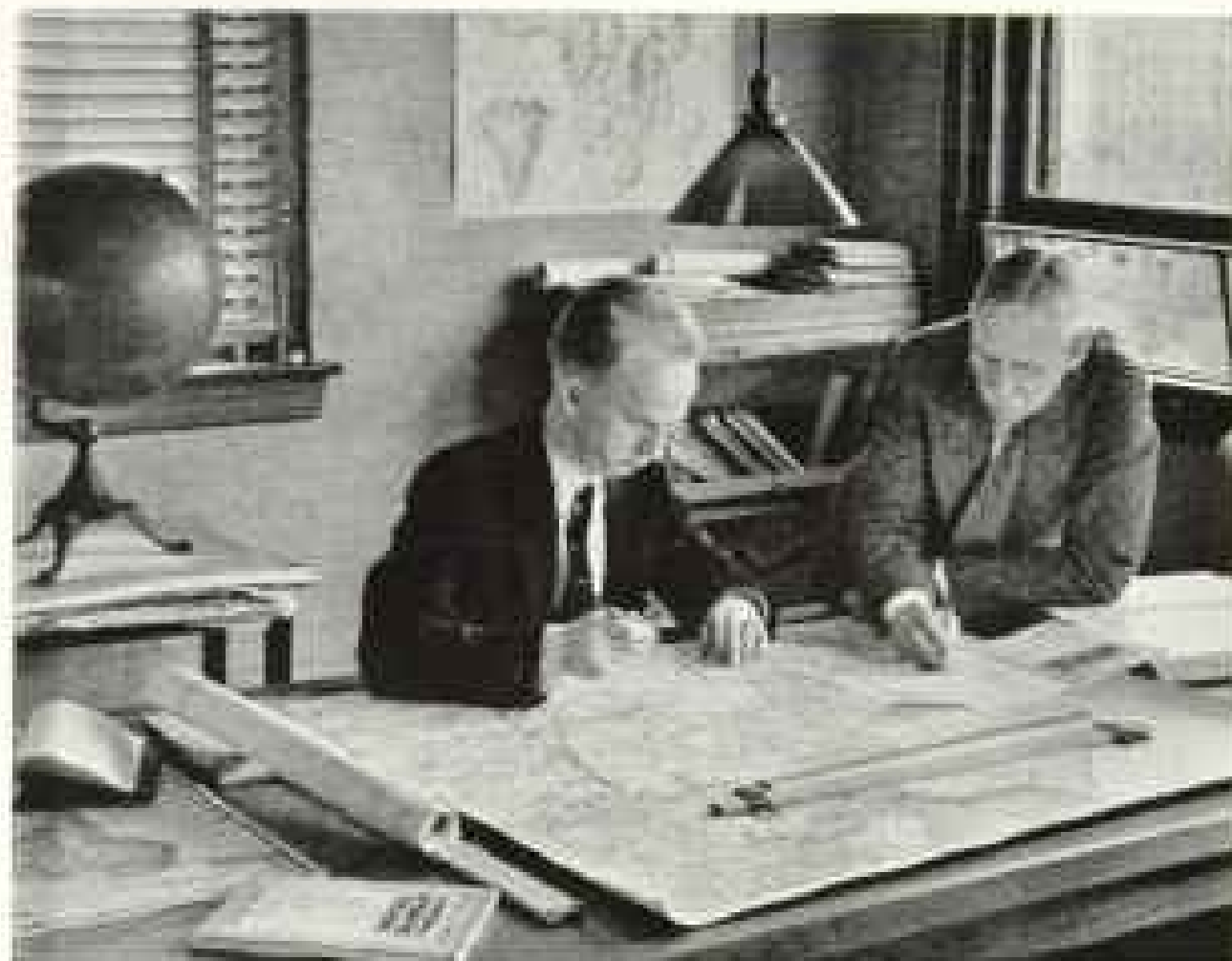
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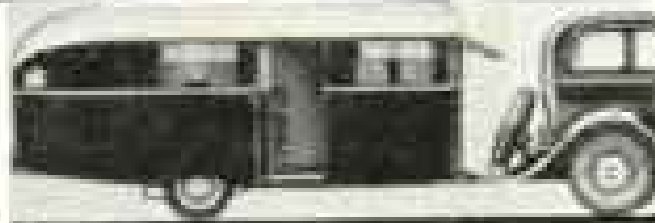
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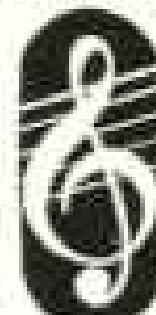
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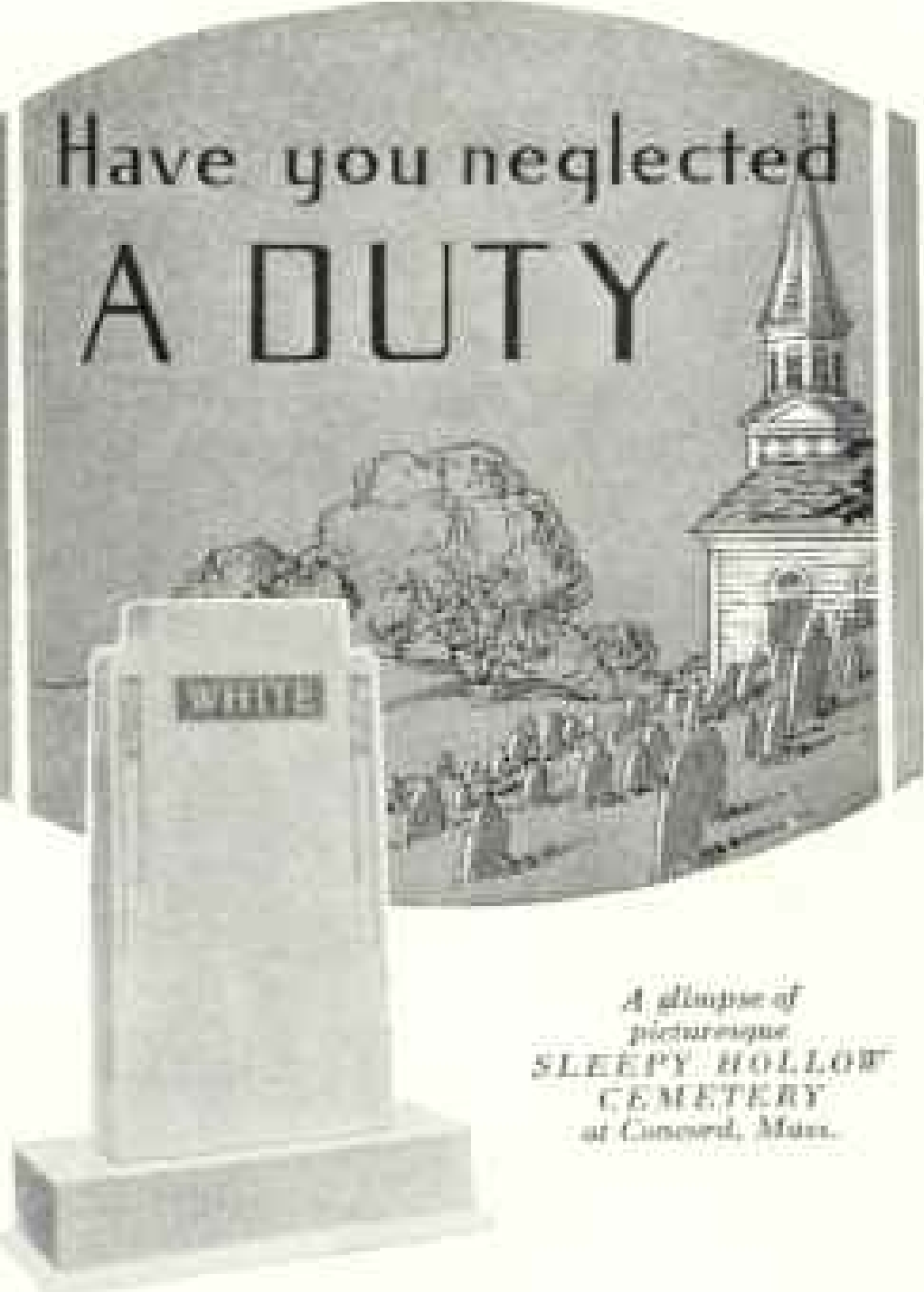
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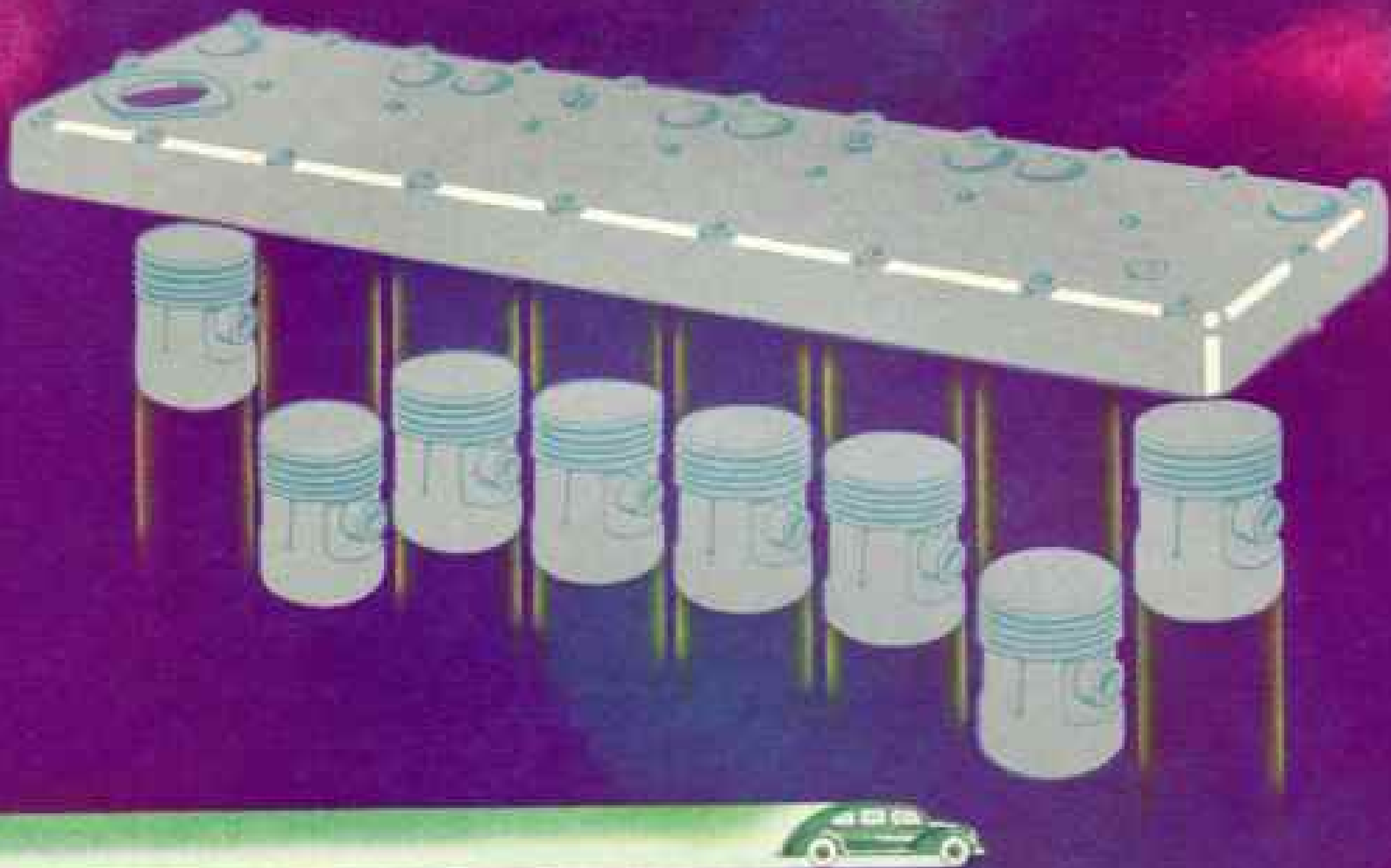
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