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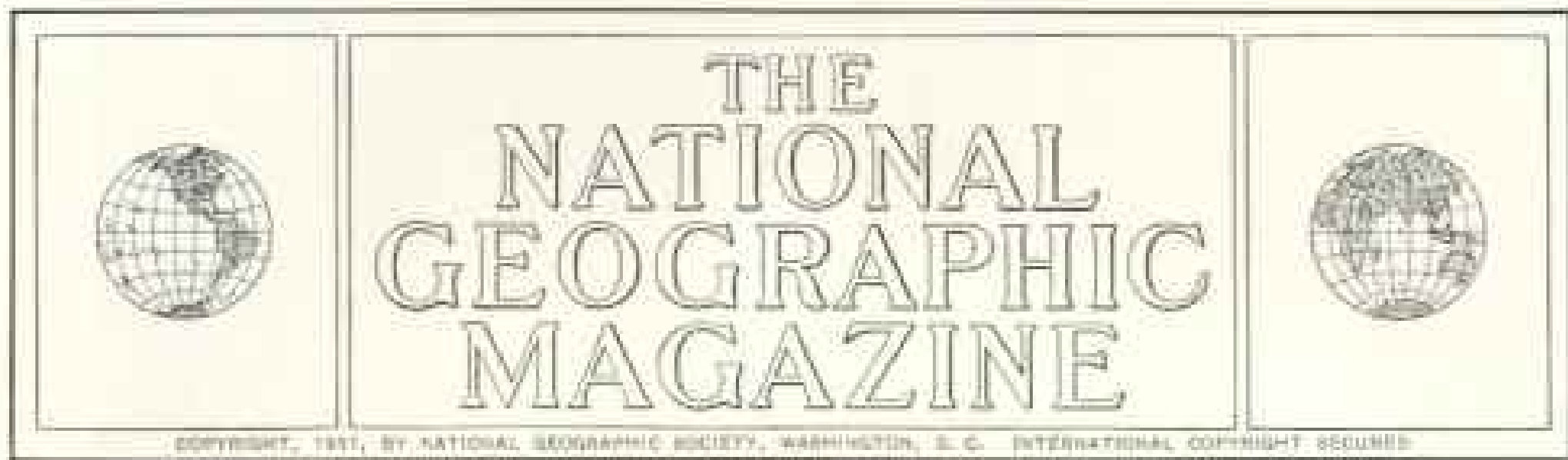
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## A ROUND TRIP TO DAVY JONES'S LOCKER

Peering into Mysteries a Quarter Mile Down in the  
Open Sea, by Means of the Bathysphere

BY WILLIAM BEEBE

SEVERAL years ago I climbed overboard into the clear waters of Haiti, and after a copper helmet had been lowered over my head and shoulders I slid slowly down a rope two, four, eight, ten fathoms and finally at sixty-three feet my canvas shoes settled into the soft ooze near a coral reef. I made my way to a steep precipice, balanced on the brink, and looked down, down into the green depths where illumination like moonlight showed waving sea-fans and milling fish far beyond the length of my hose.

It would have been exceedingly unwise to go much farther, for the steady force of the weight of water at ten fathoms had already increased the pressure on eardrums and every portion of my head and body to almost forty-five pounds for each square inch. At double the depth I had reached I would probably become insensible and unable to ascend.

### HOW THE BATHYSPHERE WAS CONCEIVED

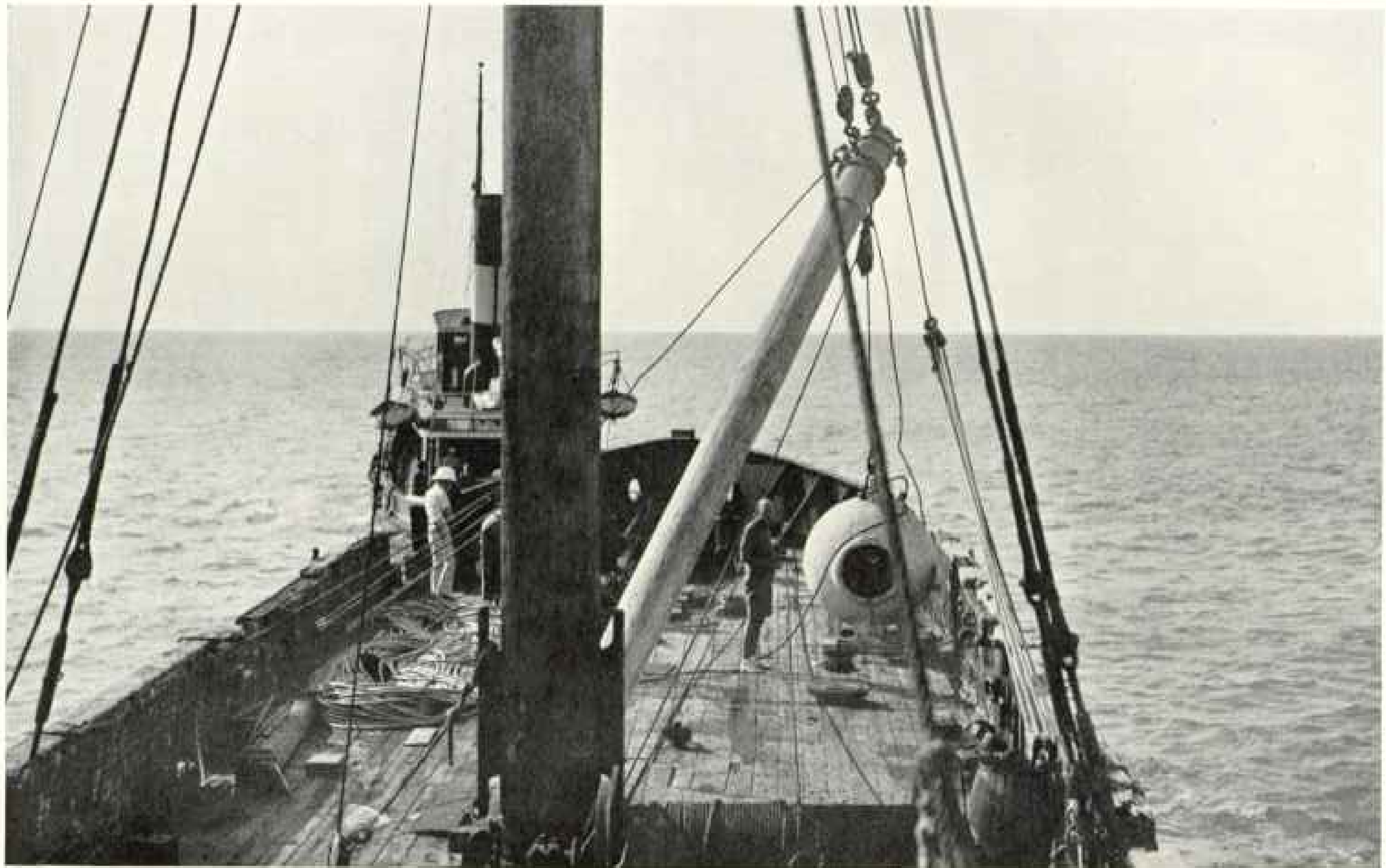
As I peered down I realized I was looking toward a world of life almost as unknown as that of Mars or Venus,—a world in which, up to the present time, our efforts at capturing the inhabitants have been pitifully trivial. Modern oceanographic knowledge of deep-sea fish is comparable to the information of a student of African animals, who has trapped a small collection of rats and mice but is still wholly unaware of antelope, elephants, lions and rhinos.

The hundreds of nets I have drawn through the depths of the sea, from a half to two miles down, have yielded a harvest which has served only to increase my desire actually to descend into this no-man's-zone. Many years ago I spent the best part of an evening with Colonel Theodore Roosevelt discussing ways and means of deep-sea diving. There remains only a smudged bit of paper with a cylinder drawn by myself and a sphere outlined by Colonel Roosevelt, as representing our respective preferences. We worked out many details but never recurred to the subject.

Two years ago Mr. Otis Barton and I were in frequent consultation concerning the possibility of a steel sphere, large and strong enough to permit us to enter, be sealed up, keep ourselves alive, to descend into and return safely from the depths of ocean.

Mr. Barton deserves full credit for the contribution of time and money he has devoted to this work. I was able to bring to bear but a small amount of helpful suggestion, but an unlimited belief and faith and keenest interest in the scientific results of this venture. Never for a moment did either of us admit the possibility of failure,—Barton sustained by his thorough knowledge of the mechanical margins of safety, while my hopes of seeing a new world of life left no opportunity for worry about possible defects.

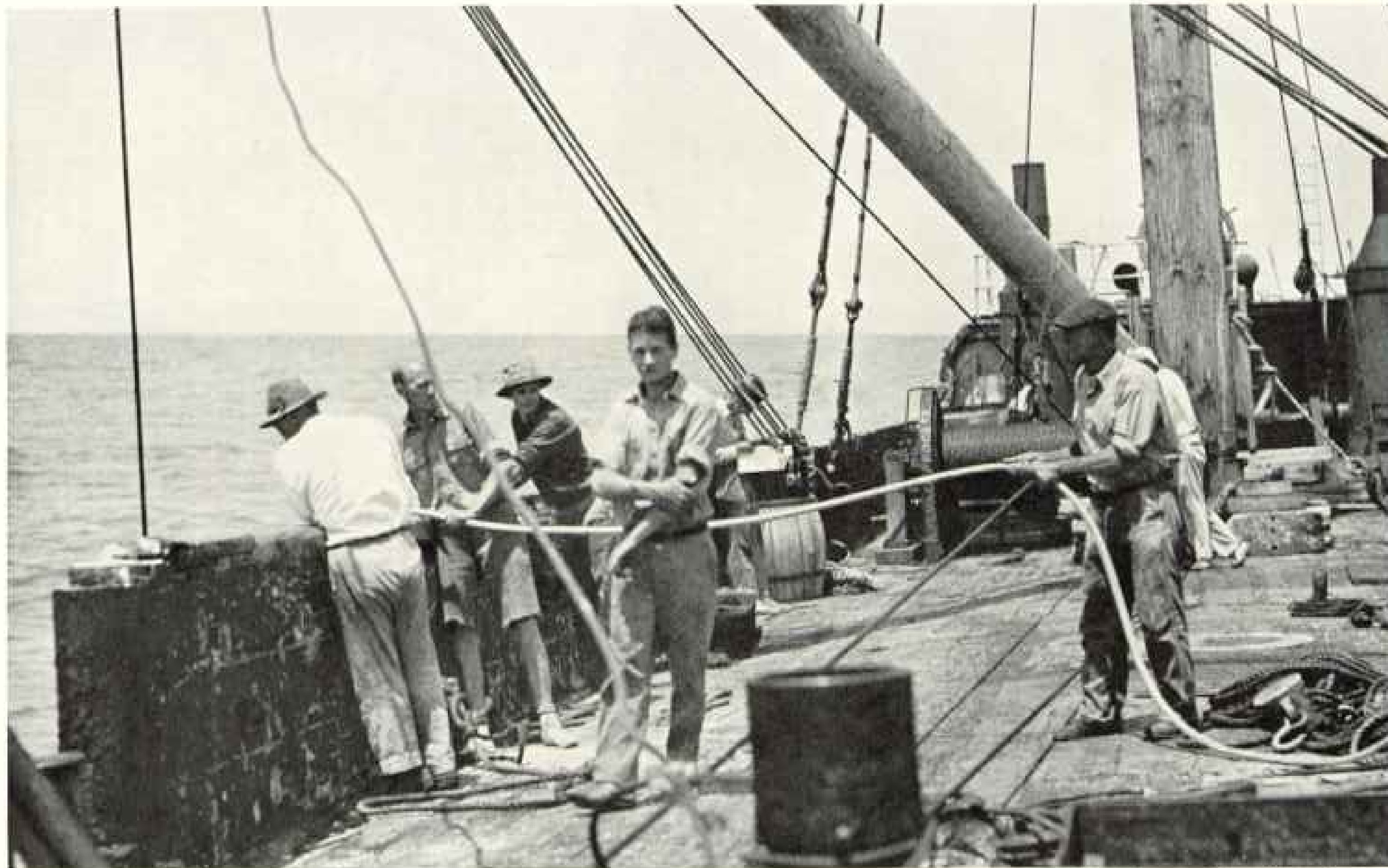
When the steel sphere finally took shape we fumbled for a name,—calling it in turn



Photograph from William Beebe

## THE BATHYSPPHERE ABOUT TO DIVE IN MID-OCEAN

The barge *Rendy* is fitted with a powerful derrick for lifting and swinging over the side the two-ton sphere (see illustration, page 658).



PAYING OUT THE TELEPHONE CABLE

Photograph from William Beebe

This solid rubber hose held the telephone and the electric light wires and had to be paid out carefully by hand and clamped every two hundred feet to the steel cable.



Drawn by James M. Darley

#### THE SCENE OF RECORD DEEP-SEA EXPLORATIONS OFF BERMUDA

The author established his shore laboratory on Nonsuch Island. His deepest dive (a quarter of a mile) took place at the point indicated by the star. For an account of the scene of these scientific investigations, see "The Islands of Bermuda," by William Howard Taft, in the NATIONAL GEOGRAPHIC MAGAZINE for January, 1922.

tank, cylinder and bell. One day, when I was writing the name of a deep-sea fish—*Bathytroctes*—I was struck by the appropriateness of the Greek prefix meaning deep: I coined the word Bathysphere, and the name has stuck.

For two years I had been studying the life of the deep sea off Bermuda, carrying on the work as the chief function of my Department of Tropical Research, financed by Harrison Williams and Mortimer Schiff, under the auspices of the New York Zoological Society. This field, and the methods of work of my deep-sea trawling seemed well adapted to dovetail with attempts at penetrating "in person" as the movies say, to depths far beneath the surface.

In April, 1930, I took my staff to my shore laboratory on Nonsuch which had been given by the Bermuda Government for oceanographic work. By the time my sea-going tug *Gladisfen* was in full operation the bathysphere was ready. Mr. Barton brought with him the great sphere weighing two tons, thirty-five hundred feet of seven-eighths-inch, non-twisting, steel cable, and a half mile of solid rubber hose containing telephone and electric light wires.

In my turn I was able to provide my great seven-ton, Arcturus winch, the *Gladisfen*

for towing us out to sea, and my staff for cooperation in the actual work. A huge, open-decked barge, the *Ready*, was chartered, furnished with a mast and derrick, two boilers for working the winches, and finally the bathysphere itself was hoisted on board. The barge was towed out and anchored in the lee of Nonsuch, and then we settled down to watch sea and sky, wind and barometer,—praying for fine weather.

#### THE START FOR THE FIRST DEEP-SEA DESCENT

June sixth was a day of almost perfect calm with only a long, heaving swell in mid-ocean. We were on board the barge early, and as soon as the *Gladisfen* came alongside took her towrope, and, describing a great circle around the reefs, headed out to sea through Castle Roads. The great jagged cliffs towered high on both sides, and on their summits the ruined battlements of the three old forts frowned down upon us.

Before we reached the foam-ringed mass of Gurnet Rock we felt the first gentle heave and settling of the swell of the open sea. We steered straight out and an hour later the angle of the two lighthouses showed that we were about eight miles offshore, with a generous mile of water under us.

Choosing a favorable spot under such conditions was much like looking around and trying to decide on the exact position of the North Pole. Or so I felt when they all awaited my signal to stop. I resorted to a temporal decision and the propeller of the *Gladisfen* stopped turning over at nine o'clock.

We put in the oxygen tanks, one of them fitted with a most delicate valve which permitted two litres of oxygen to escape every minute. There were two wire racks, one of calcium chloride for absorbing moisture, the other of soda lime for removing the excess of carbon dioxide from the air.

Finally we were all ready and I looked around at the sea and sky, the boats and my friends, and not being able to think of any pithy saying which might echo down the ages, I said nothing, crawled painfully over the steel bolts, fell inside and curled up on the cold, hard bottom of the sphere. This aroused me to speech and I called for a cushion. Otis Barton climbed in after me, and we disentangled our legs and got set.



Photograph from William Beebe

THE QUARTZ OBSERVATION WINDOW WAS SIX INCHES ACROSS

Once sealed inside, the diver's only method of communication with the outside world was by telephone or by signs through the window.

I had no idea that there was so much room in the inside of a sphere four and a half feet in diameter, although the longer we were in it the smaller it seemed to get. At Barton's suggestion I took up my position at the windows, while he hitched himself over to the side of the door, where he could keep watch on the various instruments. He also put on the ear-phones.

ISOLATED FROM THE WORLD OF SUN  
AND AIR

Miss Hollister on deck took charge of the other end of the telephone, while Mr. Tee-Van assumed control of the deck crew. I gave the word and the four-hundred-pound door was hoisted into the air and slipped into place with a clang of cold steel. The nuts were screwed down and then hammered home, the terrific reverberations almost deafening us inside.

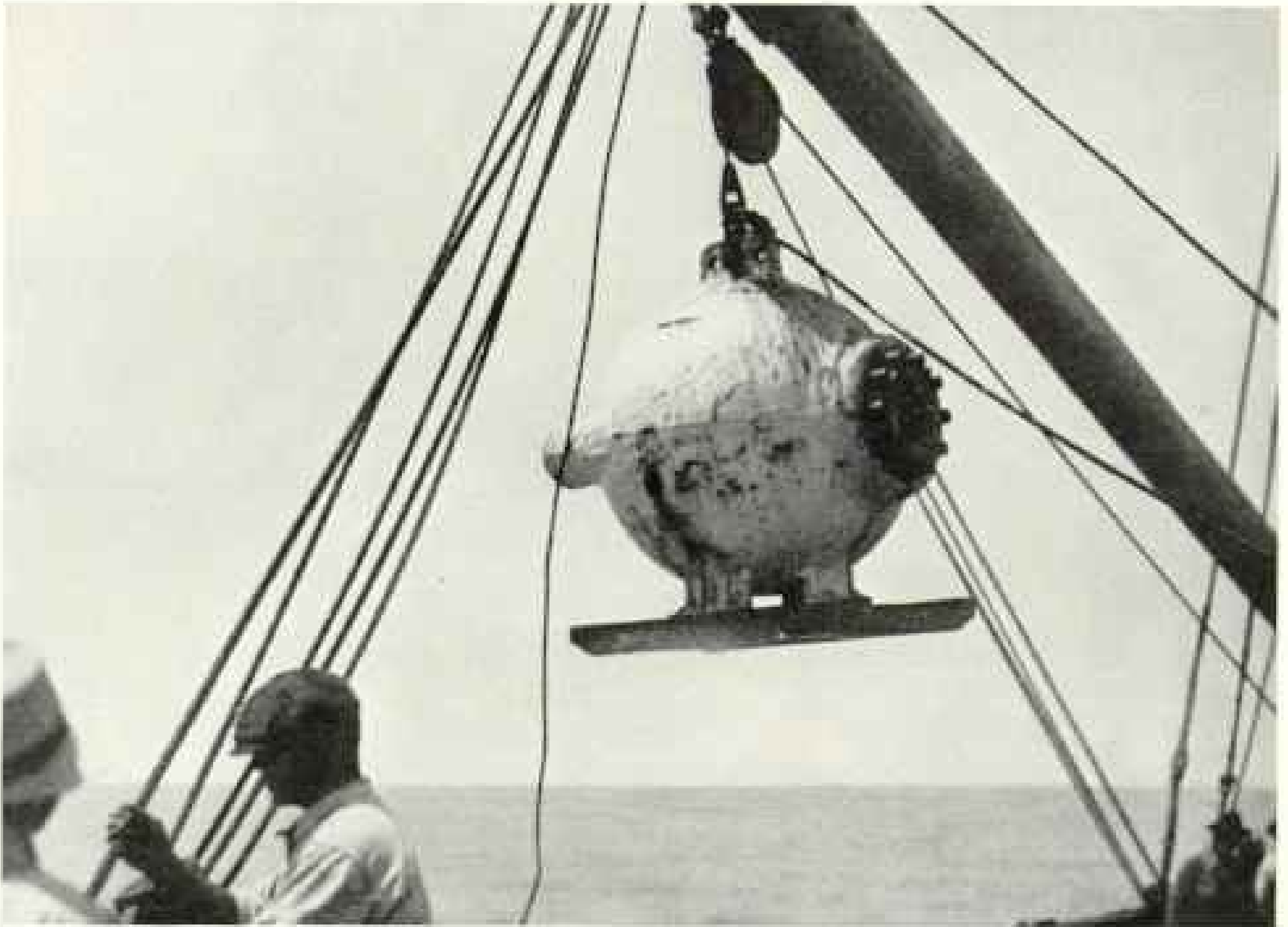
We were now fastened in tight with only a four-inch opening left in the center

of the door. At last this great bolt was screwed down and we were completely isolated from the world of sun and air, and from human beings except for the comforting words which slipped up and down the telephone wires.

I turned my attention to the windows, cleaned them thoroughly and tested the visual angles which I could attain by pressing my face close to the surface. The windows were made of fused quartz, three by eight inches, the strongest and most transparent substance in the world.

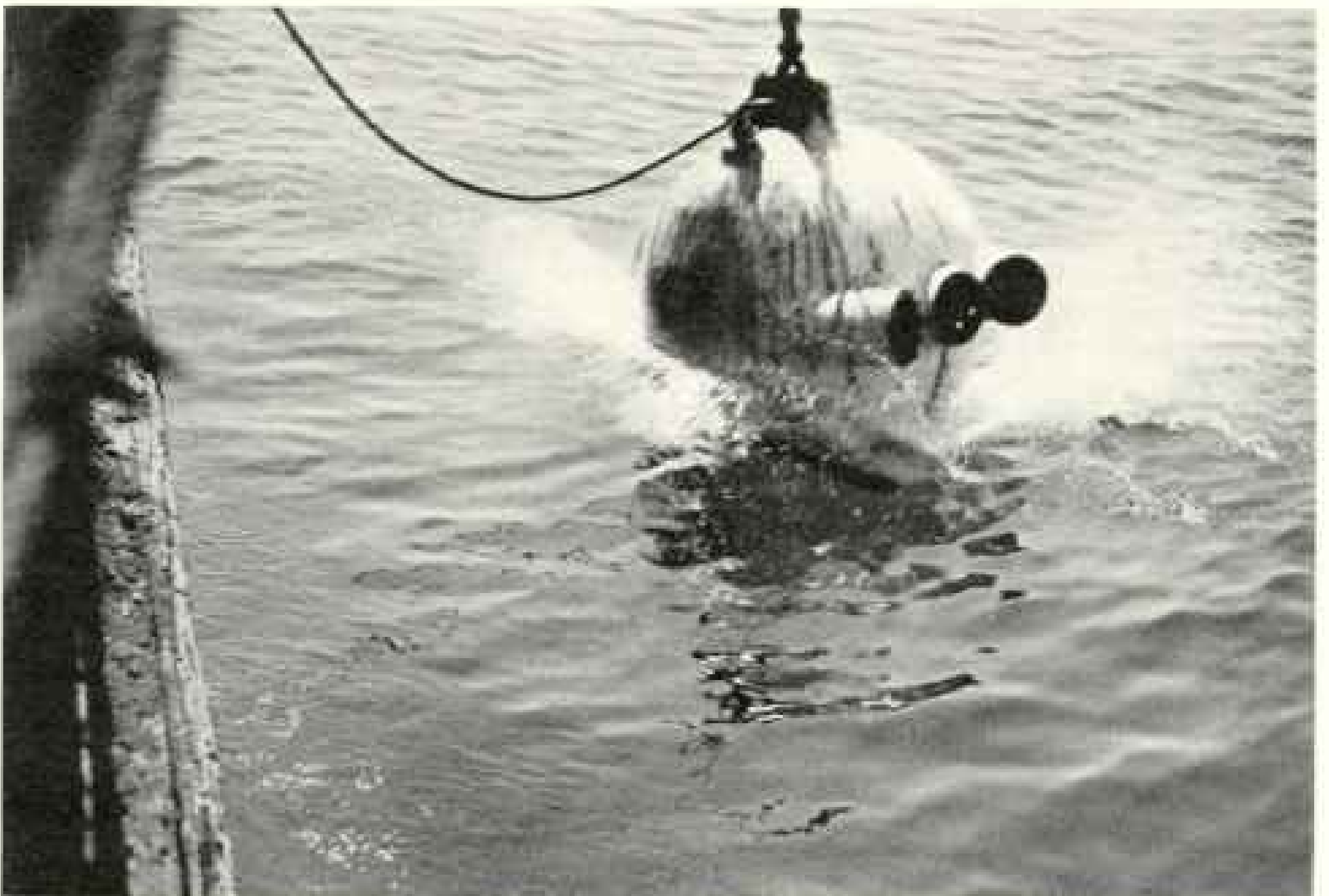
The oxygen valve was accurately recording two litres, and we found that the search-light was working perfectly. I remembered what I had read of Houdini's method of remaining in a closed coffin for a long time, and we both began conscientiously to regulate our breathing, and conversed in low tones. We soon forgot all about this.

Like the lightest of airplane take-offs we rose from the deck and swung out over



THE BATHYSPHERE DANGLING IN MID-AIR

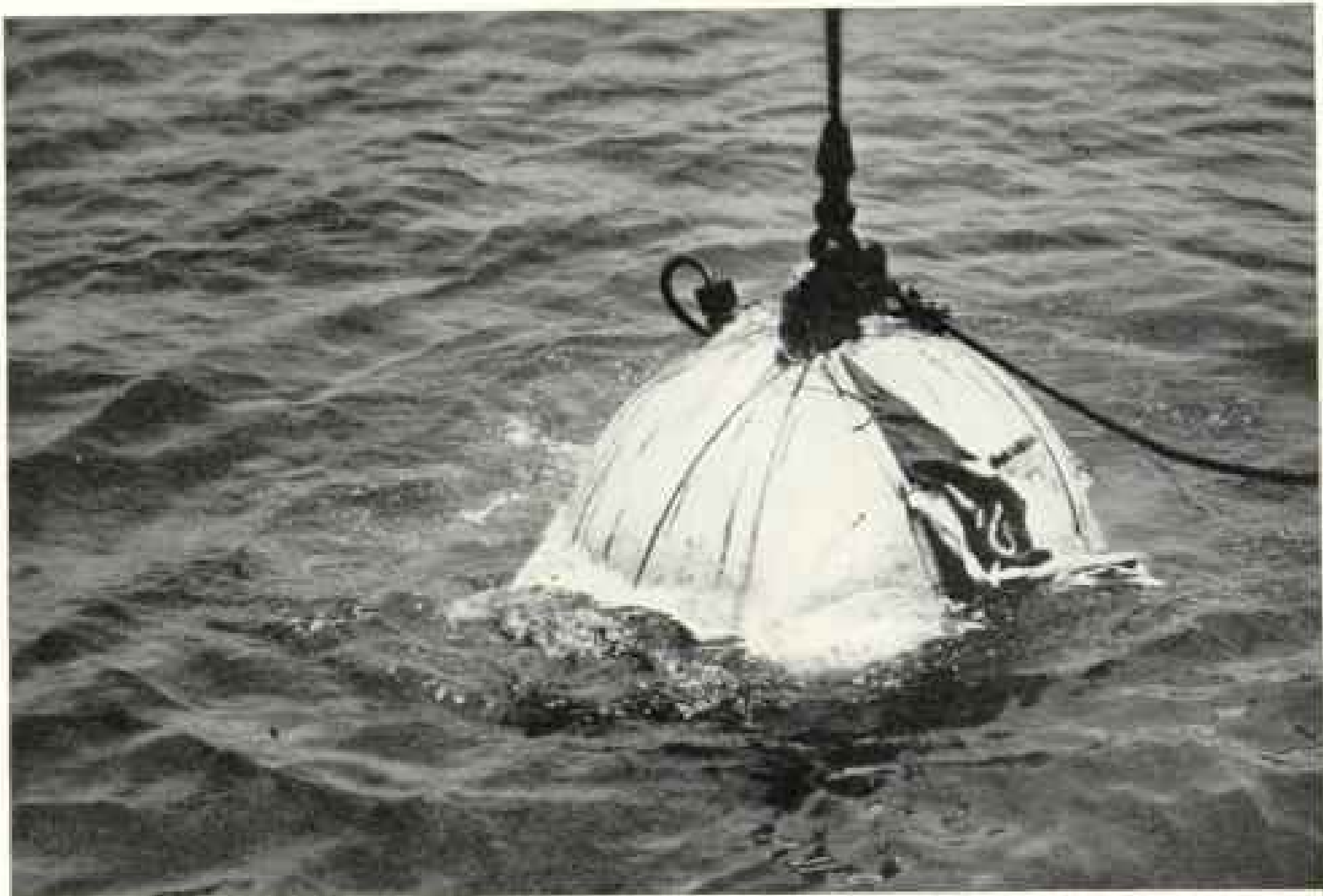
This was the most critical moment in the whole adventure, a quick swing out and down being necessary to prevent a dangerous crash against the bulwarks.



Photographs from William Beebe

THE BATHYSPHERE IN THE WATER

The impact sent up a cloud of spray, but the shock was hardly perceptible to the divers inside the sphere (see text, opposite page).



Photograph from William Beebe

#### THE BATHYSPHERE HALF UNDER

The entrance of the rubber telephone hose was the point of greatest danger, but it held firm even against the strongest pressure.

the side. Here we dangled for a short time and then slowly began to sink.

As we submerged I realized for the first time the tremendous weight and terrific strength of the sphere: we were lowered very gently, yet we struck the surface with a splash which would have crushed a row-boat like an eggshell. Within, we hardly noticed the impact until a froth of foam and bubbles surged up over the glass and the chamber was dimmed to a pleasant green.

#### THE HULL OF THE BARGE THE LAST VISIBLE LINK OF THE UPPER WORLD

While the two cables were being clamped together to prevent twisting we revolved once and the hull of the barge came into view a few yards away. It was covered with a magnificent coral reef growth,—waving banners of seaweed, long, tubular sponges, jet-black blobs of ascidians and tissue-thin pearl shells. Word came down, I sent up an answering order and the hull passed slowly upward and out of sight.

This was the last visible link of the upper world; from now on we had to depend on

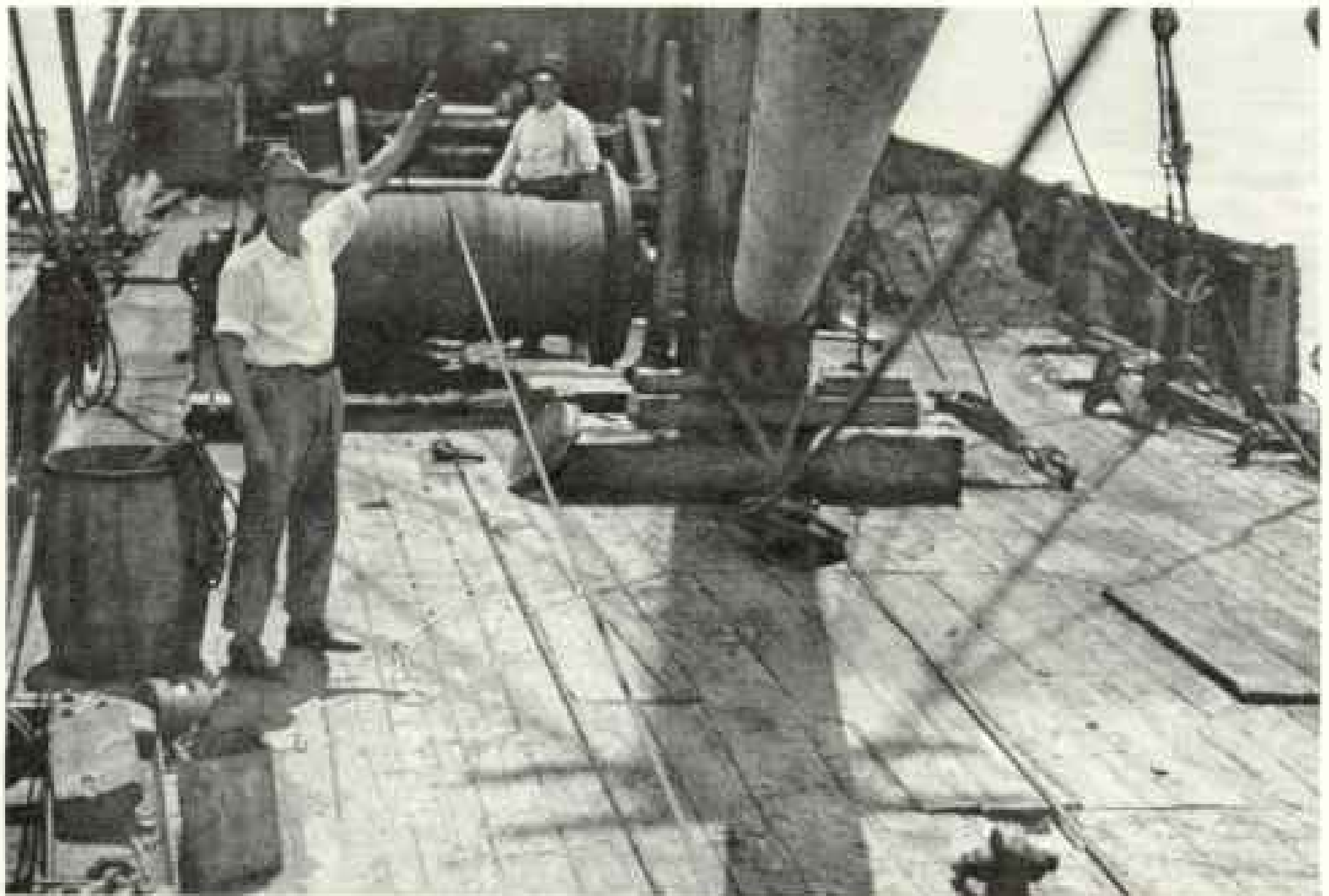
distant spoken words for knowledge of our depth, or speed, the weather or the sunlight, or anything to do with the world of air on the surface of Mother Earth.

A few seconds after the hull vanished word came down the hose that we were at fifty feet, then one hundred, and the only change was a slight twilighting and chilling of the bluish-green. As we sank slowly I knew that we must be passing the depth at which Commander Ellsberg labored so gallantly to free the men in the Submarine *S-57*.

"Two hundred feet" was called down to us and we stopped with a gentle jerk while another clamp was attached, and soon we were sinking again. We were now very far from any touch of earth; ten miles south of the shore of Bermuda and one and a half miles from the sea bottom.

At three hundred feet Barton gave a sudden exclamation and I turned the flash on the door and saw a slow trickle of water beneath it. About a pint had gathered in the bottom. I wiped away the meandering stream and still it came. I knew that the door would fit more tightly the deeper we





Photograph from William Beebe

#### THE SEVEN-TON ARCTURUS WINCH IN ACTION

The attention of John Tee-Van and the deck crew could never relax for a moment during the entire dive.

got, but there remained a shadow of worry as to how much the relaxed pressure of the ascent would allow the door to expand.

In two minutes more we were at four hundred feet; then five hundred and six hundred came and passed. Here the electric searchlight began to be effective, the yellow shaft cutting through the dark blue with great intensity.

#### TO A DEPTH NO LIVING HUMAN BEINGS HAD EVER BEEN BEFORE

Ever since the beginnings of human history, when first the Phœnicians dared to sail the open sea, thousands upon thousands of human beings had reached the depth at which we were now suspended, and had passed on to lower levels. But all of these were dead, drowned victims of war, tempest, or other Acts of God. We were the first living men to look out at the strange illumination. And it was stranger than any imagination could have conceived.

It was of an indefinable deep blue quite unlike anything I have ever seen in the upper world, and it excited our optic nerves in a most confusing manner. We

kept thinking and calling it brilliant, and again and again I picked up a book to read the type, only to find that I could not tell the difference between the blank page and a colored plate.

All our remarks were recorded by Miss Hollister and when I read them later, the repetition of our insistence upon the brilliance which yet was not brilliance was almost absurd.

As we began our further descent I found that Barton and I had the same thought; we were waiting breathlessly for the sudden elimination of all light. It seemed from moment to moment that it would soon become absolutely dark, and the fact of the terrible slow change from dark blue to blacker blue was the most impressive thing about the descent. Then the thought came that this was not night because there had never been any day.

As the realization of the depth became more acute we talked very little. Barton watched the dripping door, adjusted the oxygen tank and now and then asked "What depth now?" "Yes, we're all right." "No, the leak's not increasing." "It's as



Photograph from William Beebe

#### TELEPHONING TO DAVY JONES'S LOCKER

Miss Gloria Hollister sent and received hundreds of messages during the various dives. When communication was interrupted she had no means of knowing whether it was from static or a fatal accident.

brilliant as ever" and we both knew it was *not* brilliant.

"Eight hundred feet" came down the wire and I called a halt. Half a dozen times in my life I have had hunches so vivid that I could not ignore them, and this was one of the times. Eight hundred feet spelled bottom and I could not escape it.

About an hour after we started we were on deck again, waiting for the tedious and deafening pounding and unscrewing of the many giant nuts which held us safely in. As the center bolt became loose we could hear the hissing escape of the compressed air which we were breathing. Yet we had had no ill effects and no sense of oppression.

#### THE BODY COMPLETELY SUBORDINATED TO MENTAL INTEREST

At last the huge door was swung off and the sunlight poured in. I started to uncoil in order to climb out and suddenly realized how completely the body can be subordinated to mental interest and emotion. I was almost paralyzed from the waist down,

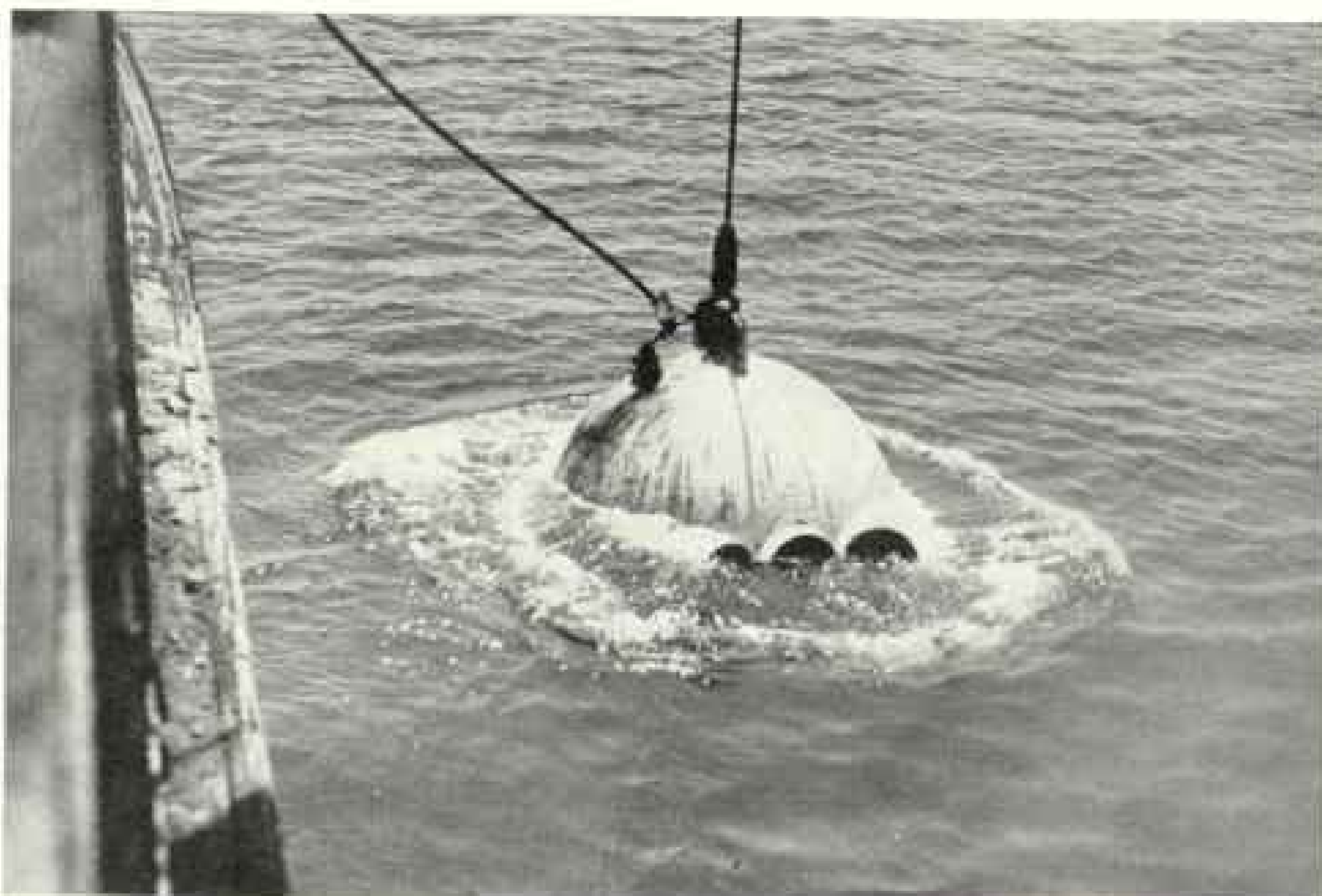
with legs and feet sound asleep, and I found the cushion reposing in the chemical rack overhead.

At the beginning of the descent we had mislaid a monkey wrench and I now discovered that I had been sitting upon it. So deeply was it tattooed into my person that the marks were distinct quite four days later. I found the sunshine more yellow than I had ever thought it, but nothing so wonderful as the blue of the ocean's depths.

#### THE DESCENT TO A DEPTH OF A QUARTER OF A MILE

The fifth day after this, June eleventh, was made to order for work on the open sea, and we made a descent to a depth of over a quarter of a mile, fourteen hundred and twenty-six feet.

We had devised a number of improvements,—the inside of the sphere was painted black to do away with all reflection; there were shelves for books, writing materials and sample colors, and the cushion and monkey wrenches were in



Photograph from William Beebe

#### THE BATHYSPHERE REAPPEARS ON THE SURFACE

The steel was icy cold after the quarter-mile plunge, and the yellow glare of the sunlight was blinding to our eyes.

their rightful places. Outside, near the windows, were baited, luminous hooks in clusters and bags of very ancient squids for additional lures.

At ten o'clock we were swung overside, and a few seconds later were beneath the surface. As we hung motionless I looked up at the watery ceiling. It appeared perfectly solid, and like a slowly waving, pale green canopy, quilted everywhere with deep puckers—the sharp apexes of the wavelets above showing as smooth, rounded indentations below.

#### LIGHT SIFTS DOWN AS THROUGH CATHEDRAL WINDOWS

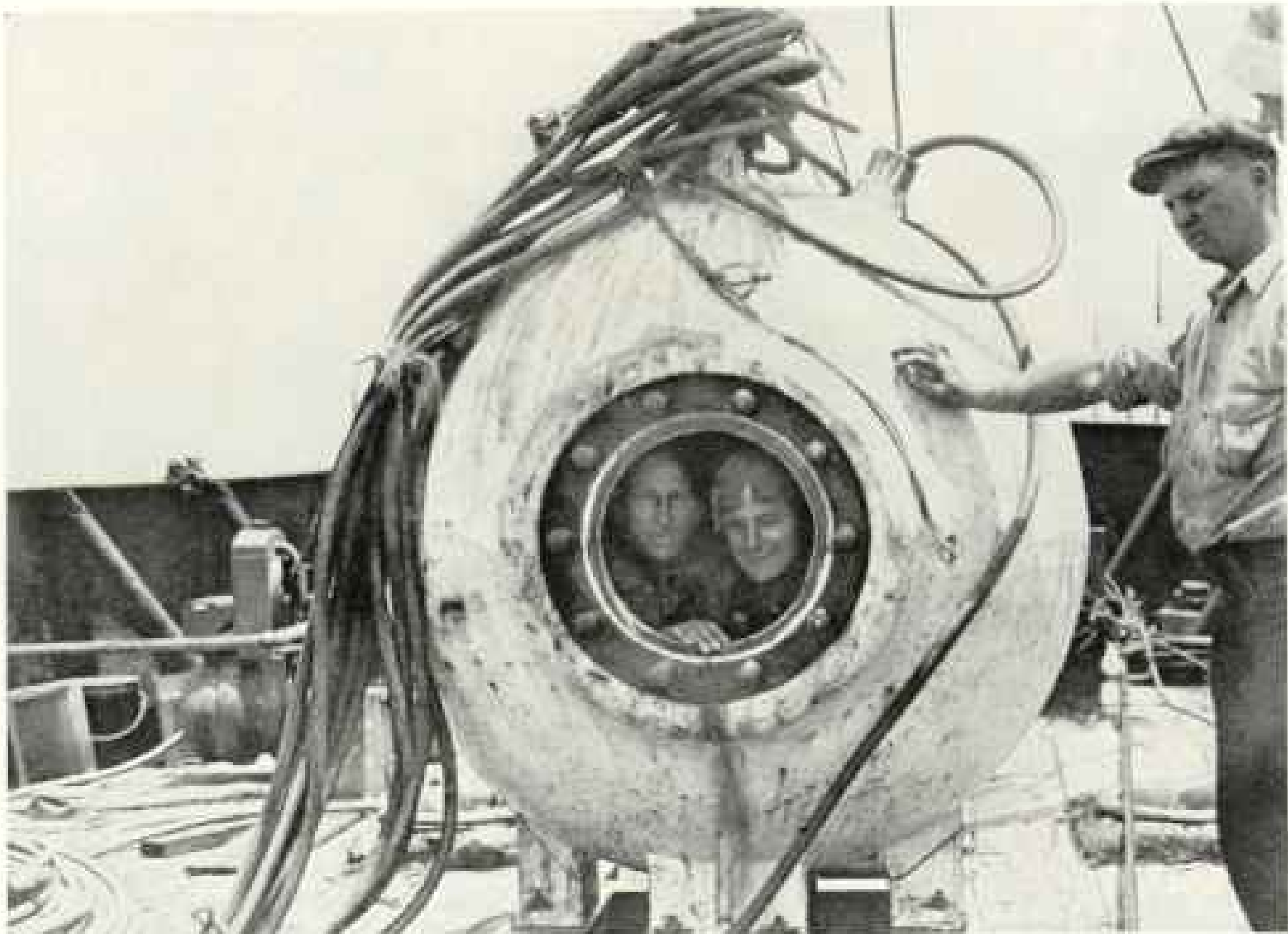
The sunlight sifted down in long oblique rays as if through some wonderfully beautiful cathedral window. The atmospheric dust of floating motes had its counterpart here in midwater, only the general feeling was cool green, not yellow. The water was so clear that I could see the distant keel of the *Gladisfen* slowly rolling as it drifted. Here and there, like bunches of mistletoe hanging from chandeliers, were clusters of sargassum weed, with only their tips break-

ing through into the air. Jellyfish, large and small, drifted past and from now on I hardly ever let my eyes leave the circle of vision through my window.

#### UNEARTHLY COLOR BRINGS EXCITEMENT TO EYE AND MIND

We had asked to be lowered slowly, and when less than fifty feet below the surface I happened to glance at a large, deep-sea shrimp which I had brought along in its bottle for experiment. It was no longer scarlet, but a deep black with an orange tone. I opened my volume of "Depths of the Ocean" and the plate of bright red shrimps was as black as night.

On this and on other dives I carefully studied the changing colors, both by direct observation and by means of the spectroscope. Just beneath the surface the red diminished to one-half its normal width. At twenty feet there was only a thread of red and at fifty the orange was dominant. This in turn vanished at one hundred and fifty feet. Three hundred feet found the whole spectrum dimmed, the yellow almost gone and the blue appreciably narrowed.



Photograph from William Beebe

#### AFTER TWO HOURS WE AGAIN BREATHE THE OPEN AIR

When the four-hundred-pound door was unscrewed, there was very little outward pressure from our artificial atmosphere.

At three hundred and fifty I should give as a rough summary of the spectrum fifty per cent blue violet, twenty-five per cent green, and an equal amount of colorless pale light. At four hundred and fifty feet no blue remained, only violet, and green too faint for naming.

At eight hundred feet there was nothing visible but a narrow line of pale grayish-white, due of course to the small amount of light reaching my eye. Yet when I looked outside I saw only the deepest, blackest-blue imaginable. On every dive this unearthly color brought excitement to our eyes and minds.

#### MANY SURFACE FISH SEEN AS FAR DOWN AS A HUNDRED FEET

As far down as one hundred feet I saw many of the surface fish—most of them ultra-marine above and white below, that wonderfully protective combination amid the deep blue and the white foam of the surface ocean water. Fifteen-inch bonitos darted past in trios and once a small,

stodgy triggerfish strayed from his water-logged sargassum shelter to peer in at me. At twenty fathoms I was surprised to see the glassy, transparent, twelve-inch body of a larval eel undulating slowly along on its way.

#### THE FIRST GLIMPSE OF A LIVE LANTERN-FISH

There was a similarity between two- and three-hundred-foot levels in that most of the fish seen were Carangids, such as pilot-fish (*Naucrates*), and *Psenes* (this has no human or Christian name, but its technical one is so interesting to pronounce that this can be excused!).

Long strings of salpa drifted past, lovely as the finest lace, and schools of jellyfish throbbed on their directionless but energetic road through life. Small vibrating motes passed in clouds, wholly mysterious until I could focus exactly and knew them for Pteropods or flying snails (*Cavolinia*); delicate, shield-shaped shells driven along by a pair of flapping, fleshy wings.



Photograph from William Beebe

#### EMERGING FROM THE CRAMPED QUARTERS OF THE BATHYSPIHERE

There was no dignity in entering or leaving the bathysphere. One had painfully to crawl over the rough bolts.

At four hundred feet there came into view the first real deep-sea fish—*Cyclothoex*, lanternfish, and bronze eels. The former meant nothing at first. I took them for dark-colored worms or shrimps. Only when I saw them at greater depths in the searchlight did I recognize them. Of all the many thousands of these fish which I have netted, I never saw one alive until now.

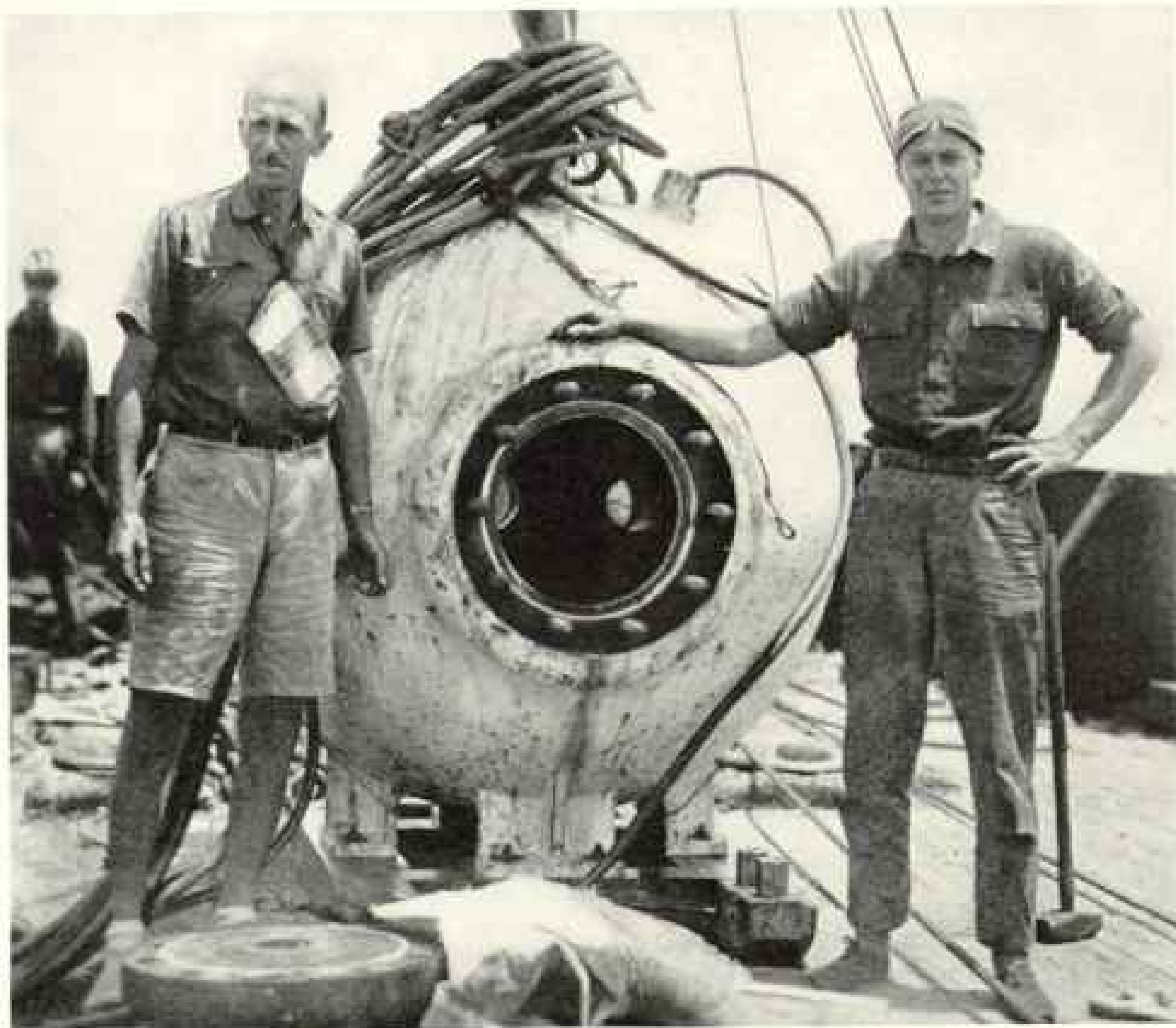
The lanternfish (*Myctophids*) came close to the glass and were easy to call by name. Only instead of having a half dozen scales left, like those caught in the nets, these fish were ablaze with their full armor of iridescence. Twice I caught the flash of their light-organs but only for an instant. An absurdly small and rotund puffer appeared quite out of place at this depth, but with much more reason he probably thought the same of me.

Big silvery bronze eels (Color Plate V) came nosing about the bait although what

they expected to accomplish with their inconceivably slender and delicate jaws is hard to imagine. Their transparent larva also appeared, swimming by itself, a waving sheet of watery tissue. Pale shrimps drifted by, their transparency almost removing them from vision. Now and then there came a flash as from an opal, probably the strange, flat crustacean well named *Sapphirina*.

#### PALE WHITE GHOSTS OF SURFACE PILOTFISH APPEAR

Pilotfish swam into view again and at this level, and somewhat higher up as well, I realized for the first time in a living organism the power of the diminishing spectrum. These were ghosts of pilotfish—like those of the surface levels in shape, size, fins, eyes and pattern, but pale white—all color gone except for the apparently black, vertical bands. If these individuals lived at this level, of course they had never been



Photograph from William Beebe

#### AFTER A DIVE OF A QUARTER-MILE BENEATH THE OCEAN

We had looked upon a world wholly new to human eyes, as strange as a Martian landscape. (The author to the left, Mr. Barton to the right.)

any other color nor their ancestors before them.

At five hundred feet I had fleeting glimpses of black fish nearly two feet long, and here for the first time I saw strange, ghostly dark forms hovering in the distance,—forms which never came nearer, but reappeared at deeper, darker depths.

Flying snails passed in companies of fifty or more, and small squids balanced in mid-water. I hoped to see some of the larger ones, those with orange, bull's-eye lights at the tips of their arms (Color Plate VII), or the ones which glow with an indescribable glory of blue, yellow and red light-organs (Color Plate II). None came close enough, however, or it may be I must wait until I can descend a mile and still live, before I can come to their haunts.

At six hundred feet a pale blue fish ap-

peared, yet the blue of the pilotfish does not exist at this depth. Several seriola-like chaps nosed toward me. They must have drifted down from the surface waters into these great pressures without injury. Dark jellyfish twice came to my eyes, and the silvery eels again. The pteropods looked dull gold and I saw my first shrimps with minute but very distinct portholes of lights.

#### A GREAT CLOUD SUGGESTS SOME MYSTERY BEYOND

Again a great cloud of a body moved in the distance—this time pale, much lighter than the water. How I longed for a single near view, or telescopic eyes which could pierce the murk. I felt as if some astonishing discovery lay just beyond the power of my eyes.

At another hundred feet a dozen fish passed the sphere swimming almost straight upright, yet they were not unduly elongate like the trumpetfish which occasionally assume this position in shallow waters near shore. I had a flash only of the biggest fish yet—dark, with long, tapering tail and quite a yard in length. Also a large transparent jellyfish bumped against the glass, its stomach filled with a mass of luminous food.

Here and at eight hundred feet a human being was permitted for the first time the sight of living silver hatchetfish (*Argyropelecus*) (Color Plate III). I made Barton look quickly out so he could verify the marvelous sight. At eight hundred feet where the water was blackish-blue, I saw groups of lights moving along slowly, or jerking unsteadily past, and the searing beams of the searchlight revealed these as silver hatchetfish, gleaming with tinsel, but with every light quenched, at least to my vision, until I switched off the electricity or until the fish moved out of its path, when their pyrotechnics again rushed into play.

#### OBSERVATIONS DICTATED OVER TELEPHONE FROM THE DEEP

Here is an excerpt direct from the transcription which Miss Hollister took down of my notes telephoned up from eight hundred feet on Dive Number Eleven.

June 19th, 1930. 1:24 P. M. Depth 800 feet: 2 black fish 8 inches long going by, rat-tailed, probably *Idiacanthus*. 2 long, silver, eel-like fish, probably *Serrivomer*. Fish and invertebrates go up and down the shaft of light like insects. 3 Myctophids with headlights; *Diaphus*. (Work with a mirror next time.) 2 more different Myctophids. The same 3 Myctophids with headlights. 20 Pteropods and 6 or 8 *Argyropelecus* together. 3 more Pteropods. Little twinkling lights in the distance all the time, pale greenish in color. Eels, 1 dark and 1 light. Big *Argyropelecus* coming; looks like a worm head on. *Eustomias*-like fish 5 inches long. 30 *Cyclothones*, grayish white; can see every movement. An amazing number of fish seen in 17 minutes.

Returning to the quarter-mile dive, I made the following notes from the eleven-hundred-foot level down. At eleven hundred feet Barton and I surveyed our sphere carefully. There was no evidence of the hose being forced inside as had happened

on two former occasions. The door was dry as a bone, the oxygen tanks were working well and by occasional use of our palm-leaf fans, the air was kept sweet. The walls of the bathysphere were dripping with moisture, probably sweating from the heat of our bodies condensing on the cold steel. The chemicals were working well, and we had a grand shifting of legs and feet, and settled down for what was ahead of us.

#### A STRANGE NEW FISH EMITS A BLINDING GREEN LIGHT

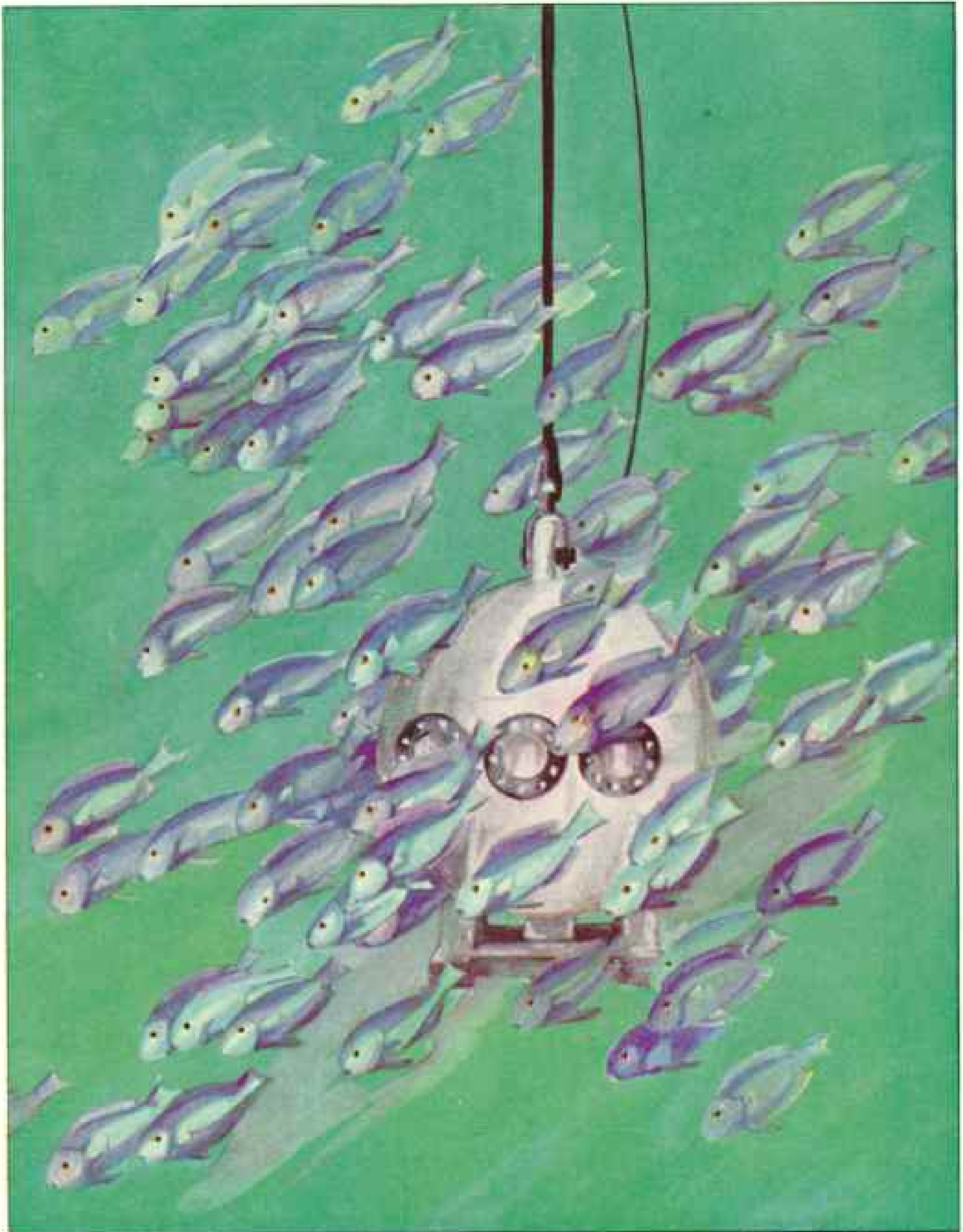
In the darkness of these levels I had not been able to see the actual forms of the hatchetfish, yet a glance out of the window now showed distinctly several rat-tailed Macrurid-like fish twisting around the bend of the hose.

They were distinct and were wholly new to me. Their profiles were of no Macrurid I had ever seen. As I watched, from the sides of at least two there flashed six or more bright greenish lights, and the blinding effect on my eyes was such that the fish vanished as if dissolved into water, and the searchlight showed not a trace. I have no idea what they were.

At the next hundred-foot stop, two hundred fathoms down, there dashed into the searchlight, without any previous hint of illumination, what I identified as *Idiacanthus*, a long, slender, eel-like form, which twisted and turned about in the glare, excited by some strange emotion. Twice it touched the edge of the path of light and turned back as if imprisoned in a hollow cylinder of illumination. I watched it until at last it left, and I could see no hint of its own light, although it possesses at least three hundred light-organs. The great advantage of the electric light was that even transparent fins—as in the present case—reflected a sheen and were momentarily visible.

#### A FIFTY-FOOT ZONE OF TERRIBLE BLUE EMPTINESS

At twelve hundred and fifty feet several more of the silver hatchets passed, going upward, and prawns became abundant. Between this depth and thirteen hundred feet not a light or an organism was seen; it was fifty feet of terrible emptiness, with the blue of some wholly new color term—a term quite absent from human language.



Painting by E. Bosterman

GIANT PARROTFISH MIGRATE INTO THE DEPTHS

A mile off Bermuda and forty feet down, a school of thousands of Giant Blue Parrotfish (*Scarus caeruleus*) passed the author's window in the Bathysphere, headed for the outer, cooler depths of the sea.

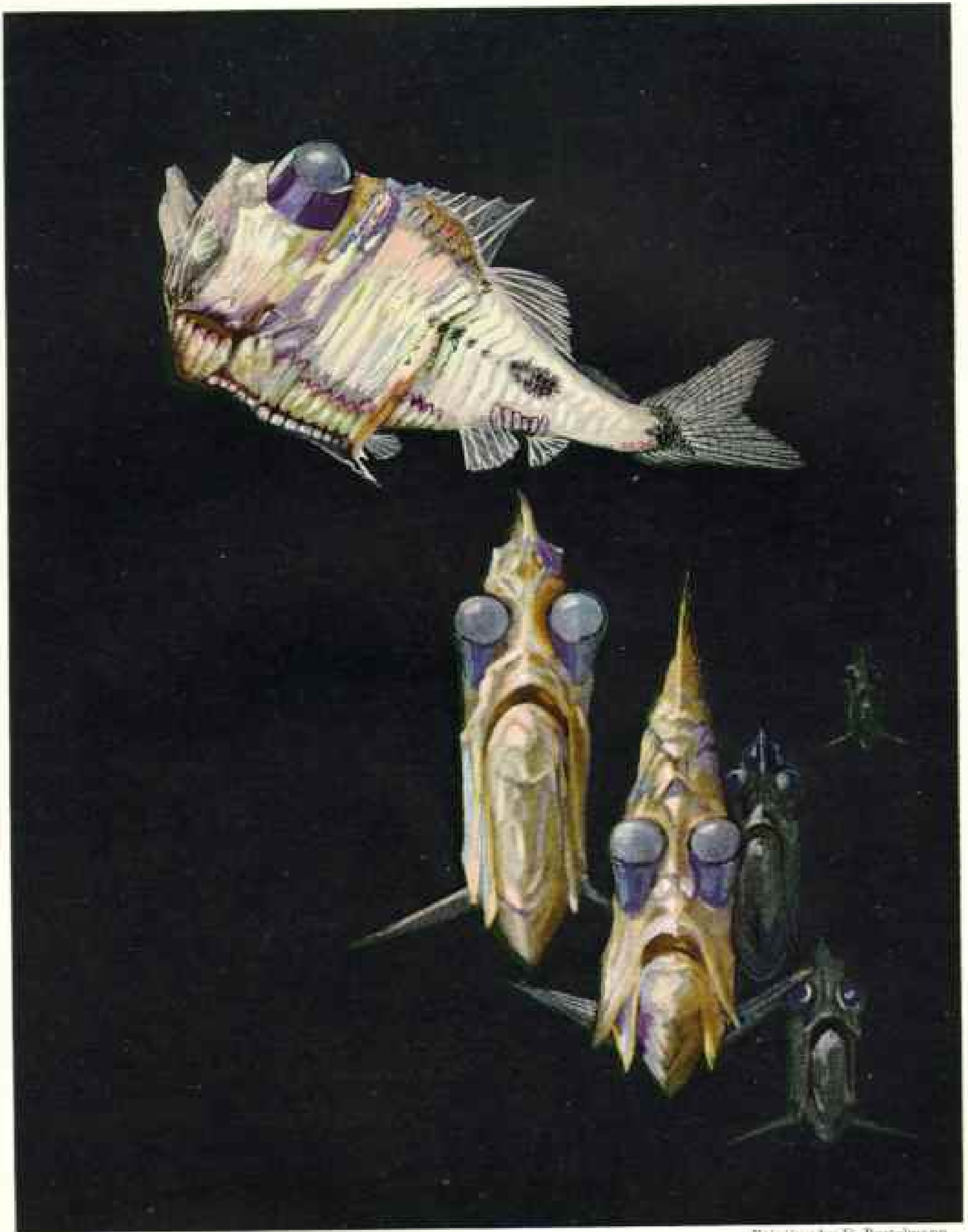




Painting by E. Bostelmann.

SWIVEL-TOOTHED DRAGONFISH PURSUING LUMINESCENT SQUIDS

The squids were taken from the stomach of this deep-sea gourmand (*Omosudis lowi*), so the action in this painting actually occurred a mile down beneath the surface.



Painting by E. Boetzelmann

SILVER HATCHETFISH DRIFTING THROUGH THE ABYSSAL DARKNESS

This fish (*Argyropselcus hemigymnus*) is gleaming silver, brilliantly illuminated by small groups of many-colored lights. The eyes are elongated and telescopic, for use in the darkness.



Painting by E. Boudmann

GIANT-MOUTHED ORANGE-SKIN

A rare deep-sea fish (*Rondelleia bicolor*). It has an enormous mouth but tiny teeth and feeds on very small crustaceans. There are no light organs yet it seems to thrive in the dark.



Painting by E. Bostelmann.

AVOCET-BILLED EEL WITH ITS TRANSPARENT YOUNG

The slenderness of the jaws of this eel (*Nemichthys scolopacea*) from a mile depth seems beyond all usefulness. Its young are transparent as water, except for the iridescent eyes.



Painting by E. Bostelmann

PYGMY ROUND-MOUTHS PURSUING A SCHOOL OF COPEPODS

The Pale Round-mouths (*Cyclothone signata*) are the most abundant of all deep-sea fish and several hundred are sometimes taken in one haul. They are only two inches in length. Their tissues are soft and flabby and they are always dead when they reach the surface.



Painting by E. Bostelmann

ORANGE-LIGHTED FINGERS-SQUID CATCHING LANTERNFISH

This unnamed squid from a full mile depth has a pair of enormous eyes with white luminous spots on the iris, and two orange, bull's-eye lights at the tips of the longest arms. Its life equipment is unsurpassed as regards eyesight, terrific speed, deadly suckers and muscular arms.



Painting by E. Bostelmann.

GIANT PARROTFISH BEING CLEANED BY A SCHOOL OF WRASSE

After browsing on living coral the Great Green-toothed Parrotfish (*Pseudocaranx guineensis*) upends in mid-water and allows the numerous small Wrasse to clean the teeth and scales of all adhering debris.

It was probably sheer imagination but the characteristic most vivid was its transparency. As I looked out I never thought of feet or yards of visibility, but of the hundreds of miles of this color stretching over so much of the world.

Life again became evident around thirteen hundred feet, and mostly luminous. After watching a hundred or more firefly-like flashes I turned on the searchlight and saw nothing whatever. These sparks, brilliant though they were, were kindled into conflagration and quenched in the same instant upon invisible bodies. Whatever made them were too small to reach the eyes, as was almost the host of copepods and other tiny crustaceans through which we passed now and then.

At one time I kept the electric light going for a full minute while we were descending, and I distinctly observed two zones of abundance and a wide interval of scanty, motelike life. When very close to the glass I could clearly make out the jerking movements of copepods, but they were too small to show anything more. The milky sagitta or arrow worms were more easily detected, the eye catching their swift dart and then focusing on their quiet forms.

While still near thirteen hundred feet a group of eight large shrimp passed, showing an indeterminate coloration. We never took large shrimps at these comparatively shallow levels in the trawling nets.

Barton had just read the thermometer as 72° when I dragged him over to the window to see two more *Argyroleucus*. Before he went back to his instruments three squids shot into the light, out and in again, changing from black to barred to white as they moved. They showed no luminescence.

#### AT THE LOWEST DEPTH—A SOLID, BLUE-BLACK WORLD

At 10:44 we were sitting in absolute silence, our faces reflecting a ghastly bluish sheen. I became conscious of the pulse-throb in my temples and remember that I kept time to it with my fingers on the cold, damp steel of the window ledge. I shifted the handkerchief on my face and carefully wiped the glass, and at this moment we felt the sphere check in its course—we felt ourselves press slightly more heavily against the floor and the telephone said "Fourteen hundred feet."

I had the sensation of a few more metres' descent and then we swung quietly at our lowest floor, over a quarter of a mile below the surface.

I pressed my face against the glass and looked upward and in the slight segment which I could manage I saw a faint paling of the blue. I peered down and again I felt the old longing to go farther, although it looked like the black pit-mouth of hell itself—yet still showed blue.

I thought I saw a new fish flapping close to the sphere, but it proved to be the waving edge of the Explorers' Club flag—black as jet at this depth. My window was clear as crystal, in fact clearer, for fused quartz is one of the most transparent of all substances and transmits all wavelengths of sunlight. The outside world I now saw through it was, however, a solid, blue-black world, one which seemed born of a single vibration—blue, blue, forever and forever blue.

#### ALL RISKS AND COSTS ARE REPAID

I never doubted the success of the adventure as a whole, but I had had much less faith in the possibility of seeing many living creatures from the windows of the bathysphere. The constant swaying movement due to the rolling of the barge high overhead, the great, glaring white sphere itself looming up through the blue murk, the apparent scarcity of organisms at best in the depths of the ocean as revealed by our net hauls, and finally the small size of the aperture, hardly as large as one's face—all these seemed handicaps too severe to be overcome.

This secret skepticism made the actual results all the more amazing. As fish after fish swam into my restricted line of vision,—fish, which heretofore, I had seen only dead and in my nets, as I saw their colors, and their absence of colors, their activities and modes of swimming and clear evidence of their sociability or solitary habits, I felt that all the trouble and cost and risk were repaid manifold.

After these dives were past, when I came again to examine the deep-sea treasures in my net hauls, I would feel as an astronomer might who looks through his telescope after having rocketed to Mars and back, or like a paleontologist who could suddenly annihilate time and see his fossils alive.



In the course of my various dives I found that without the searchlight for six hundred feet and with its golden path below that depth I could distinctly see and recognize,—and even accurately identify—fish down to the very species.

The necessary, new optical adjustments were not the least of the unexpected phases of this adventure. For two years I had examined a host of dead *Cyclothones* (they have no common name) taken in my nets, but it required three deep dives, and a dozen observations before I recognized these fish alive, showing as rounded objects, opening and closing, which I saw again and again in the path of the searchlight,—these objects being the mouths of *Cyclothones* seen from the front (Color Plate VI).

A wholly unexpected discovery was the presence of deep-sea fish at higher levels than I had ever taken them in the trawls. I am convinced that this is due to the fact that a greater intensity of light in the upper strata enables the fish to see and avoid the slowly oncoming nets, whereas farther down in the darkness, they swim blindly across the path of the nets, or actually into the entrances.

#### MYSTERIOUS CREATURES OF LARGE SIZE HOVERED IN DISTANCE

The most spectacular observation was of creatures of large size which, again and again, I saw hovering in the distance. Whether fish, squid or other organisms I cannot say with certainty,—fish I am inclined to believe—but in any case, creatures far larger than we have ever taken in any net, and of whose names, appearance and habits we are as utterly ignorant as we are of the inhabitants of Mars.

On the twentieth of June, when our time and money for deep-sea diving were exhausted, we had made fifteen descents in the bathysphere, one to fourteen hundred and twenty-six feet and three to eight hundred feet.

The last four dives, although only to depths of eighty to three hundred and fifty feet were of intense interest, and as a matter of fact were probably much more dangerous than the deeper ones.

These shallow descents might be described as contour dives. I brought the *Gladisfen* and the *Ready* as close to shore as I dared on a day when there was a slight

offshore wind, and there began diving where I could actually see the bottom from the deck.

We had so perfected the mechanics of the apparatus that an order sent up the telephone was obeyed instantly. I was lowered to within a few feet of the bottom and then, as we drifted slowly seaward, I had the bathysphere raised and lowered, first to avoid an approaching jagged bit of coral reef, then to drop down into a submarine valley until the bottom became visible.

#### AN AMAZING EXCHANGE OF COURTESY BETWEEN PARROTFISH AND WRASSE

I could distinctly see and recognize the various kinds of coral and the species of fish. I even saw an amazing exchange of courtesy, one which I had observed many times when diving near shore (Color Plate VIII). The giant and gaudy parrotfish browse on hard coral as a horse tears off mouthfuls of grass. After an interval of feeding, when the teeth and jaws and scales of the head are covered with debris, the fish upends in mid-water and holds itself motionless while a school of passing wrasse, all tiny in comparison with the big fish, rush from all sides and begin a systematic cleaning of the large fish's head. As in most relationships between different species of animals, this is founded on mutual benefit, the parrotfish getting a free cleaning, and the wrasse finding a supply of particles of food ready at hand.

On the very last dive, from thirty to fifty feet down and a mile offshore, there occurred an amazing migration of huge parrotfish. Hundreds and hundreds suddenly appeared and streamed obliquely past and downward, unending lines of cerulean blue (Color Plate I). It seemed as if all the parrotfish of Bermuda had suddenly decided to leave for the depths of the open sea. Such things as these could never be seen except from a sphere such as ours.

Well out from shore on one of these contour dives I had the thrill of suddenly seeing what looked like a thin, endless sea-serpent. We were drifting slowly along, now lifting over a toothed ridge or settling down into a valley of caverns and gorges when, without warning I saw a long, undulating black line lying along the bottom, clearly visible when over a bed of sand, or

vanishing behind a mass of giant sea-plumes. A second glance revealed it as a deep-sea cable resting quietly on its bed and carrying innumerable messages of hope and fear, joy and death. Kipling's words took on new significance and I shall never again send a cable without this memory.

These shore dives opened up an entirely new field of possibilities, the opportunity of tracing the change from the shallow-water corals and fish to those of the mid-water, with ultimately the disappearance of the former and the change of the fish into the deep-sea forms. We know absolutely nothing of this at present, as the transition zone is so rough and untrawlable that there is no method known of learning anything about it.

#### PHYSICAL SURROUNDINGS AT THE LOWEST DEPTH

When, at any time in our earthly life, we come to a moment or a place of tremendous interest it often happens that we realize the full significance only after it is all over. In the present instance the opposite was true and this very fact makes any vivid record of feelings and emotions a very difficult thing.

At the very deepest point we reached I deliberately took stock of the interior of the bathysphere; I was curled up in a ball on the icy-cold, damp steel, Barton's low voice relayed my observations and assurances of our safety, a fan swished back



Photograph by Ella Barnett

#### FOSSIL OF PALM IN AEOLIAN LIMESTONE

The natural wonders of Bermuda are not confined to the waters surrounding the archipelago. The islands are formed of aeolian limestones consisting principally of blown shell dust, in which fossils of various types are embedded. Interesting light has recently been thrown on the geological formation of the group through excavations in connection with a new roadway.

and forth through the air and the ticking of my wrist-watch was like a strange memory sound of another world.

Soon after this there came a moment which stands out clearly, unpunctuated by any word of ours, with no fish or other creatures visible outside. I sat crouched with mouth and nose wrapped in a handkerchief to prevent condensation, and my forehead pressed close to the cold glass,—that transparent bit of Mother Earth which so sturdily held back nine tons of water from my face.



Photograph by J. H. Bartholomew, Jr.

#### BERMUDA'S GLASS-BOTTOMED BOATS ARE JUSTLY FAMED

No other islands so far north of the Equator are surrounded as Bermuda is by living coral reefs. Here the reefs are from three to eight miles out and they form a chain around the islands. Steamers take tourists to these so-called "marine gardens," and there they are rowed about, peering through the glass at myriad colored fish and sea flora.

There came to me at that instant a tremendous wave of emotion, a real appreciation of what was momentarily almost superhuman, cosmic, of the whole situation: our barge slowly rolling high overhead in the blazing sunlight, like the merest chip in the midst of the ocean, the long cobweb of cable leading down through the spectrum to our lonely sphere, where, sealed tight, two conscious human beings sat and peered into the abysmal darkness as we dangled in mid-water, isolated as a lost planet in outermost space.

Here, under a pressure which if loos-

ened, in a fraction of a second would make amorphous tissue of our bodies, breathing our own homemade atmosphere, sending a few comforting words chasing up and down a string of hose.—here I was privileged to sit and try to crystallize what I observed through inadequate eyes and interpreted with a mind wholly unequal to the task.

To the ever-recurring question "How did it feel?" etc., I can only quote the words of Herbert Spencer, I felt like "an infinitesimal atom floating in illimitable space."

## MODERN ETHIOPIA

### Haile Selassie the First, Formerly Ras Tafari, Succeeds to the World's Oldest Continuously Sovereign Throne

BY ADDISON E. SOUTHARD

*United States Minister to Ethiopia*

**W**E ARE ready to start officially for the coronation of His Imperial Majesty Haile Selassie the First, King of Kings of Ethiopia, Conquering Lion of the Tribe of Judah. A typically sharp, blue Ethiopian morning has just dawned. The mountain air carries the faintly pungent odor of the blue-gum-wood breakfast fires.

Although I have not been out all night, I am in full evening dress. Only an hour ago I left my bed after a sane and sound sleep, undisturbed even by the intermittent rejoicing of the hyena that lives in the Legation grounds.

An American diplomat is not conceded the splendor of gold braid and feathers, even on occasions of official show; but he must garb himself in some distinctive style, and the white tie and somber suiting of evening wear are prescribed. Embarrassment over actual or imaginary comment of spectators at his thus turning day into night matters little after the first few years. Only to local natives is his prestige in doubt, for to them fine feathers make fine birds.

#### MODERN AND MEDIEVAL CHEEK BY JOWL

From the American Legation in Addis Ababa to the Cathedral of St. George is five minutes by motor car. The journey ended, I take my official seat in the great Cathedral hall between two gaunt and venerable feudal chieftains. I know these bearded "greats" to be from the more remote parts of the Empire because they wear the ancient style of lion's-mane regalia (see Color Plates IV and VI). Native leaders better accustomed to the capital have taken generally to the more prosaic uniform of Europe.

These lion's-mane fellows are splendid to look at and most impressive in photographs, but rather difficult neighbors when one must sit for hours between two of them. The skin worn by one of this pair surely came from a particularly mature

lion. Its bristles are so stiff that they not only tickle but prick my ear and cheek. The other pelt lacks olfactory appeal. But both add magnificently to the scenery.

I look immediately over the head of Italy's Prince of Udine. Facing me across the open space before the twin thrones is a row of imposingly large and gilded chairs. The first seat holds a prince of England, more than resplendent in his guardsman's uniform. Next to him sits a prince of the ancient and royal line of Solomon; then a marshal of France, using his knee as a rest for his gold baton; a king of Tigre, an ambassador of Belgium, and so on.

Great and representative men from the Occident and from the Orient; bearded feudal chieftains from the north, the south, the east, and the west of this ancient Empire of Ethiopia—Christians and Moslems and many others all are gathered for the coronation of a new emperor on this second day of November, A. D. 1930 (the Ethiopian date of Tekemt 23d, 1923)—modern civilization cheek by jowl with medievalism.

The studded doors of the Holy of Holies open ponderously. Through them rolls, in giant and stirring hum, the seemingly far-off chant of hundreds of priests, probably exactly as it would have sounded on an Ethiopian coronation day a thousand and more years ago.

#### ENTER THE CONQUERING LION

The Conquering Lion of the Tribe of Judah and his Empress have just completed a night of prayer and devotion at the most holy altar within. Preceded by waving incense-burners, His Majesty enters now the main part of the Cathedral and takes his throne.

The thrilling but solemn silence gently breaks to the throaty voice of His Holiness the Abuna Kyrillos:

"Ye princes and ministers, ye nobles and chiefs of the army, ye soldiers and people of Ethiopia, and ye doctors and chiefs of



ETHIOPIAN WARRIORS CHARGE THE THRONE (SEE OPPOSITE PAGE)

At a military review held during the coronation festivities, mounted and unmounted warriors proclaimed their prowess as they dashed up a slope toward the imperial throne.



Photographs by W. Robert Moore

THEIR IMPERIAL MAJESTIES RIDE IN STATE PROCESSION THROUGH ADDIS ABABA

Two days after their coronation, the Emperor and Empress, attired in full coronation robes with the exception of their crowns, visited the chief metropolitan churches of the capital. An extra rear seat has been attached to the royal motor car, in which the parasol-bearers may sit.



Photograph by W. Robert Moore

#### THE EMPEROR AT A MILITARY REVIEW

In full military dress of red and gold and high lion-maned busby, the sovereign sits on his red-and-gold throne in a richly carpeted pavilion. High Ethiopian officials and diplomatic representatives are seated to the right and left.

the clergy, ye professors and priests, look ye upon our Emperor Haile Selassie the First, descended from the dynasty of Menelik the First, who was born of Solomon and of the Queen of Sheba, a dynasty perpetuated without interruption from that time to King Sehalé Selassie and to our times."

#### SEVEN SYMBOLS OF AWE AND MAJESTY ARE RESTOWED

For five hours then we witness the unfolding of the ancient and traditional

Hebraic-Christian ceremony of the crowning of a ruler of the Empire of Ethiopia. Forty-nine bishops and priests of this ancient Christian country, in groups of seven, have held place for seven days and nights in the seven corners of this national Cathedral to chant without ceasing nine Psalms of David. They are now joined by hundreds more. The Established Coptic Church is revered and all-powerful in Ethiopia. This is a day when it may, and does, show its impressive might and splendor.



Photograph by W. Robert Moore

#### THE MINISTER OF WAR HEADS THE ROYAL PROCESSION

Since the coronation, when this photograph was made, the Minister of War, Fetawrari Mou Iou Gneta, has been promoted to a Ras and has become governor of a province in western Ethiopia (see, also, Color Plates III and VII).

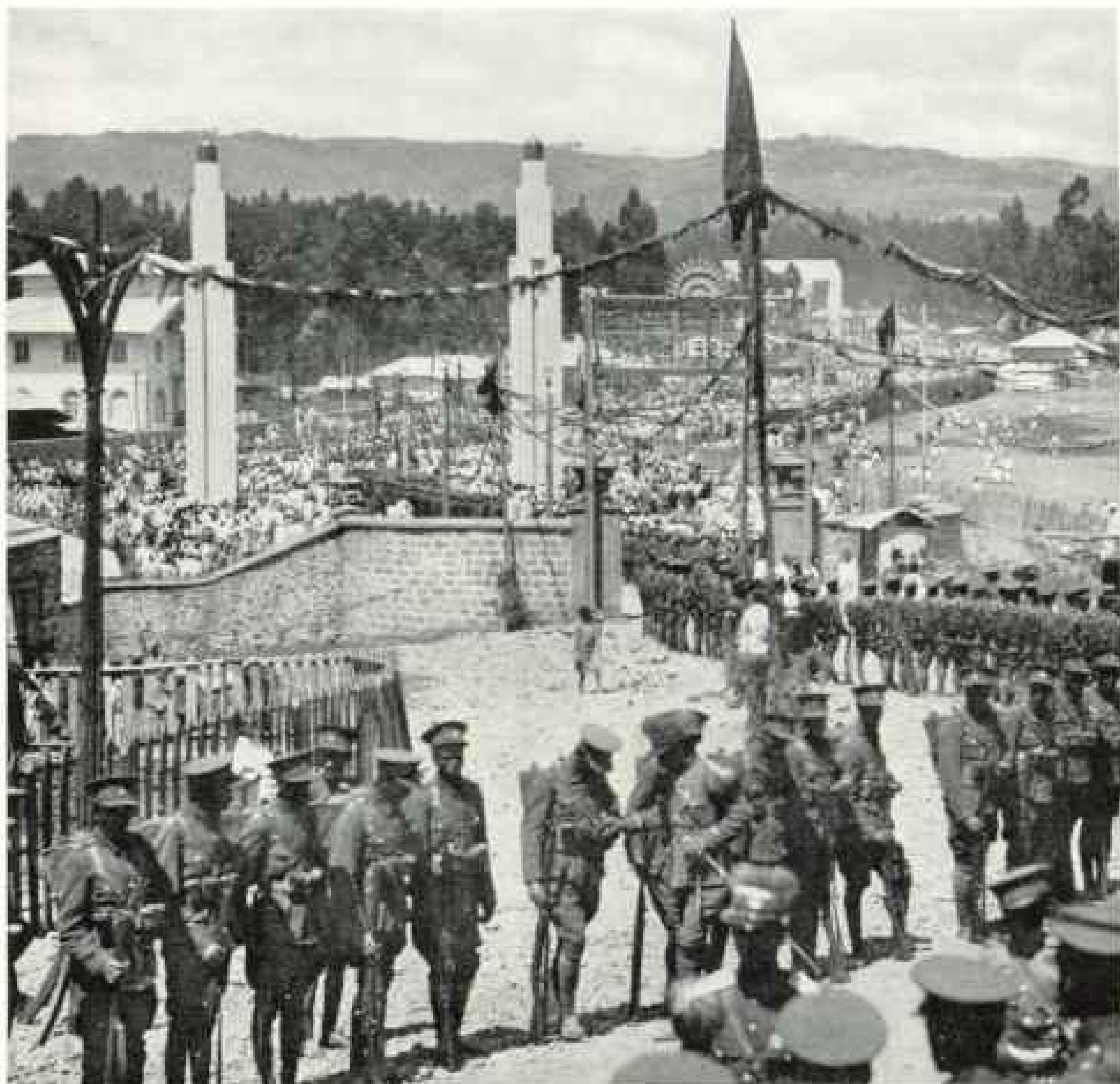
The Emperor, whose name may be Anglicized as Power of the Trinity, is vested first with his sword of gold studded with precious stones. Chanting and prayers to the God of Gods rise from a multitude of priestly throats and reverberate from the lofty ceiling of the Cathedral.

Bestowals of the imperial scepter of ivory and gold and a golden globe of the earth follow.

The diamond-encrusted ring, the two traditional lances filigreed in gold, and the imperial vestments are all bestowed in turn with appropriate and lengthy ceremony. Seventh and last comes the magnificent crown.

Seven differently scented ointments of ancient prescription are received on the imperial head, brow, and shoulders—one with each of these seven ornaments of the coronation (see Color Plates I and II).

After the completion of the coronation ceremonies for the Emperor, the Empress enters and takes her throne. She is crowned with less elaborate but always impressive rites, conducted also by the archbishop, his bishops, and his priests. The final ceremony is a grand tour of the Cathedral by Their Imperial Majesties. They are escorted by the bishops and priests, the princes and high dignitaries, assistants, and others, carrying palm branches and chant-



Photograph by W. Robert Moore

#### CORONATION THRONGS FILL THE CITY STREETS

Tens of thousands of soldiers and civilians from the provinces swelled the population of Addis Ababa during the coronation festivities. A view from the Royal Palace grounds, showing the masses of people after one of the State processions. Some of the modern khaki-clad troops are in the foreground (see, also, Color Plate V).

ing in mighty volume, "Blessed be the King of Israel."

Shortly after noon the cannons boom. There is the fanfare of a thousand trumpets. The triumphant ululation of tens of thousands of waiting women is released in waves over the city of the "New Flower."

We go forth in proud procession, which escorts to his "Hill of the Palace," across the city, the three hundred and thirty-fourth of all the kings of Ethiopia and the one hundred and thirty-fourth of the *Christian kings* of the Empire.

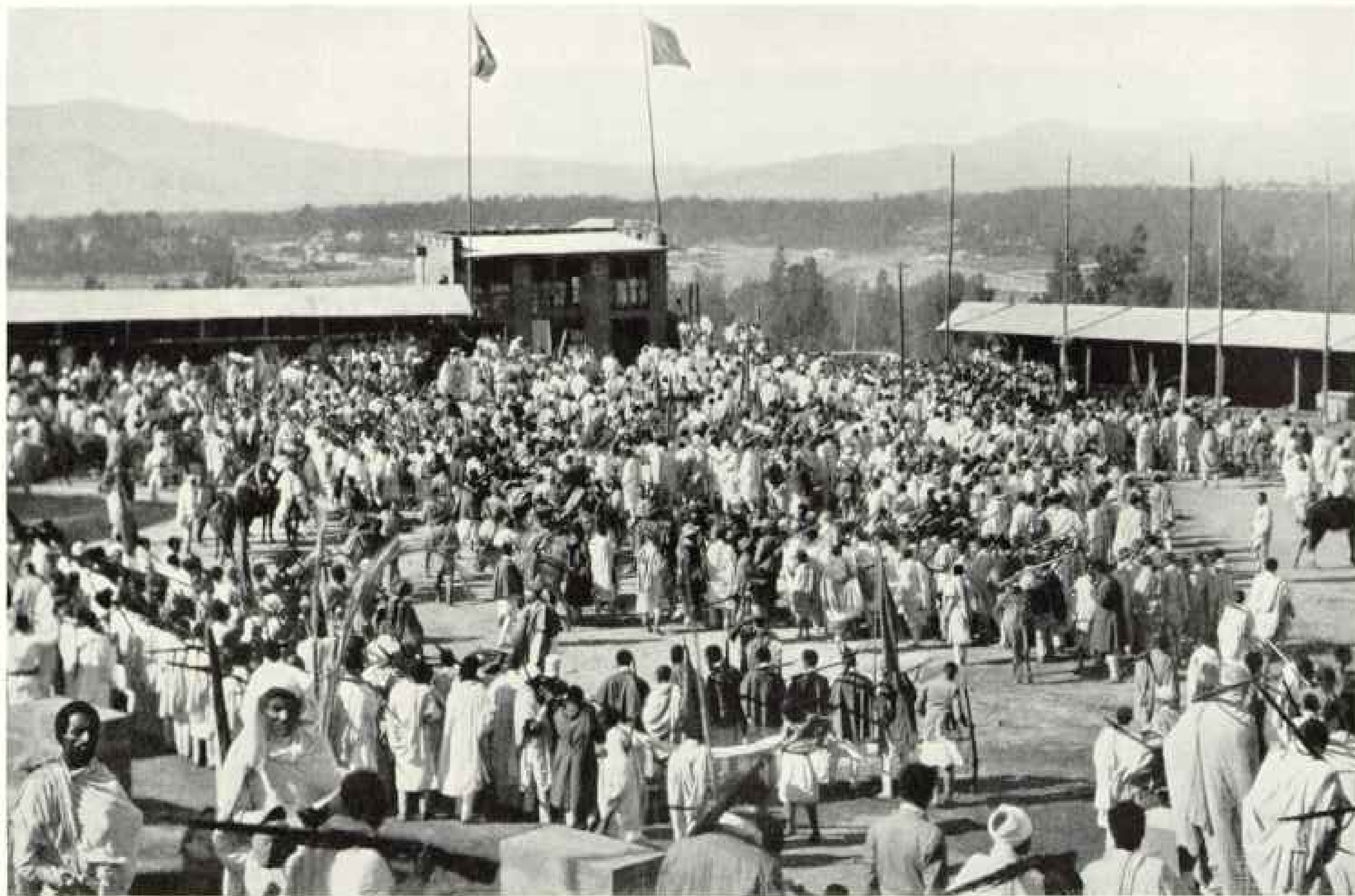
The Ethiopians list their kings from Ori, of 4478 B.C., to Haile Selassie the

First, of A. D. 1930—with time out, naturally, from the date of the Deluge until the Fall of the Tower of Babel. What matters time in a country which can reach with such apparent certainty directly back into the dim mists of the past!

Was the Queen of Sheba an Abyssinian? I believe that she was, and that, more intimately known to her contemporaries as Makeda the Ethiopian, she possibly lived in what we now again call Ethiopia and certainly included it in her extended domain.

"Shoa was once Sheba," say my Ethiopian friends in speaking of their principal





Photograph by W. Robert Moore

THE ROYAL PALACE INCLOSURE SERVES AS AN ASSEMBLY GROUND FOR THE MILITARY

Companies of soldiers gather for review on the Felou-Omba plain, a portion of which may be seen in the valley to the left (see, also, illustration on opposite page).



Photograph by W. Robert Moore.

A MILITARY REVIEW IS A GALA OCCASION

Interested spectators surrounded the Felou-Ouaba plain at the edge of Addis Ababa on the day of the military display. Nearly 200,000 people either watched or took part in the event. A number of the automobiles are familiar American products.



Photograph by W. Robert Moore

#### THE KING'S HORSES AND THE KING'S MEN

Some of the infantry and cavalry have been provided with modern equipment and khaki uniforms (see, also, page 683), but the majority of the soldiery still wear the *chamma* and other picturesque garments of old.

province of to-day. The royal house of Shoa claims the present Emperor.

I have also been told by many Abyssinians that, since their country was Ethiopia in the time of their Queen's visit to Solomon, they rightfully prefer that geographical designation to the one favored by recent map-makers, which has an origin obscure and not inspiring. Ethiopia is to them more dignified than Abyssinia.

Could King Tutankhamen be resurrected spiritually as he has, in recent years, been resurrected materially, he would find interest in this modern and decidedly vigorous survival of that Ethiopia which is said to have provided not the least of the

foreign-relations problems with which the Pharaohs of ancient Egypt wrestled.

#### ETHIOPIAN SOIL SUPPLIES THE "FLESH-POTS OF EGYPT"

Political relations pass into the discard of ancient history. Ethiopia, however, continues one most important relation to Egypt as a source of youth to its agricultural prosperity. I think of the Blue Nile, so named from the dark color of its silt-laden waters. This river in mighty flood from the heavy summer rains in the Ethiopian mountains dams the flow of the White Nile at its junction near Khartoum and carries directly to the inundated fields



Photograph by W. Robert Moore

AT THE UNVEILING OF THE MENELIK II MONUMENT (SEE COLOR PLATE VIII)

The Emperor, wearing a sun helmet, stands on a dais at the right, under a small parasol.

and gardens of Egypt its load of rich and life-giving Ethiopian soil.

This Ethiopian contribution represents much of the water and most of the rich silt upon which Egypt depends for agricultural prosperity—so much so that the control of the Blue Nile has become an outstanding problem, not only of Egyptian, but of international concern.

By means of a dam where the Blue Nile issues from Lake Tsana (see page 746), the waters can be made to serve more efficiently. Part of my own work in Ethiopia has had to do with an American arrangement for building such a dam. American engineers surveyed the site a few months ago. Actual beginning of this \$20,000,000

construction probably will not be long delayed.

Modern Ethiopia includes more than 350,000 square miles of the rich and productive northeastern African plateau. It is mainly a mountainous region, much broken by deep valleys. Arid, semidesert country surrounds it on every side. It does not touch the sea, although some Ethiopian feudal chieftains like to grasp a marine telescope as they pose for a formal photograph (see map, page 702).

In the population there are, perhaps, 5,000,000 Christians of the true Ethiopian (Hamitic-Semitic) type. They are the inheritors of an ancient civilization under whose feudal form of government are



Photograph by W. Robert Moore

AMERICAN VISITORS AT THE MENELIK II MAUSOLEUM

The American special diplomatic group to the coronation is leaving the mausoleum after having placed a wreath before the tomb of the present emperor's grand-uncle, who made the first treaty Ethiopia ever had with the United States (see, also, Color Plates III and X).



Photograph by W. Robert Moore

THE GERBI, OR ROYAL PALACE, CROWNS ONE OF ADDIS ABABA'S MANY HILLS

With the exception of the domed mausoleum to the left (see preceding page and Color Plate X), all of the buildings seen across the eucalyptus-covered ravine were constructed under the supervision of Emperor Menelik II.

estimated to be 7,000,000 Moslems and pagans. The latter are mainly negroes.

The country is surrounded, or embraced, we might say, by African colonial possessions of Great Britain, France, and Italy. As the Ethiopia of Solomon's time, it probably included all of these adjacent territories, with an Egyptian frontier, and that part of southwestern Arabia known to-day as the Yemen and Hadhramaut.

We find in Ethiopia a very evident mixture of Asia and Africa. Some of the blood came from ancient Palestine, some from Arabia, and some from the shores of the Caspian. Authorities do not agree as to the elements in this African melting pot of races. But the Ethiopian claims with pride a strong relation to the Semites. To one who knows them well this claim is quite understandable.

Rasselas was the first Ethiopian I knew. I met him in the pages of that beautiful work of the imagination of the illustrious Samuel Johnson, published as "Rasselas, a Prince of Abyssinia."

I have met many less imaginary but equally interesting Ethiopians. Fourteen years ago I first visited Ethiopia. At various times since I have renewed my acquaintance. My latest visit has run into a continuous residence of three years. As my acquaintance has grown, so has my interest increased in fascinating Ethiopia.

#### DJIBOUTI IS ETHIOPIA'S FRONT DOOR

The front-door entrance and port to Ethiopia is Djibouti, French Somaliland. I have traveled, as you may also, from Europe to Aden, and thence across the Gulf of Aden to Djibouti. A preferable and more modern route is from Europe directly to Djibouti.

Djibouti is poetically termed by the French "Queen of the Sands." From offshore its small group of whitewashed stone and mud buildings and pyramidal piles of salt, from the principal industry of evaporating sea water, glisten and sparkle in the tropical sun. There is just a suggestion of the immediate background of tawny desert and of the purplish mountain shapes of Ethiopia in the far distance (page 704).

The sea water is bluest of blue and the beach sands are snowy white. The picture is singularly attractive, although I must admit that on shore the heat, the flies, and the fleas vie at certain seasons in establishing a maximum of human discomfort.

The French are commendably responsible for Djibouti. It is the base of their 500-mile railway from the coast directly inland to Addis Ababa, the Ethiopian capital. This railway is Ethiopia's only modern connection with the outside world (see page 703).

Djibouti is, therefore, very important to Ethiopia. It is headquarters for an Ethiopian consul who gives intending visitors their visas. My first Ethiopian friend there was the one-time consul, Ato Yusef (Anglicized as Gentleman Joseph), an elderly individual with snow-white hair and a decidedly Hamitic caste of countenance and color, who wore with ostentation and pride the Legion of Honor insignia. He gave me always a hearty welcome and always assured me that the Ethiopian Government was looking forward to my visit. Ato Yusef is gone these many years.

#### THE FAST EXPRESS MAKES NEARLY 14 MILES AN HOUR

There are two kinds of trains now on the efficient but expensive little Franco-Ethiopian Railway. On Sunday and Wednesday mornings a train leaves Djibouti to arrive three days later in Addis Ababa. Each Tuesday evening departs the "through express," which does the 500 miles in 36 hours. Passengers can sleep on this "fast" train, not in Pullmans, but in adjustable seats. On the three-day trains sleeping is done at little wayside hotels the two nights *en route*.

My first, and of course best-remembered, trip into Ethiopia was in the days when there was no express service. To see the semiweekly morning train off, there is always a considerable assemblage in the Djibouti station—mostly native loafers, of whom the majority are dusky Somalis and Danakil in the usual abbreviated desert costume of a yard or so of cotton cloth. Sometimes there may be observed a more dandified individual sporting a leopard skin as costume.

Nearly every one of these fellows carries a spear shaft minus its business end. The omission of the lethal point, I have been told, is in deference to the enforced wishes of the French police authorities at Djibouti, who find these dark sons of the desert unduly careless in the use of any cold steel handy when emphasizing the wordy differences of opinion to which they are prone.

PRESENT DAY SCENES IN THE WORLD'S OLDEST EMPIRE



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Natural Color Photograph by W. Robert Moore

THE NEWLY-CROWNED MONARCHS OF HISTORIC ETHIOPIA

The Emperor, Haile Selassie the First, and the Empress Menen, in their coronation robes, posed especially for the National Geographic Society's representative. In the background stand the Crown Prince, Isfao Wasen (right), and a younger son of Their Majesties, little Lidj Makonnen. Their Majesties also have three daughters.





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HE PLACED THE CROWN ON THE EMPEROR'S HEAD

The Abuna, or Archbishop, appointed by the Coptic Patriarch of Alexandria to preside over the Ethiopian Church, speaks only Arabic. Ethiopia has maintained her Christian faith for sixteen centuries (see, also, Color Plates IV and IX).



Natural Color Photographs by W. Robert Moore

"THE LION OF THE TRIBE OF JUDAH" IN CORONATION RAIMENT

Although only 39 years of age, the Emperor has directed the affairs of State as Regent since 1916, previous to which he, as Ras Tafari, was Governor of the wealthy Harar Province, having succeeded his father, Ras Makonnen.



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#### THE AMERICAN DELEGATION TO THE CORONATION

The American special Ambassador, Mr. H. Murray Jacoby, Brig. Gen. William Wright Harts, and Mr. Charles Lee Cooke, Department of State, are with Ras Gugsa, Governor of Tigre Province, who was designated by the Emperor to accompany the American party during their visit. It took as long for Ras Gugsa to reach Addis Ababa from his isolated province as for the American Mission to get there from New York.



Natural Color Photographs by W. Robert Moyn.

#### HE DIRECTS THE EMPEROR'S MILITARY FORCES

His Excellency, Fetawrari Men Iou Gueta, who holds the position of Minister of War, is here attired in full ceremonial costume and is holding spears and a shield of rhinoceros hide, which are still used as fighting equipment in Ethiopia (see, also, Color Plate VII). The country's forces are organized in much the same manner as were the feudal armies of Europe in the Middle Ages.



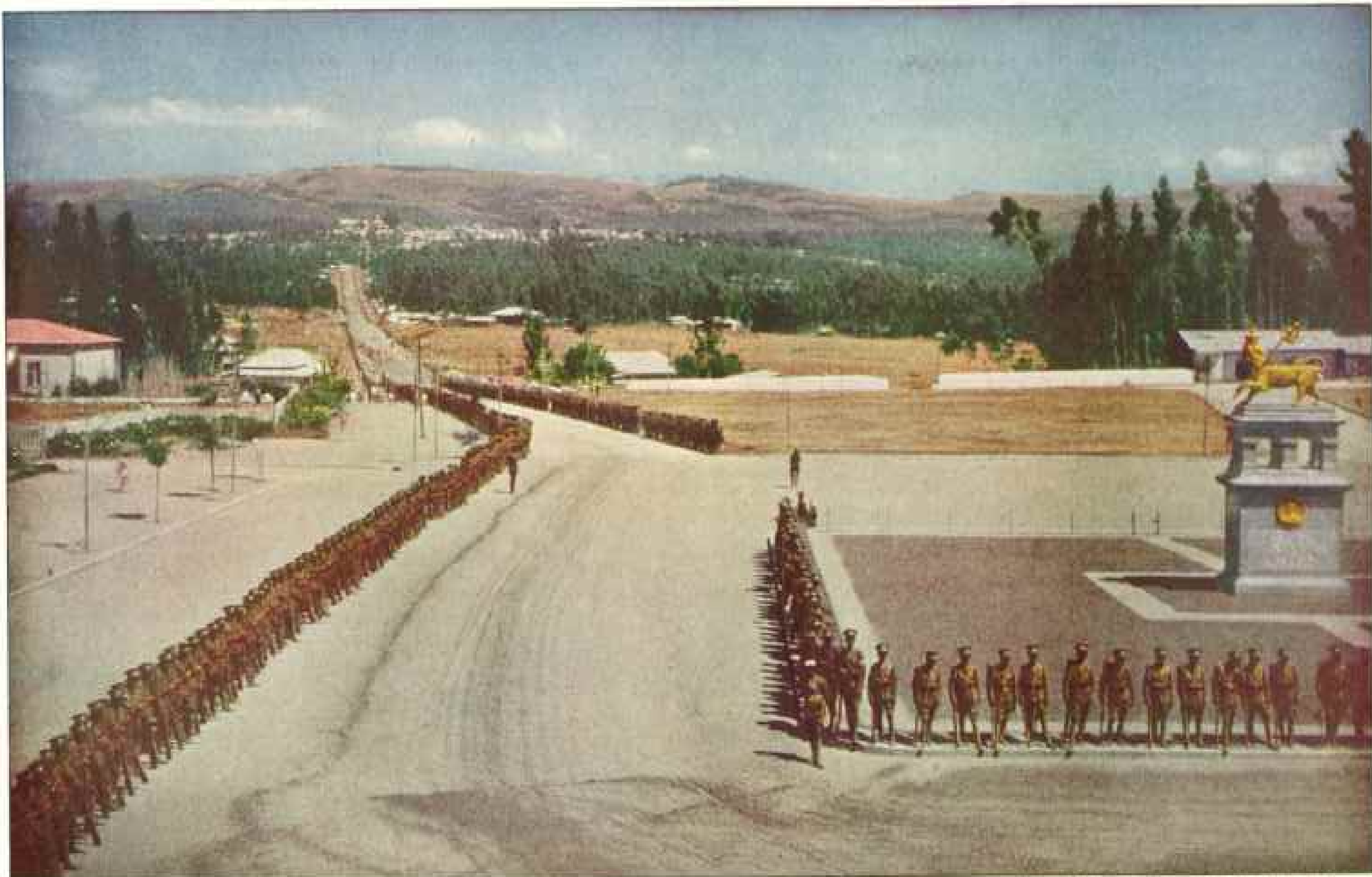
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Natural Color Photograph by W. Robert Moore

THE CLERGY ARE EXEMPT FROM BEARING ARMS

Priests with their crosses and censers (left); venerable warrior (right), with headdress and collar of lion mane and a rhinoceros shield.



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Natural Color Photograph by W. Robert Moore

**KHAKI-CLAD SOLDIERS AWAIT THE ARRIVAL OF A DIPLOMATIC MISSION TO THE CAPITAL**

St. George's Cathedral and a few surrounding shops, together with the Palace just out of range at the right, are all that can be seen of Addis Ababa on its eucalyptus-forested hills. The lion monument in the right foreground was erected by the officials of the Franco-Ethiopian Railway to Emperor Menelik II, who had much to do with the completion of the line.



HEADRESSES AND COLLARS OF LION MANE ARE FOR THE BRAVE

A group of hardy warriors clad in colorful robes sitting on the steps of St. George's Cathedral on the morning of their Monarch's coronation.



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Natural Color Photographs by W. Robert Mante

VETERANS SUCH AS THESE HAVE KEPT ETHIOPIA FREE

Brilliant costumes and rhinoceros shields bound with silver-gilt will no doubt soon disappear, as Emperor Haile Selassie is putting his soldiers into modern khaki uniforms (see, also, Color Plate V). Virtually every man in Ethiopia, except members of the clergy, is a potential soldier.

PRESENT DAY SCENES IN THE WORLD'S OLDEST EMPIRE



THE MINISTER OF WAR RIDES A GAILY-CAPARISONED MULE

The high bushy of lion mane worn by His Excellency is one of thirteen made in London for the Emperor and his highest officials (see, also, Color Plate III).



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Natural Color Photographs by W. Robert Moore

BOTH MEN AND WOMEN WEAR THE NATIVE-WOVEN "CHAMMA"

The *chamma*, or upper garment such as this man is weaving, is worth about seven thalers, although some of the very finest ones are worth as high as 200 or 300 thalers. The Maria Theresa silver thaler, valued at about 33 cents, is the currency of the country, and, although minted to-day, the coins must bear the date of 1780.



A TRIBUTE TO THE FAMOUS MONARCH, MENELIK II

The equestrian statue was unveiled by Haile Selassie the day before his coronation, in the presence of high Ethiopian officials and the foreign diplomatic groups. The coronation took place in a temporary building adjacent to St. George's Cathedral, which may be seen in the background.



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Natural Color Photographs by W. Robert Moore

TWO AMHARIC BELLES OF THE CAPITAL CITY

These Ethiopian women shade their heavily-battered pompadours with umbrellas. Amharic is the official language of the country, although the Amharic people form only about one-third of the population.

The traveling public on the Franco-Ethiopian Railway is truly international. Usually an Englishman, a German, or an American, two or three Frenchmen or Italians, Arabs or Turks, and perhaps a dozen Armenians and Greeks make up the first- and second-class complement of the average train.

#### LUGGAGE RACKS HOLD SPEARS AND RIFLES

The third-class passengers are largely natives of the country. They ride in what we Americans would call small box cars, provided with lengthwise benches or upholstered cross-seats. No third-class coach on this railway is complete without a rack from which to hang the rifles and spears of the passengers. Windows and doors are rarely, if ever, closed. The problem of ventilation, which in these usually much-crowded cars would be one of importance, thus solves itself.

The scenery, after the train leaves Djibouti, is more or less an ascending stretch of tawny desert, broken here and there by outcroppings of great gray and black rocks. Occasional patches of thorn bushes, delectable provender for camels, vary the pattern. The only green is at the little stations where water kept for the locomotive permits cultivation of a tiny patch of vegetables and two or three papaya trees.

Sometimes the station building is kept company by a few native huts, in the construction of which kerosene tins and cases are widely used. An occasional hut is embellished on front or side with the stretched skin of an unfortunate leopard, speared, perhaps, in the act of filching a fat-tailed sheep from the thorn *zareba* (stockade) near by.

#### THE NOMADS CANNOT RESIST COPPER WIRE

This desert view is not as monotonous as one might think. The train stops occasionally in the open country between stations. We wonder why until we discover scampering back from the locomotive tender a couple of dusky wiremen—trouserless, but otherwise unimpeded by clothing—who climb thin poles with barefoot agility to mend a break in the telephone and telegraph line paralleling the railway.

These breaks once occurred more frequently than now, because of the attrac-

tion the bright copper wire held for the nomadic tribesmen, who parloined lengths of it from which to fashion armlets, anklets, and other trinkets for personal adornment. The use of copper wire has now been more or less controlled by the authorities, but breaks occur still by reason of the gymnastics of the troops of great dog-faced baboons, which often cross the right of way. Giraffes, too, have been known to cause damage by hanging themselves in the wire.

From time to time a pair or more of wild guinea fowl rise with a whir and screech from almost under one's car window. Just as the eye is becoming glazed with drowsiness from the torrid heat, it catches sight of two or three dik-dik, tiny antelope not much larger than small dogs, which flit in and out of the scrub, disturbed by the passing train. Hundreds of thousands of dik-dik skins are used by American tanners.

#### NATIVE COIFFURES SERVE TWO PURPOSES

In desert Somaliland the people who come to meet the train at way stations combine curiosity with business. They bring for sale to native travelers raw morsels of goat and sheep; sometimes a bit of camel meat, high in age if not in price; small eggs of doubtful quality; scrawny chickens; camel's or goat's milk, carried in ancient skin or burnt-bark containers not accustomed to cleansing contact with water; and other odds and ends of not particularly appetizing foodstuffs. Cash in advance is the rule, to prevent the customers' profiting by a premature start of the train (see page 706).

By an application of animal fat or rancid butter as a hair pomade, some of the natives seek to produce modish coiffures and at the same time to discommode small parasites whose favorite habitat is the human head. One application of this unique pomade may be used as the base of another, and the olfactory effect is not to be recommended (see, also, page 741).

Another style of hair-dressing in vogue is achieved by the application of a plaster of lime. The effect is not only the eradication of insects, but a bleaching of the black, frizzly hair to a most glorious and pinkish red.

The Somali or Dankali beau with his locks thus tinted, his radiantly black skin





Photograph by W. Robert Moore.

#### IN COMMEMORATION OF ETHIOPIA'S RECENT CORONATION

The monument to the enthronement of Emperor Haile Selassie and Empress Menen stands on a newly built-up triangle in the center of the capital. The symbol suggests the name of the ruler, which means Power of the Trinity (see text, page 682).

well oiled, his white teeth dazzling, and his shoulders draped with several yards of white cotton sheeting arranged like a toga, is a vision not easily overlooked or forgotten. To complete the picture, there is usually a pet goat or fat-tailed sheep which has followed its master out of the hut and blinks in bored manner at the train. Since these natives are at least nominally Moslems, dogs are taboo. But man must have his animal companion; hence the sheep or the goat.

The first day of this railway journey ends usually at 6 in the afternoon, at Dire-dawa, the first town of importance after

the train enters Ethiopia. It is on the fringe of a plateau 4,000 feet above sea level and a 200-mile climb from the coast. Rain sometimes falls and the climate is equable. There is a substantial and well-kept railway station and an Ethiopian custom-house (page 707).

#### CEREMONIES FOR VISITING OFFICIALS; CUSTOMS FOR OTHERS

The customs ordeal is not for me. I am a visiting official. The Ethiopian governor of the town meets me with a considerable number of capable-looking soldiers. I am escorted with marked ceremony through the customs to one of the two frontier-style hotels. There is also a third hotel when the proprietor is not away hunting antelopes or lions.

An interesting side trip from Dire-dawa is the old Mohammedan walled town of Harar, four hours away by rough motor trip or a whole day by mule-back. Camels, horses,

or mules are available as a means of transportation, but the mule is considered the most appropriate for one of actual or apparent high station in life (see page 739).

The trip is now almost a commonplace one. When I first knew it, the governor provided an escort of about 30 soldiers to frighten away renegade tribesmen from the coastal desert country, who in those days of greater "personal liberty" found much diversion and occasional profit in looting the lone traveler on the trail to Harar. The Ethiopian authorities in recent years have become kill-joys in so far as that particular diversion is concerned.

Diredawa even has an American-educated mayor.

#### THE ESCORT KEEPS UP WITH THE MULE

My soldiers used to walk or run—according to the mule's humor—the entire 35 miles in a day. They would go through the motions, at least, of lifting both the mule and me over certain steep places in the ascent of the Harar plateau. There would, of course, be a certain pecuniary reward at the end, the amount depending on the degree of interest shown by them *en route*.

On my first visit to Harar I was given, as part of the traditional courtesy of Ethiopian provincial officials to the recommended traveler, a big and very much alive ox, many baskets of large, round, flat cakes of Ethiopian bread, and a generous number of jars of home brew.

Such gifts are embarrassing until one understands how to dispose of them. They are actually intended for the nourishment and cheer of one's Ethiopian escort. My 30 soldiers killed the ox and ate him completely before sunset of the next day. For me there was broiled a choice bit of the tenderloin.

This old-fashioned style of Ethiopian hospitality is now enjoyed mainly in the outlying parts of the Empire. More Occidentalized procedures have come into practice in the easily accessible centers.

#### ETHIOPIA IS THE HOME OF COFFEE

The Harar district, town and province, is the center of production of cultivated coffee in Ethiopia. Investigation of that



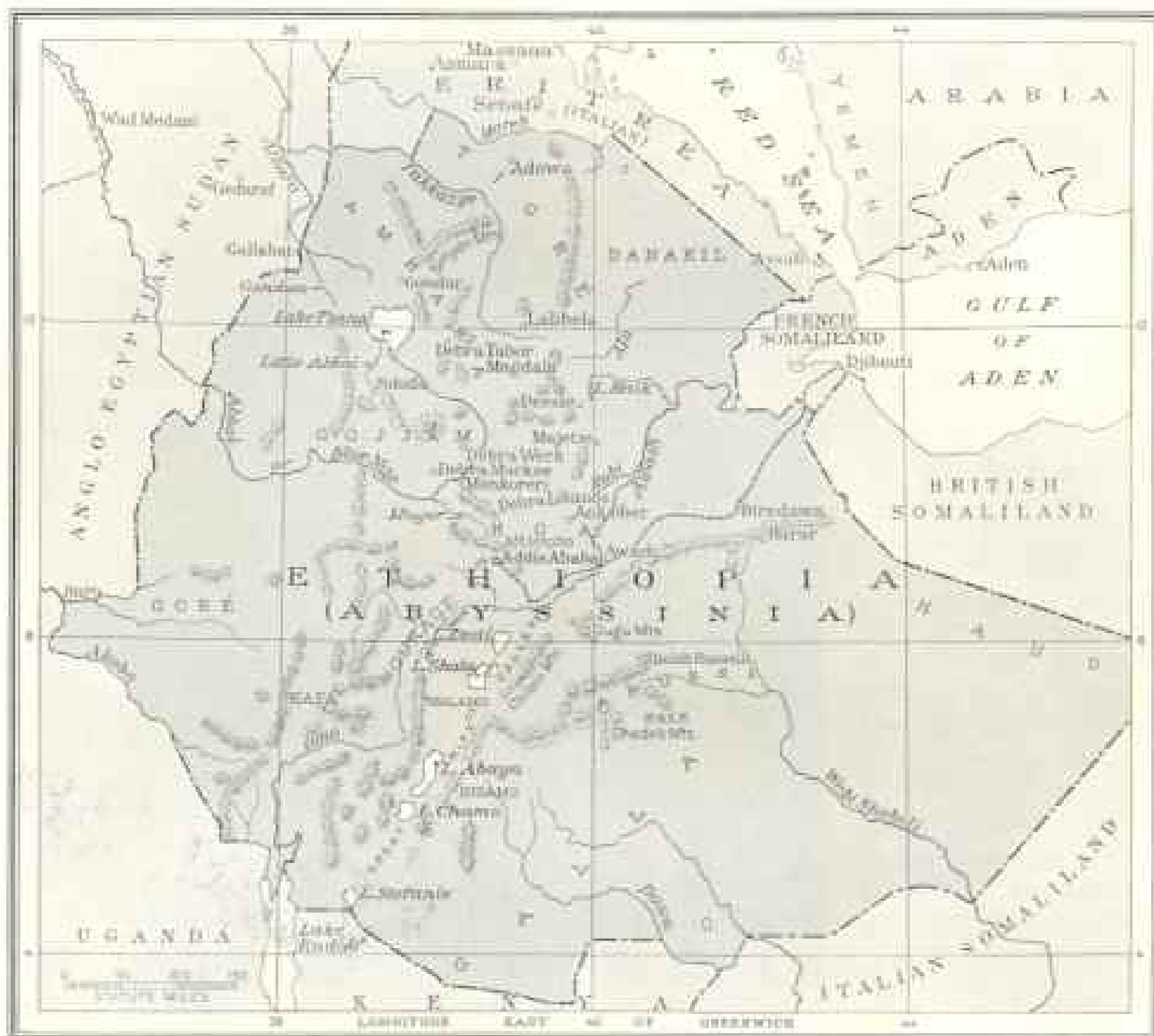
Photograph by W. Robert Moore

#### AN ARMY CAPTAIN IN FULL-DRESS UNIFORM

The resplendent robes and jewel-studded, gilt-bound rhinoceros shield are gifts from the Government to this dignified warrior.

was one reason for my earlier visits to Harar. The bean produced is of excellent quality and ranks next only to Mocha in world markets. It is called "long-berry Mocha" and is sold to a discriminating clientele in the United States.

Although the Harar plantations are descended from seed introduced from the Mocha district in Arabia, Ethiopia is the home of coffee. The tree was found originally by Arab travelers in the Ethiopian province of Kafa, from which it took its name. Seed was taken from Kafa to Arabia, and thence came back to Harar. According to the Arabs, the cultivation of coffee also spread to other parts of the



Drawn by James M. Darley

#### ARID, SEMIDESERT COUNTRY SURROUNDS ETHIOPIA

The ancient Empire embraces more than 350,000 square miles of the productive northeastern plateau of Africa, and, while it lies wholly within the Tropics, its elevation tempers the climate.

world from the Yemen, in southwestern Arabia (see page 735).

In Kafa and adjoining parts of southwestern Ethiopia may be seen to-day vast and virgin forests of coffee of the indigenous variety. It necessarily grows without cultivation or care and thousands of tons of the berries fall to the ground in waste each year.

The outer fringes of some of these forests are worked by natives in sections not too far from export trading centers, where the market value of coffee is known. Egypt buys much of this coffee, shipped via Khartoum, in place of former importations of the Brazilian product.

An article in the NATIONAL GEOGRAPHIC MAGAZINE describes *kat*, the

"Flower of Paradise,"\* grown in the Arabian Yemen. This small celastraceous shrub, known botanically as *Catha edulis*, is cultivated in Harar also. The tender shoots and twigs are gathered wet with the early morning dew and made into bundles, protected by larger leaves and grass to keep them fresh, for sale in the native bazaars. Good prices are obtainable, particularly from the Moslems.

I am always reminded of a goat when I see a native leisurely masticating these kat twigs, which are chewed to stimulate wakefulness, relieve fatigue, and produce pleasant hallucinations.

My main adventure in Harar was a lion

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



ETHIOPIA'S FLAG WAVES OVER A FRONTIER SOME 3,000 MILES LONG

The Empire has British, Italian, and French neighbors, the first holding about 2,000 miles of boundary and Italy most of the remainder, only about 200 miles being French (see map, opposite page). A train halt at an Ethiopian gendarme post, with the green-yellow-red banner flying (see, also, Color Plates X and XIV), on the Ethiopian-French-Somaliland frontier.



Photographs by Addison E. Southard

ETHIOPIA HAS ONLY ONE RAIL LINK WITH THE OUTSIDE WORLD

The 500-mile-long Franco-Ethiopian Railway connects Addis Ababa, the capital, with Djibouti, in French Somaliland. Formerly only two trains a week were run in each direction, the trip requiring three days, with stop-overs at night; now there is also a 36-hour "through express."



Photograph by Addison E. Sutherland

THE GOVERNOR'S RESIDENCE AT DJIBOUTI, FRONT-DOOR ENTRANCE TO ETHIOPIA

Though it is the port, the capital, and the only town of any size in French Somaliland, the "Queen of the Sands" derives its main importance from the fact that it is the base of the railway from the seacoast directly inland to the capital of Ethiopia. The Empire carries on internal trade by caravan, but most of its foreign commerce passes through this French port (see, also, text, page 690). It is also headquarters for an Ethiopian consul, who gives prospective visitors their visas.



Photograph by Salisbury from Gallinay

**PROUD OF HIS WARLIKE HERITAGE**

The Ethiopians start carrying arms at an early age and love to play at soldiers.



© Alus Stöcker

**HOW WILL YOU HAVE YOUR EGG?**

The ostrich egg which this cook will serve to her master's family is equal to 24 chicken eggs.



© Alex. Stöcker

## REFRESHMENT VENDERS INSIST ON CASH IN ADVANCE

Third-class passengers, on the way from Djibouti to Addis Ababa, are bargaining for the cactus pears, tea and coffee, eggs, bread, camel's or goat's milk, and sugar cane sold at a way station. Sometimes the hungry traveler "forgets" to pay for his purchase, or else the train pulls off before change has been made; therefore the vendors, a canny lot, demand that payment be made before delivery of goods (see, also, text, page 699).

hunt. Though not fruitless, it was not sufficiently successful to merit accurate recording. I like big figures. But there are plenty of lions not far from the old walled town. They are the fine black-maned fellows so alluring to the big-game hunter. Probably other kinds can chew one up just as thoroughly, but the Harar fellow is particularly respected.

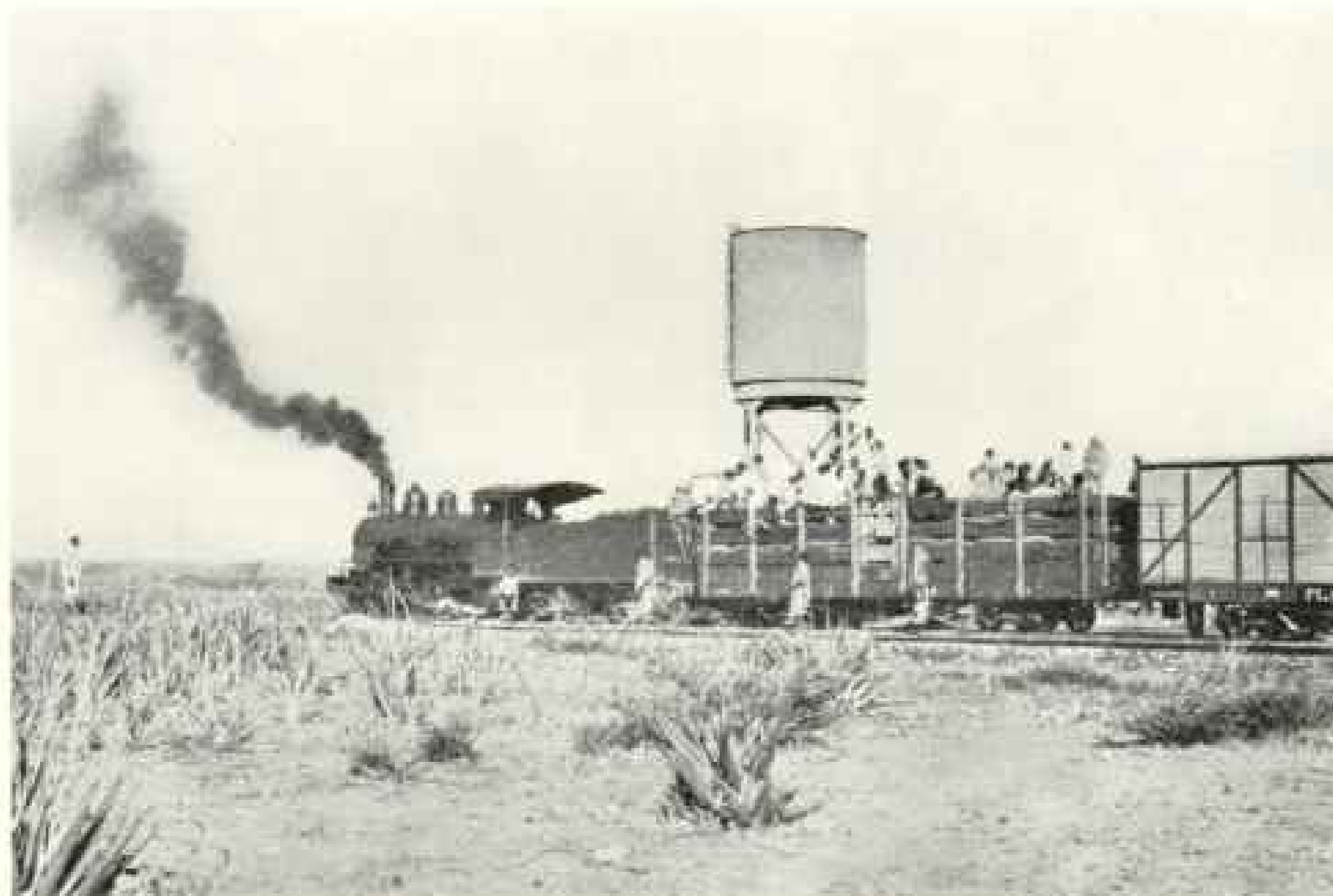
When an Ethiopian kills a lion, he has the right to demand a special audience from the Emperor during which to declaim and act out the feat. Afterwards he is privileged to wear the mane and skin as part of his warrior dress.

Resumption of the railway journey from Direlawa is at early dawn. For many reasons trains in this part of the world do not operate frequently at night. In the days of my first trip over the line the nomadic tribes domiciled along certain sections of the right of way were not averse to the entertainment afforded by a train jumping the tracks, and they enjoyed arranging such spectacles, particularly at

night. These playful practices have been much discouraged in recent years, along with others which once upon a time added to the hazards of travel in Ethiopia.

The days are probably gone forever when a doughty warrior would actually attempt to distinguish himself by attacking a moving engine head-on with spear and shield. The son of the desert has had to give up so many diversions that his life must have become somewhat monotonous. But better times are coming; the radio and popular-priced cinema are in the offing.

Wild and domesticated animals still roam more or less freely at night in these sparsely settled parts of the Franco-Ethiopian Railway zone. They frequently happen on the right of way and generally do not appreciate the nature of a railway locomotive until too late. The "fire-wagons" themselves do not always escape unscathed in collision with a rhinoceros, a large antelope, or a camel or hefty bullock from the semidomesticated herds untrammelled by fences.



A GREAT LARK FOR THE ETHIOPIAN SOLDIER

If more than one feudal chieftain boards the train for Addis Ababa, sometimes there is not enough room in the coaches for their soldiers, who must then climb into open freight cars or even ride on top of the train (see, also, text, page 714). A stop for water at a tank station.



Photographs by Addison E. Smedley

THE RAILWAY STATION AT Diredawa, END OF THE FIRST DAY'S TRIP TO  
ADDIS ABABA

This flourishing little town is the first of importance after the train from Djibouti enters Ethiopia. Originally the terminus of the railroad, it contains a number of well-built houses which were put up for the officials of the company. Adjoining the station is an Ethiopian customhouse (see, also, text, page 700).





© Alex Stocker

## AN ETHIOPIAN FILM STAR AND HER CAMERAMAN

Motion pictures have not as yet captured the Ethiopian public, though they are shown occasionally in the capital. The Emperor sometimes has private showings of travel films made by visitors to his country, and also feature films. Since the coronation, he has enjoyed "The King of Kings," "Ben Hur," and Admiral Byrd's Antarctic film, the first two because of their religious appeal to a Christian nation, the last because of its outstanding significance.



Photograph by Addison E. Southard

## FOOD AND QUARTERS ARE OF THE SIMPLEST AT AWASH STATION

After two days by rail from Djibouti, the traveler spends the night here before proceeding to Addis Ababa, unless he is traveling on the "through express" (see text, page 714). The station consists chiefly of a small railway yard, a low brick building which serves as hotel, some scattered native shacks, and numerous cats. Sportsmen find Awash a good shooting center.



Photograph by Addison E. Southard

THE MARKET PLACE IS THE FOCAL POINT OF LIFE IN THE CAPITAL CITY

Crude shelters against the sun are erected, and beneath and around them crowds a heterogeneous mass of men, women, and children of various races (see, also, pages 710, 711, 712, and 713).

Camels in particular, according to my personal observation, make a great deal of noise when struck by a locomotive, and are not displaced from the right of way without considerable shock to a train moving at even the reasonable speed favored in Ethiopia.

"Yes," replied a railway inspector to my obvious question, "we pay, and always the price of the most valuable camel of the herd."

This second day's journey on the railway is in Ethiopian-governed territory, but not in Ethiopia proper. Many families of huge, dog-faced baboons cross the right of way as the train approaches. They

are not caught by the locomotive. But 50 feet away from the train, 40 or 50 of the bigger fellows turn impudently to watch and grimace.

Fellow passengers are becoming more interesting. An occasional Ethiopian feudal chieftain, or *Dejazmatch*, sent down to rule this territory conquered by the late Emperor Menelik II, boards the train with his followers. He is usually *en route* to Addis Ababa for conference, discipline, or other purposes, at command of the King of Kings.

Responsibility often comes with age in Ethiopia. These *dejazmatches* are, therefore, usually elderly men. Many are more



ETHIOPIANS SELL HONEY IN GOATSKIN BAGS INSTEAD OF ONE-POUND COMBS. The sweet finds ready sale in the Addis Ababa bazaar, as *tej*, a native fermented drink, is made from it. (see, also, text, page 724).



Photographs by W. Robert Moore

#### WOMEN ARE THE PREDOMINANT SALES FORCE IN THE MARKETS

A large portion of the Addis Ababa bazaar, where 15,000 to 20,000 people gather to barter, buy, and sell every Saturday, is an outdoor market. Some of the sellers utilize small native umbrellas, as does the woman to the left, to protect themselves from the brilliant sunshine (see, also, illustrations, pages 709, 712, and 713).



Photograph by W. Robert Mooru

#### SUCH TRANSPORTATION REQUIRES STRONG HEADWORK

Large quantities of hides and skins, which form an important export of Ethiopia, are brought into the Addis Ababa bazaars to be dispatched by rail to Djibouti for shipment abroad.



Photograph by Abdison E. Southard

#### GALLA WOMEN THROUGH THE CAPITAL MARKET

They belong to one of the branches of Ethiopia's chief subject race. These women are Moslems, but most of the Gallas are pagans. The Gallas in the Addis Ababa region are less interesting than their wilder brethren, for they have lost many of their former customs and practices and have tended to assimilate to some extent with their Ethiopian conquerors.



Photograph by Addisen II. Semthari

#### RETAILING AMERICAN COTTON CLOTH AT ADDIS ABABA

Though Japanese textiles have cut into the market formerly dominated by American fabrics, cotton goods are still known as "American" to the native. Much cotton sheeting is used for that distinctive feature of the Ethiopian costume known as the *chamma*, a long strip of cloth worn on the order of the Roman toga (see Color Plates VII and XV).



© Alex Stöcher

#### THE SELLER OF SALT IS A MAN OF IMPORTANCE

So scarce, and therefore so precious, is salt in Ethiopia that a special quarter of the market at Addis Ababa is reserved for salt merchants. Bars of salt are used as currency in some parts of the country (see "A Caravan Journey Through Abyssinia," by Harry V. Harlan, in the NATIONAL GEOGRAPHIC MAGAZINE for June, 1925)



Photograph by Alfred M. Bailey

#### THE CREDITOR LEADS HIS DEBTOR ABOUT ON A CHAIN

When a man owes another money, the creditor has the delinquent delivered into his hands and decides whether the chain shall be riveted about the latter's ankle, wrist, or waist. The association continues until the debt is discharged, and often the two seem to derive considerable enjoyment out of it (see, also, text, page 728).



© Alex Stöckert

#### SPEARHEADS FOR SALE!

Among the objects displayed in the Addis Ababa market are these souvenirs of a proud and eminently warlike people. Many Ethiopians still carry a spear, though rifles are displacing these older weapons (see, also, Color Plate XIV). One of their few forms of amusement is spear-throwing, in which they are very skillful.

than six feet tall. With their grizzled and sacred whiskers and with voluminous white cotton mantles thrown togawise over their shoulders, they are magnificent specimens of feudal chieftainship.

#### TO THE CHIEFS, LARGE ARMIES MAKE GREAT COUNTRIES

Most of them, as befits leaders of mountain warriors, are interested only in things military. The first question they ask me is how many soldiers the United States has. They have heard, they say, that America is a great and fine country and it must, therefore, have many soldiers. More than one of my friends among these feudal barons has been disappointed to learn that I am not a soldier, either by birth or adaptation.

The military is one of the two supreme castes in Ethiopia. The other is the clergy, which holds the balance of power.

When more than one feudal chieftain is *en route* to Addis Ababa, the slow-moving train takes on an animated appearance. Each leader must be accompanied by a goodly number of his soldiers. If there is not room inside, the soldiers climb into open freight trucks and even on top of the cars for their free ride to Addis Ababa. The trip is for them a great lark. Ordinarily they have to walk.

The second night of the three-day train journey is passed on the banks of the Awash River, one of the peculiar streams of the world. At this point it is a swiftly flowing river in a deep canyon. Rising on the Ethiopian plateau, it turns northeastward toward the Red Sea, but loses itself in the Danakil lowlands short of its natural destination.

Awash consists mainly of a small railway yard, a one-story brick building housing a hotel under quasi-Hellenic management, a scattering of native shacks, and many cats (see page 708).

#### MOSQUITO NET IS ESSENTIAL EQUIPMENT FOR THE TRAVELER

Food and accommodations are simple. The most essential thing is a good mosquito net. Even in Awash the old-time tale of the trio formation of mosquito operation is familiar. Once a human victim is located behind what he fondly believes to be net protection, two of the "musketeers," one on each side of a mesh, stretch it for the entry of the third. This

operation, twice repeated, opens the way for the important part of the night's work.

The train gets under way again next morning at dawn and rolls through lovely grass and forest lands, where gallop many herds of gazelles and antelope. I once counted in 20 minutes seven different herds. Occasionally one sees the dark blur of a rhino breakfasting on the far side of the Awash River canyon.

About 4 o'clock in the afternoon of this third day the sprawling capital city of Addis Ababa is sighted in a forest of blue-gum trees, across a rolling, grassy plain some 20 miles from where the train first climbs to the final level of 8,100 feet from the Akaki River valley.

The background of the city is church-crowned Mount Intotto, once heavily wooded and a convenient source of firewood, which attracted the early settler. Some years ago, when most of the original juniper and acacia forest had been cut away, it was proposed to remove Addis Ababa to a new and wooded location, as many another Ethiopian capital had been moved in past centuries.

#### SCIENTIFIC FORESTRY SAVED ADDIS ABABA

The change was avoided, however, by Emperor Menelik's introduction, at the suggestion of his foreign advisers, of the quick-growing eucalyptus, or blue gum. The Emperor directed his subjects to plant eucalyptus, cut only trees designated by his officers, and replace all fallen trees by seedlings. Menelik never had to give an order a second time.

As a result of the monarch's foresight, Addis Ababa to-day has a forest which furnishes an ample and practically self-perpetuating supply of firewood. Incidentally, the trees provide a break against the strong, bleak winds that sweep at times over the high plateau upon which the capital city is situated.

The one-story frame buildings which formerly made up the railway station and customs depot at Addis Ababa have been replaced by handsome stone structures opened in 1929. Familiar sights at the station are the bales of hides and skins collected from the interior provinces for export to Europe and America; stacks of coffee bags; piles of elephant tusks, and bales of American cotton piece goods, which are a principal import.

PRESENT DAY SCENES IN THE WORLD'S OLDEST EMPIRE



ONE FOURTH OF ETHIOPIA'S MANHOOD SERVES THE COPTIC CHURCH

Clergymen attached to the St. George Cathedral in their full ceremonial robes worn during the recent coronation at Addis Ababa. The church has always been the educational force of Ethiopia. Sacred literature is written in ancient Ge'ez.



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Natural Color Photographs by W. Robert Moore

WARFARE HAS BEEN THEIR CHIEF OCCUPATION

Approximately 100,000 soldiers were encamped in Addis Ababa during the coronation ceremonies (see, also, Color Plates V and VI).





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OLD WARRIORS GUARD THE FORMER EMPEROR'S TOMB

King Menelik II gained the reverence of his subjects because he ruled his country with a firm hand and a loving heart. His mausoleum is one of the finest buildings in the Capital. It is the custom for a visiting diplomat to place a wreath at the tomb.



Natural Color Photographs by W. Robert Moore  
MUSIC GLADDENS THE ETHIOPIAN'S HEART

Itinerant Walamo musicians produce queer airs on their long pipes of bamboo and animal horns. The interesting music produced by the combination of the different pipes is often accompanied by dancing. The drum provides the cadence.



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Natural Color Photograph by W. Robert Moore

A STREET SCENE DURING THE CORONATION FESTIVITIES

The gilded rhinoceros shields and brilliant capes give a hint of the magnificent spectacle presented on all of the streets of Addis Ababa along which the royal procession passed when visiting the chief metropolitan churches to render thanks, two days after the coronation.

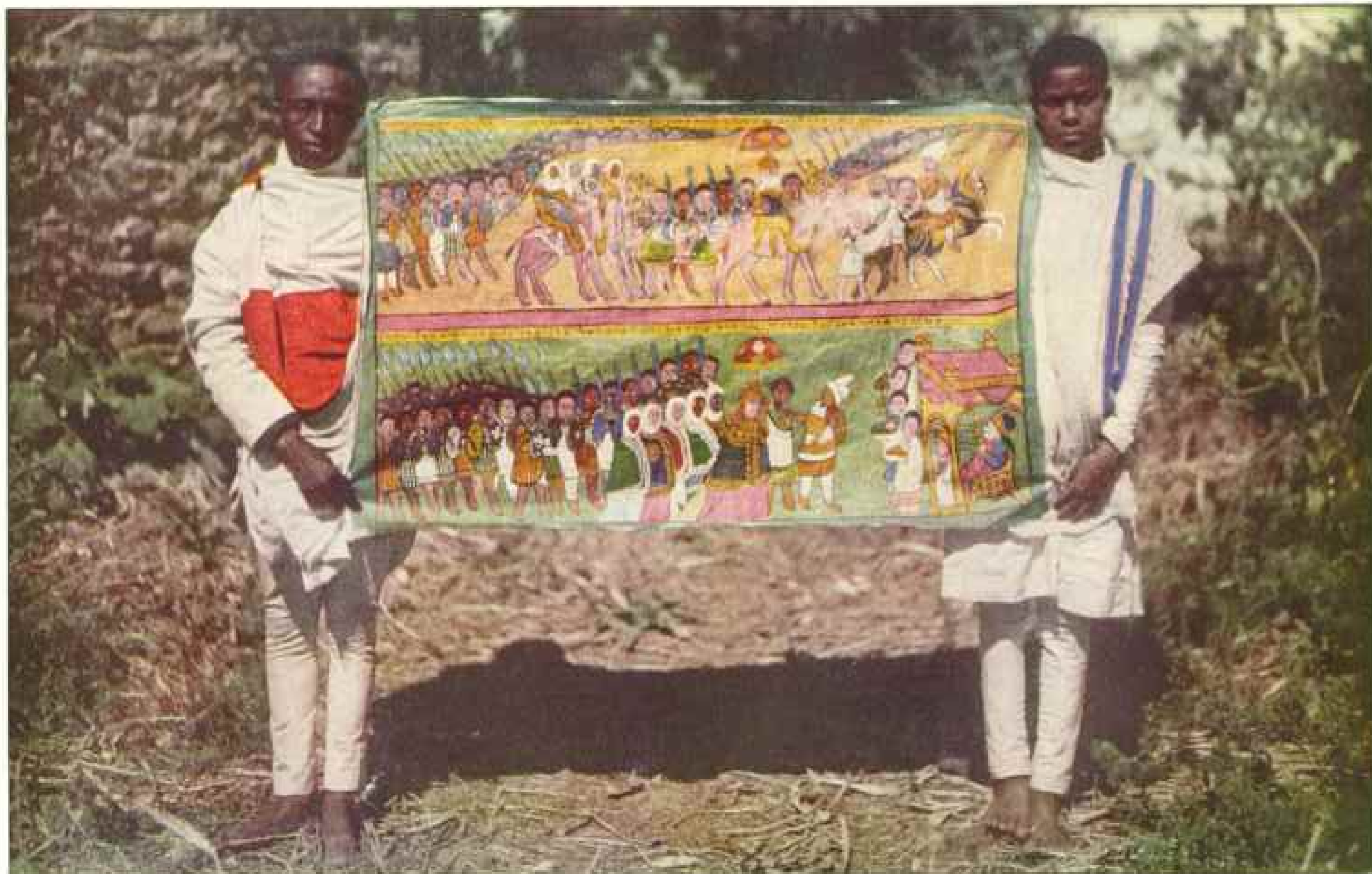


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RICH PLATEAU LANDS NORTH OF ADDIS ABABA

Natural Color Photograph by W. Robert Moore

Due to the different elevations in Ethiopia, it is possible to produce a variety of excellent crops in spite of the primitive methods of agriculture employed. Round *huts*, or native homes, with their low mud walls and peaked thatch roofs dot the landscape.



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Natural Color Photograph by W. Robert Moore

A MODERNISTIC BRUSH DEPICTS AN ANCIENT LEGEND

The crude painting on muslin exhibited by these Ethiopian boys portrays the supposed visit of Makeda, the Queen of Sheba, to King Solomon at Jerusalem, whither she had gone to see his courtly splendor and test him with difficult questions. The present ruler traces his ancestry to Menelik I, who is credited as being the son of Solomon and the Queen of Sheba.



GUN BEARERS TO AN ETHIOPIAN CHIEF

Nearly every man in Ethiopia carries a rifle. When the gun is carried covered, it belongs to the bearer's master; if uncovered, the bearer is the owner. Cartridges are a medium of exchange in the interior.



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Natural Color Photographs by W. Robert Moore

A STRINGED TRIO PRODUCES STRANGE HARMONY

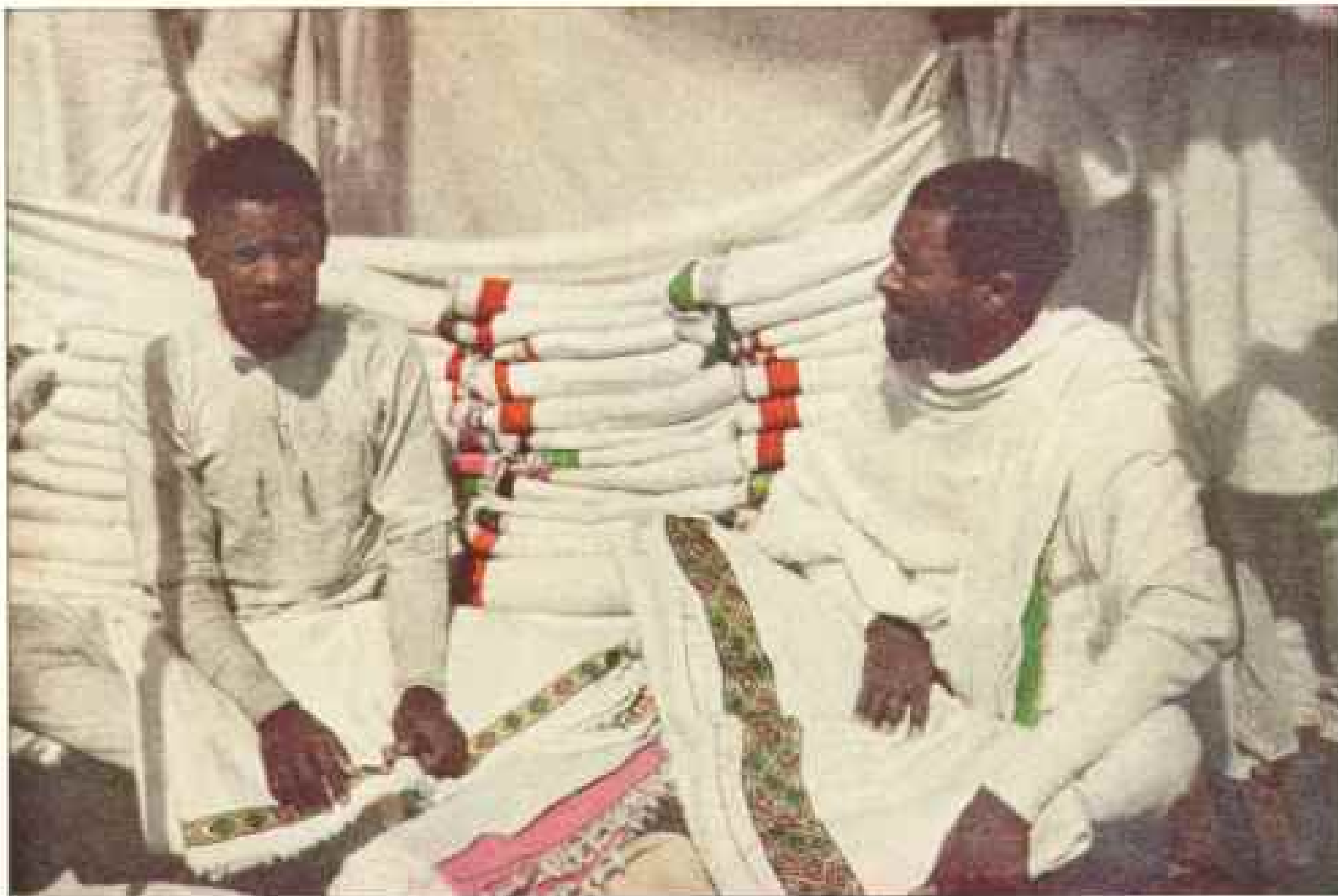
The musician in the center bows his single horsehair string, while the men on each side use a bit of leather to pick their several stringed instruments, which utilize enameled "soup plates" with hide stretched across them as sounding boxes.

PRESENT DAY SCENES IN THE WORLD'S OLDEST EMPIRE



THIS "DE LUXE SPORT ROADSTER" HAS ONLY A RUMBLE SEAT

Mule back is the popular means of transport throughout Ethiopia. The trappings of the mounts are always elaborate, and increase in value in the ratio of the rank and wealth of the owner (see, also, Color Plate XVI).



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Natural Color Photographs by W. Robert Moore

"CHAMMAS" ARE SOLD IN OPEN MARKET STALLS

Comparatively little cotton is grown in Ethiopia, so most of the cotton goods come from the United States, Japan and England. At one time the United States exported almost all the cotton sheeting used by the country for clothing.



COLOR CONTRASTS IN A SURVEY CARAVAN

Members of an American party which left Addis Ababa on October 28, 1930, to survey the Lake Tsana district preparatory to building a barrage across the Blue Nile, to regulate the flow of water through Western Ethiopia.



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Natural Color Photographs by W. Robert Moore

PRODUCTS WHICH SHOULD ATTRACT THE BUYER'S EYE

Examples of native basket weaving on sale in the Addis Ababa market.

Not infrequently huge packing cases containing Detroit's important contribution to our foreign trade are piled on the station platform, for American motor vehicles are in great favor in Ethiopia. American chewing gum is growing in popularity, too, but not yet in such large packing cases.

A ride of 20 minutes on mule- or horseback, or five minutes by motor, takes the arriving traveler to the main part of the city of the "New Flower."

On one of the two principal elevations of Addis Ababa is the ever-interesting market place. Here once stood the often-described great tree which served for generations as a gibbet. I have been told that in bygone days it sometimes bore as many as seven criminals, generally thieves, but of its ghastly fruit I never saw more than two hanging on one occasion. All of this was, of course, years ago. The famous tree has made way in recent years for a fine equestrian statue of the late Emperor Menelik (see Color Plate VIII).

Addis Ababa has good streets and no "across the railway tracks" quarter. It has also legations, consulates, hotels, many American motor cars, airplanes of sorts, and some presentable business buildings. The population approaches 200,000, of whom at least 5,000 are foreigners. There are 50 Americans in the country.

#### HAILE SELASSIE, ONCE RAS TAFARI, IS EVERY INCH AN EMPEROR

The other main elevation of Addis Ababa is crowned by the group of buildings which make up the Imperial Palace. The most imposing edifice on this designated "Hill of the Gebbi" is the Audience Hall of the Conquering Lion of the Tribe of Judah, constructed of stone and given its high-sounding title by order of the late Emperor Menelik.

Menelik pleased himself with the title of "Conquering Lion of the Tribe of Judah," which he claimed by virtue of his descent from that first Menelik who was born to Sheba after her visit to Solomon.

The present and recently crowned ruler of Ethiopia is perhaps better known by his former title of Ras Tafari Makonnen. He is a son of the late Ras Makonnen of Harar, the most powerful of Ethiopia's feudal princes in Menelik's time and the principal supporter of the latter as King of Kings.

The new Emperor is only 39 years old, slight of build, and of a decidedly Semitic cast of countenance, which is enhanced by a full beard and a mustache. His personality is particularly engaging and he is famous for his hospitality. French he speaks well; English, a little.\*

#### ANCIENT EMPIRE TO BE MODERNIZED

His Majesty has progressive ideas for modernizing the ancient and richly endowed empire over which he rules. This modernization, which he has frequently discussed with me, he hopes to carry on to an important extent with the advice and aid of citizens of the United States. He is a remarkable man in many ways. After 14 years of his friendship, I am firm in my belief that he is, from all viewpoints, a ruler of whom any country might well be proud.

From time to time Ethiopian students have been sent by their ruler to the United States for schooling. There are five in American colleges at present. Returned Ethiopian students have persuaded the Emperor to engage one of their former American professors as educational adviser to this government and he is already on the job.

Haile Selassie was an apprentice emperor for several years. He became Prince Regent in 1916. For several years after that time, in association with the Empress Zauditu (Judith) and the Fetawrari Hapta Giorgis, he was the practical ruler of the country. Judith, the comely but somewhat elderly daughter of Emperor Menelik II, died on April 2, 1930. Hapta Giorgis was Menelik's hearty old cavalry general and a famous Ethiopian, who would never consent to ride either in a railway train or a motor car. He died in December, 1926. I knew and admired both Judith and Hapta Giorgis.

The Emperor Menelik nominated a grandson, Lidj Yasu, as his successor. Yasu (Joseph) was never crowned, however, and was deposed in 1916 because of an alleged move on his part to substitute Islam for Christianity as the Ethiopian State religion. He is now a political prisoner, but apparently no longer important.

\* See, also, in the NATIONAL GEOGRAPHIC MAGAZINE, "A Caravan Journey Through Abyssinia," by Harry V. Harlan, June, 1925, and "Nature and Man in Ethiopia," by Wilfred H. Osgood, August, 1928.





Photograph by W. Robert Moore

#### ANCIENT TRANSPORT OF MODERN PRODUCTS

Corrugated iron is used as roofing on the modern buildings in Addis Ababa, and is carried into the interior on camel- and mule-back to replace the thatch on native *tukuls*, or huts.

Succession to the throne in Ethiopia is inherited as to family, but not necessarily as to individual. The strongest or most astute prince of the family rather than the one in most direct descent may, and often does, succeed to the imperial crown. Succession is, of course, usually limited to one of the royal line of Solomon, of which the present Emperor is an illustrious member.

#### FEUDAL BARONS STILL HAVE POWER

Primogeniture does not apply necessarily in Ethiopia in the royal family, with the nobility, or even among the families of lesser note. The feudal chieftains have been a law unto themselves, and up to at least recent times might have been compared in their activities to the great barons of Norman times. Their power has waned much of late, but it is doubtful even yet whether any prince might succeed to the imperial throne if he were opposed by a majority of them. Feudalism appears, however, under the new order in Ethiopia, to be doomed.

In these recent years of transition in Ethiopia I have seen many changes, polit-

ical, social, and otherwise. Not the least interesting of these changes may be observed in the attitude of increasing disfavor toward strong drink.

Even so great a man as the late Fetawrari Hapta Giorgis reserved as a special honor to a guest the offering of his famous and inspiring *tej* in a rhinoceros-horn cup, a beaker, as I remember it, of amazing capacity.

*Tej* and *talla* are native beverages to which much alcoholic vigor is imparted by fermented honey. *Tej*, the national Ethiopian drink, is essentially a home brew, made usually by the wife, daughters, or servants of the household.

Many of the leading families pride themselves upon *tej* made after old recipes handed down from generation to generation. That made in the household of Hapta Giorgis was famous for its quality. The old warrior's favorite garden of the *geshu* plant, the leaves of which are used in *tej* fermentation, may still be seen in the grounds of the American Legation in Addis Ababa. It is now the home of a pair or two of hyenas.



Photograph by W. Robert Maure.

MORNING CUSTOMERS AT THE OUTDOOR GRAIN AND FLOUR STALLS IN ADDIS ABABA. Among the grains for sale is *teff*, which is much used in making flat, brown slabs of bread having the taste and consistency of soggy, sour pancake.

Other sorts of brewed and distilled liquors are made in Ethiopian households, but there is as yet little commercialized form of manufacture. Imported liquors are favored by some, particularly by the Ethiopian soldier, who appears to dote on the more furious joys of imported Greek brandy, which is reasonably cheap and unreasonably potent. However, the upper classes of Ethiopians of the newer generation are becoming more and more temperate in their use of alcohol.

Ras Kassa, second in rank only to the Emperor as a member of the royal line of Solomon, has even considered the proposal of temperance laws for Ethiopia. His Highness not long ago asked the American Legation to obtain for him from the United States copies of some of our prohibition regulations.

The Ethiopian in general is not a user of tobacco. He neither smokes nor chews the weed. Smoking in the presence of most Ethiopians is not good form, as I learned many years ago. I have been told

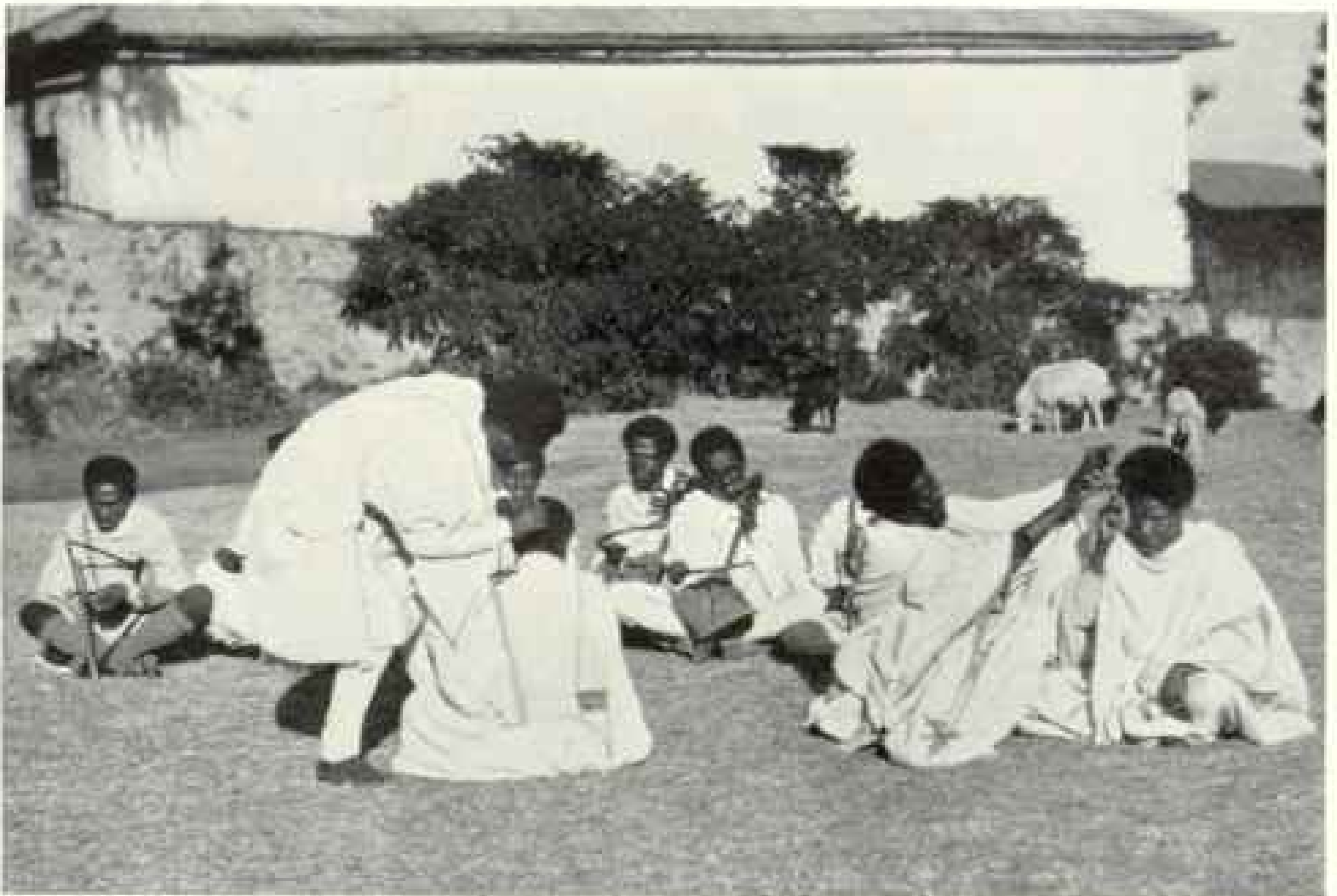
that as recently as the first half of the last century there were Ethiopian rulers who so objected to tobacco that they ordered the mutilation of the lips of any subject caught smoking.

Foreign manufacturers of cigarettes continue in their efforts to cultivate an Ethiopian market, but thus far without signal success.

In my social calls upon Ethiopian families I have been much impressed with the number of culinary uses for red pepper of a superlatively scarring effect upon the tongue and "innards" of the uninitiated. In my opinion, tabasco sauce would be regarded in Ethiopia as a rather mild condiment.

#### RAW-MEAT EATING IS LARGELY CEREMONIAL

Ethiopia produces many fine beef cattle and the people are great meat eaters. They have what might be called a ceremonial custom of eating a bit of raw beef as a sort of *hors d'œuvre*. The practice



Photograph by W. Robert Moore

#### HAIR-CUTTING TO HARMONY

Perhaps the music makes the ordeal less trying for the woman who is having the back of her head shaved with a razor blade and a piece of broken bottle. Some women wear their hair in high pompadours, some shaved in back, and some plaited in various styles, depending upon their position or the racial group to which they belong (see, also, page 729).

apparently has led many an amateur, as well as professional writer, in search of the sensational to devote much space to an allegedly deep-rooted taste of the Ethiopian for his beef raw, warm and quivering, as it comes from the freshly butchered animal. Such writers have even been known to stage raw-meat feasts for photographic purposes.

I cannot corroborate their statements from my own somewhat unusual opportunities for observation of Ethiopian appetite. Here, as in other countries, only an occasional palate fancies the taste of raw meat. I remember having seen a "raw Hamburger sandwich" consumed with apparent gusto both in Europe and America. The Ethiopian who likes a bit of meat raw doesn't chop it up with onions, etc., but he often passes the morsel through a bowl of sauce made principally of red pepper and oil.

Ethiopians tell me that the opening of a ceremonial feast with bits of raw meat is a tribute to tradition coming down from the times when the country was nearly en-

gulfed by the Mohammedan invasion of several centuries ago. Ethiopian soldiers, hard pressed by the enemy, hid in the forests, where they could not make fires for fear of betrayal by the smoke. Since they could not cook their meat, it was, perforce, eaten raw. At great feasts, particularly among the soldiers, a first course of raw meat is often served as a historical tribute to those perilous early times.

#### LITIGATION IS A FAVORITE OUTDOOR SPORT

Ethiopians appear to enjoy litigation, whether friendly or otherwise, and it is more often friendly than otherwise. One of the important centers of the market place in Addis Ababa and in other large towns is the courthouse. It consists usually of a sizable wooden booth, with benches on three sides for the judges and their friends. The fourth side is entirely open to the market ground. In front of this open side gather those who have complaints to be heard. They are given all the time they desire to argue their own cases, for time is of small import in Ethiopia.



Photograph by Salisbury from Galloway

#### THUS DAVID DANCED BEFORE THE ARK

In their services the Coptic priests often encircle the church dancing, or dance before it, like the Jews of old. Music is provided by enormous drums, beaten with the flat of the hand and by the shaking of small brass sistras similar to those used by Egyptian priests in the Temple of Isis. The long wands are praying sticks.

When I inquired which were the lawyers, I was told that in Ethiopia every man is his own lawyer, if he desires. Individuals may, by the custom of the country, call, "in the name of the Emperor," upon any passer-by to sit in judgment on their differences. The opposing parties then proceed to argue. In their interest and excitement they often rise to somewhat startling vocal and physical efforts. Their enjoyment is obvious.

The extemporized judge eventually gives his decision, which may or may not be accepted. If it is not acceptable, the case is carried to the Government courts. Here justice is dispensed much less expeditiously and, of course, more expensively.

Following the trails of Ethiopia, I have frequently come across these impromptu roadside courts. They are both interesting and amusing, to judge from the expressions of the native onlookers, who can follow the argument and exchange of Amharic imprecations without an interpreter's aid. For participants as well as for onlookers, these spirited court proceedings seem to

have almost the status of a national sport of the masses, and the trials are popular social events.

#### DEBTORS LED ABOUT ON A CHAIN ENJOY THEIR LOT

Criminal cases, of course, are tried by officially constituted judges. They are usually brief and to the point. Theft is one of the more heinous crimes. According to the old Ethiopian law, a first conviction results in the amputation of the left hand. A second costs the thief his right foot, a third the right hand, and a fourth the remaining foot. These penalties have been much softened under the rule of the present sovereign, but they are still legal.

Cases between foreigners are tried in the consular court of the defendant. Cases between foreigners and Ethiopians are tried in a special court, in which the consul of the foreigner sits with the Ethiopian judge. European lawyers practice in the consular courts and in this special Ethiopian court. Justice becomes more expensive.



Photograph by W. Robert Moore

#### ETHIOPIAN MUSIC HATH CHARMS

Of the various types of musical instruments of the Empire, this large harp produces the most pleasing notes (see, also, Color Plates X and XIV).

If a man owes you money in Ethiopia you can sometimes, upon proof of your case, get him delivered into your hands with a chain riveted about his ankle, wrist, or waist, according to your choice (p. 713).

To see an Ethiopian leading his debtor about on a chain is at first rather offensive to the occidental mind. However, viewpoint changes when it is observed that the two seem to derive considerable social enjoyment out of the association.

Our cook in the Legation not long ago obtained custody of a friend who owed him money. During the performance of the cook's duties in our kitchen his debtor's chain was fastened to a post outside the

door, so that companionship and conversation might continue without interruption. Incidentally, the debtor had to be fed by the creditor—with *our* food! In self-interest we had to take appropriate steps to discontinue the association. Neither the cook nor the debtor was happy about our interference.

The quaint custom of getting one's debtors legally on a chain, as one would have a dog on a leash, is great material for the foreign sensation-monger who wants to prove photographically that "slavery" is rampant in Ethiopia. Such evidence proves nothing more heinous than would photographs of ball-and-chain gangs in the United States.

After leaving the market place in Addis Ababa, we pass near the Cathedral of St. George, built in commemoration of the battle of Adowa, in 1896, and named after the patron saint of Ethiopia. This church, one of the largest in

Ethiopia, displays typical architecture in its seven-cornered form, with a conical roof ending in a point decorated with an ornate gilded cross.

Ethiopia claims to be the oldest Christian sovereign State. The teachings of Christ were introduced about A. D. 330 by two shipwrecked Phœnician youths, Frumentius and Ædesius. The former was in time consecrated by the head of the Coptic Church in Alexandria as Bishop of Axum. He comes down to posterity as Saint Frumentius.

Through the centuries since, this close relation with the Coptic Church of Egypt has continued. The Abuna, head of the

Ethiopian State Church, is always a Coptic monk nominated by the Patriarch at Alexandria upon request of the Ethiopian monarch. A substantial fee is paid by the latter for this service.

Some of these *abunas* have exercised great temporal influence—even to the extent, not so long ago, of excommunicating an Ethiopian ruler. This act was more potent than arms. It thoroughly defeated the allegedly recalcitrant one. The great temporal power of the Ethiopian Church, usually exerted passively rather than actively, is rapidly disappearing, as the old feudal form of government weakens under the assault of modernism; yet even to-day neither emperor nor feudal chieftain finds it wise to oppose the church.

The intense form of Ethiopian Christianity still retains a deep hold on the people. Venerable Abuna Matthew, now dead, once told me, "My Ethiopians are real Christians; they are Monophysite Christians." Explaining that he and his flock were the select brand of Christians who consider Christ as a single nature, he added, "The human and the divine in Him are one." This tenet is, perhaps, the outstanding difference between members of this section of the old Greek Church and other Christians.

Next in command to the Abuna is a native Ethiopian chief priest whose title is *Itchigué*. He is usually appointed from the headship of the very holy monastery at Debra Libanos (Mount Lebanon), Ethiopia.



Photograph by W. Robert Moore

#### BY THEIR COIFFURES YOU SHALL KNOW THEM

The closely plaited hair of this young woman, who has just come to market, identifies her as a Galla. Her people form some two-thirds of the population of Ethiopia (see, also, page 711).

The present *itchigué*, who is landlord of the American Legation, usually addresses his rent correspondence to me by a letter beginning: "From Gabré Menfes Kedus, elect by the will of the Father, the Son and the Holy Ghost, successor to the seat of Takla Haimanot, Son of St. Mark, Servant and Apostle of our Lord Jesus Christ, Itchigué and Bishop of Debra Libanos, Bishop Sawiros of the Empire of Ethiopia." That is his full title.

Before they became Christians, the ruling classes of Ethiopians were adherents of Judaism. Their present church ceremonial retains many traces of that great and venerable religion (see page 727).



Photograph by W. Robert Moore

#### THREE MUSKETEERS OF ETHIOPIA

Observers estimate that one-fifth of the total ruling, or Christian, population of Ethiopia is officially a part of the State Church organization. The monks number about 20,000 and nuns about 5,000. The remainder are mainly priests, deacons, or chanters. A single large church may have as many as 300 priests. There are approximately 15,000 recognized Christian State churches in the empire. There is also an Ethiopian church and monastery in Jerusalem.\*

In lieu of regular pay from the Government, a priest may be allotted a piece of land. Unless he can find parishioners sufficiently devoted to plow and cultivate this land for him, he does it himself. He must eat. It is not unusual to see an Ethiopian priest, with his gown tucked up, patiently following a wooden plow drawn by a pair of oxen or perhaps one ox and a donkey.

After the professions of priest and soldier, agriculture is the principal occupation in Ethiopia. The country is very fertile, though methods of cultivation are still primitive. The Government does not per-

mit the free exportation of the main crop of grains. This regulation, presumably, is designed to keep down the cost of living; at least it has that effect.

#### CIVET CATS OFFER PROFIT AND DIVERSION TO STOCK RAISERS

In addition to the ordinary kinds of stock, Ethiopian farmers in parts of the country raise civet cats for commercial purposes. From these animals, specially fed in small pens, they obtain a liquid musk marketable to French and American perfumers at \$2 an ounce.

The civet cat is usually of a petulant disposition and objects violently to having his head placed in a crude iron contrivance while the civet is pressed from the glands into a spoon. The liquid civet is stored in bullock horns for export.

The chase is also a commercialized industry in Ethiopia, and naturally ivory heads the list of its products. Veteran hunters and traders say that most of the ivory passing through Addis Ababa comes from elephant herds in the western and southwestern parts of the country. Some is smuggled in from British East Africa, also from the Sudan, but this is mainly immature or from female elephants. The

\* See "Color Records from the Changing Life of the Holy City," by Maynard Owen Williams, in the NATIONAL GEOGRAPHIC MAGAZINE for December, 1927.



Photograph by W. Robert Moore

#### THE EMPIRE ALSO HAS ITS BOY SCOUTS

possession of such ivory is illicit under the strict game laws of the adjoining Anglo-African territory, and when tusks are found there they are confiscated by the authorities.

According to local gossips, many fine tusks are buried in the elephant country by native hunters to await a favorable time to get them secretly out of Ethiopia and avoid payment of the Emperor's royalty of a large share of all ivory obtained. In the warehouses of Arabs in Djibouti and Aden I have often recognized, by earth stains on tusks, ivory which has been thus buried.

#### PURSUIT OF STRAY ELEPHANTS INVOLVES INTERNATIONAL COMPLICATIONS

The pursuit of ivory often leads to frontier difficulties with European neighbors. A certain foreign legation complained to the Emperor about an old feudal chieftain who had gone into their territory for his ivory. This old fellow was called to Addis Ababa for inquiry by the central government into his alleged offense.

He admitted that possibly there had been a frontier intrusion. "But," he argued, "I was only going after Ethiopian elephants which had wandered across the frontier,

I go after my bullock or my mule which strays into the property of another. Why shouldn't I also go after my strayed elephants, which wander even more than do bullocks and mules?"

Many a leopard involuntarily contributes his skin to American feminine fashion. As many as 100,000 of these spotted skins of Ethiopian origin have gone to American furriers in a single year!

Also monkey furs are an item of profitable trade. A shy member of the monkey tribe, called the *guereza*, lives in the trees of the Ethiopian highlands. Their long, silky, black-and-white fur was worn by the Ethiopians as capes until Parisian dress-makers fancied it as a trimming for feminine finery. Then the monkey-fur vogue spread to America and other countries. A good skin costs locally the equivalent of an American dollar. The resulting demand has seriously threatened the extermination of these poor animals, too attractively clothed by Nature.

The King of Kings, a humane and far-seeing ruler, has in late years prohibited the killing of *guerezas*; but, as an old Italian friend of mine in more remote southwestern Ethiopia recently wrote, "still they kills 'em."





Photograph by Alfred M. Bailey

#### COPTIC PRIESTS DISPLAY RELICS OF A FAMOUS WARRIOR AT DEBRA WERK

They are holding the crown, slippers, shield, and spear that formerly belonged to the warlike ruler Takla Hamanot, once the most powerful man in northern Ethiopia (see "Nature and Man in Ethiopia," in the NATIONAL GEOGRAPHIC MAGAZINE for August, 1928). The building in the background is an old church. Many such edifices throughout the country are veritable store-houses of historical relics of early days.

Lately the Ethiopian Government has decided to protect its wild game by requiring the taking out of licenses and payment of hunters' fees. Restrictions will grow. The fees are not high, but they will be a deterrent to the kind of slaughter of former days.

The most costly part of hunting in Ethiopia is not, however, the fee for killing a wild animal. A goat or a bullock accidentally shot costs much more even than an elephant, if the bereaved farmer has his way—and the killer is a foreigner.

#### CHAPERON TO MISSOURI MULES BECOMES AN IVORY HUNTER

One of the old-time ivory hunters and traders in Ethiopia is an American who was once upon a time a blacksmith "back in the States." His first trip abroad was as escort to a shipload of Missouri mules bound for Liverpool. There he heard of a country "wheah a black man is jes' ez good ez a white man." He came to see it. He is still here, much advanced in

years, but with a Vandyke beard, auriferous teeth, a fair amount of wealth, a regal poise, and possibly more than one help-mate.

In recent years Ethiopia has been the magnet for many ambitious Afro-Americans. Many have come; a few have remained. Fewer still have prospered; but there is always a way of extracting at least small change from an American diplomatic or consular officer to carry on while hope springs eternal.

One who came not long ago had heard that there was plenty of gold here. "But," he reported to me after some desultory and unprofitable prospecting, "these people seem just as fond of gold as they do at home. They don't give a man a chance."

The true Ethiopian is often decidedly dark complexioned and his hair is frequently somewhat more than curly, but he is not a negro. Delvers in ethnological research and traditional history may be found who agree with the Ethiopians' characterization of themselves as the result



Photograph by Harry V. Harlan

#### THE DEVIL IN A CHURCH AT ANKOBER

The one-time capital of the Kingdom of Shoa, 90 miles northeast of Addis Ababa, has two churches, the most interesting of which is probably from 80 to 100 years old. It is decorated in the gaudiest of modern Ethiopian paintings, representing scenes from the Bible and Ethiopian history (see, also, illustration, page 734). The colors are the brightest that can be obtained from aniline dyes.

of graftings of Arabic and Jewish blood upon original non-negro tribes of north-eastern Africa. I find many of the true Ethiopians to have distinct characteristics of these two great branches of the Semitic race.

Of Hebraic settlement in Ethiopia, the Falasha, or so-called "Black Jews," are a religious remnant. The exact origin of this community, residing just north of Lake Tsana, in Ethiopia, is obscured in mystery. They are as dark as the Ethiopians, but preserve a form of the Jewish faith which probably preceded Christianity as the State religion of the Empire. An organization sponsored by prominent American Hebrews is interested in uplifting the Falasha from their centuries-old isolation.

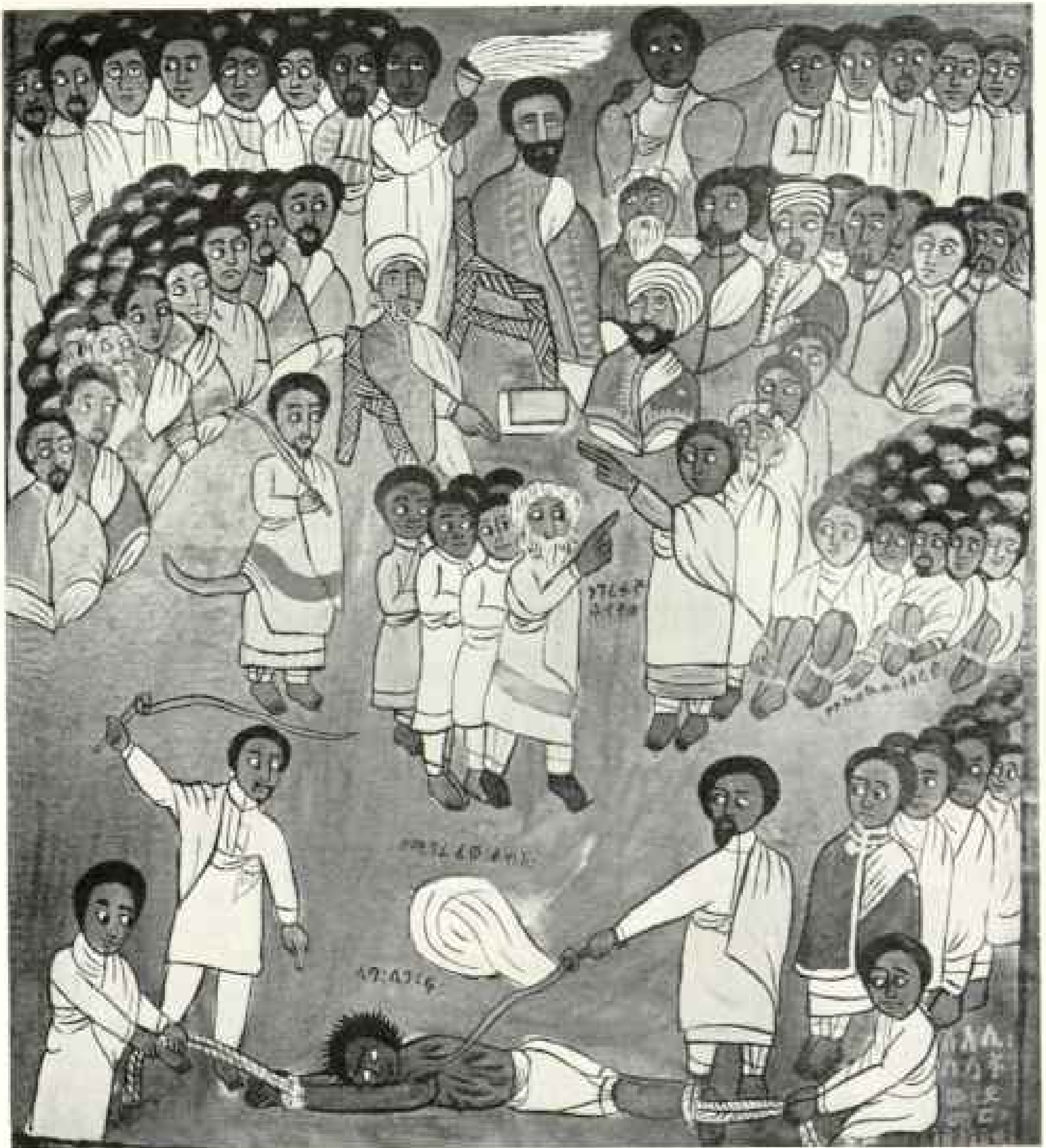
#### SCIENCE MAY READ FORGOTTEN HISTORY IN ETHIOPIA

In anthropology and archeology Ethiopia offers much of fascinating interest.

That the ancient Ethiopians were chisellers and hewers of stone, the close relation of ancient Ethiopia with Egypt, Palestine, Arabia, and other geographical units of the Red Sea area seems to make reasonably certain. Earlier scientific investigation has been handicapped by the heretofore firmly rooted Ethiopian suspicion of any foreign curiosity. This situation is now much improved.

Incidentally, northern Ethiopia, where ancient history left most of its evidence, is not so accessible as the part of the Empire centering around Addis Ababa. Approach from the north through the Italian colony of Eritrea is good as far as the frontier, for the Italians have built fine roads all over their colony, which actually is the northern tip of the Ethiopian plateau proper.

Massawa, on the Red Sea, is the Eritrean port. From it a railway runs up in the mountains to Asmara, the capital.



© Alex Sticker

## AN ETHIOPIAN ARTIST DEPICTS HIS RULER HOLDING COURT

In the background attendants flank the king. In the right center stand priests, who read the law bearing on the cases presented by the man in the center. In the right foreground are prisoners ready for the court. In the immediate foreground a malefactor is being flogged.

From Asmara I have traveled on a beautiful motor road due south to the Ethiopian frontier opposite Adowa.

This highway passes Senafé, the place where the notable Napier expedition (1867-8) first reached the plateau after climbing up from the Red Sea. Here one may see a graveyard wherein are buried several British soldiers, including a colonel whose grave marker indicates that he was a V. C. The historic little burial ground

is now kept in order through the fine courtesy of the officers of an Italian mountain artillery post near by (page 744).

The Napier expedition may be regarded as the real beginning of modern Ethiopia's contact with the outside world. King Theodore of Ethiopia imprudently imprisoned a British consul. British emissaries sent to investigate and remonstrate were also seized and imprisoned by the willful monarch.



#### ETHIOPIA IS THE HOME OF COFFEE

Arab travelers originally found coffee in the province of Kafa (see map, page 702) and took some back to Arabia. From there it recrossed the Red Sea to Harar, to-day the center of production of cultivated coffee in the Empire (see, also, text, page 701).



Photographs by Addison E. Southard

#### THE GOVERNMENT COLLECTS ITS EXPORT DUTY IN KIND

The Ethiopians are not great coffee drinkers, so most of the superior plantation crop finds its way to foreign tables, while the wild crop, which grows in the west and southwest, finds a ready market in Egypt. Coffee spread on the ground to dry at the Ethiopian customhouse in Harar.



Photograph by Alfred M. Bailey

#### CROOKED-STICK PLOWING IS DOOMED TO DISAPPEAR

Much of Ethiopia's soil is so fertile that, even with such crude methods and implements, it yields abundantly. Foreigners have introduced some modern machinery, however, and the Government is also taking active interest in improved agriculture.

There resulted the British expedition under Lord Napier, who, assisted and sponsored by an Ethiopian faction opposed to Theodore, invaded the country as far as Magdala, where Theodore, defeated, committed suicide.

The British expedition then withdrew and left their Ethiopian allies to crown the rival Emperor, Johannes, as successor to Theodore.

#### ETHIOPIA HAS NEVER BEEN CONQUERED

The united Ethiopians have never been defeated in a war. The only foreign invasion of their country which did not come to grief was that led by Lord Napier. His success was based to an important extent upon the large faction in Ethiopia which allied itself with him as a means of defeating Theodore.

Lord Napier took back with him to England one of the Ethiopian royal crowns as well as priceless manuscripts and related material. Many of these relics are in the British Museum and are of intense interest to Ethiopian scholars. A gracious British gesture of recent years was the re-

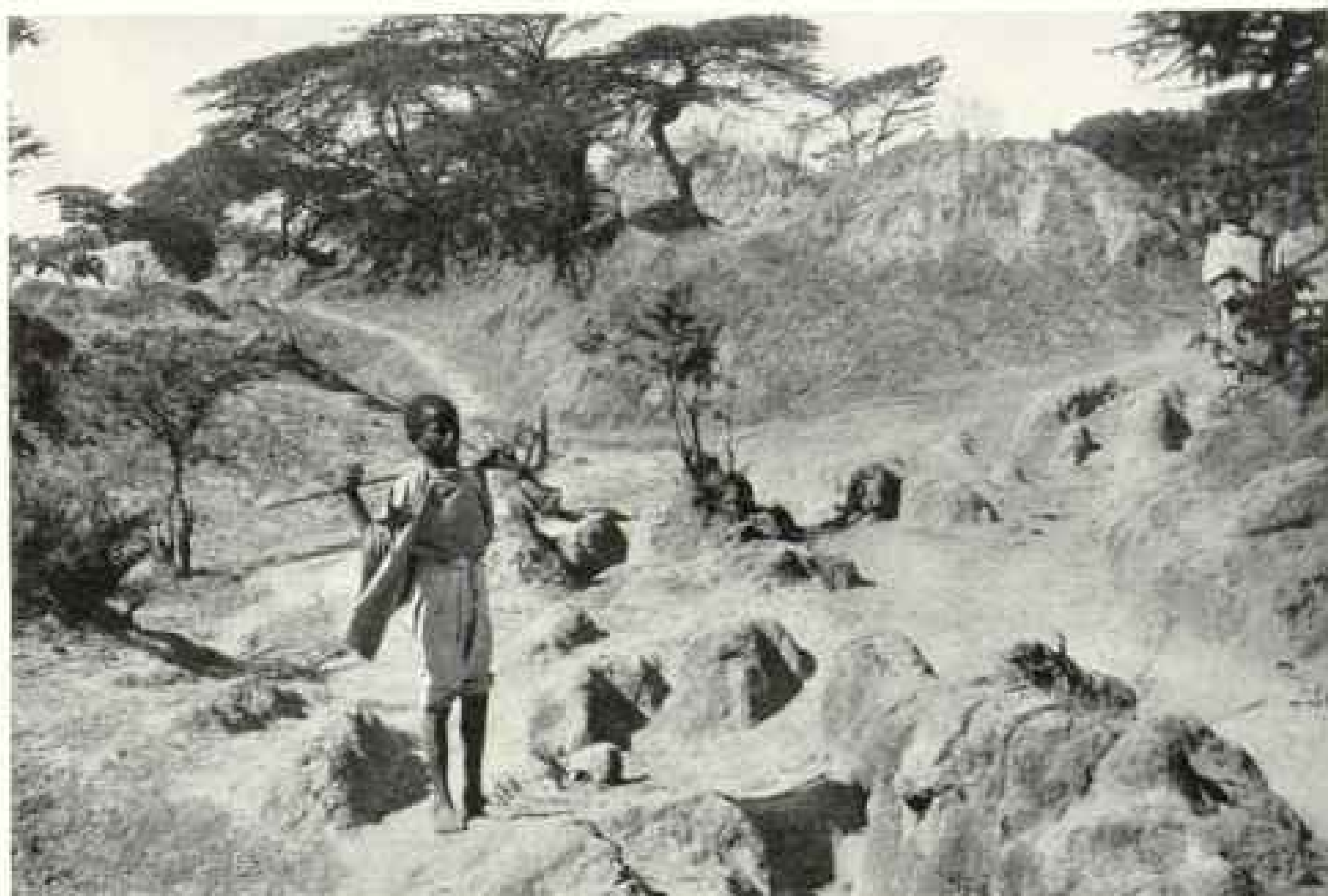
turn to Ethiopia of Theodore's throne and crown.

Egyptian expeditions sent by Ismail Pasha, the Khedive, to extend his frontiers at Ethiopian expense met with defeat in territory which is now Eritrea. I have traversed the battle ground of 1876, where the Egyptians were defeated by the Ethiopians. A member of the Egyptian commander's staff was Loring Pasha, otherwise the Confederate veteran W. W. Loring, who, after the Civil War, took a commission in the Khedive's army.

The natives of Eritrea, mostly Monophysite Christians of the true Ethiopian type, look to Ethiopia as their motherland. Many of them, after education in the excellent Italian schools of Eritrea, come south and take service under the Ethiopian Government.

#### ETHIOPIA IS A MEMBER OF THE LEAGUE OF NATIONS

Ethiopia is a member of the League of Nations. It has diplomatic or consular representation either to or from many of the important governments of the world.



Photograph by Harry V. Hatlan

#### AN ETHIOPIAN ARGUMENT FOR BETTER ROADS

The Empire's highways include 50 miles of macadamized streets, 1,000 miles of miscellaneous roads, 1,000 miles of caravan tracks, and passages over grass fields; but exploitation of the country's natural resources demands a better transport system, and to this end plans are afoot for the construction of highways, especially one to link the capital with the fertile provinces in the west and southwest.

Notwithstanding the reputation of the Ethiopians as a mountaineer warrior race, they appreciate the value of peace. The Government has adhered to the Kellogg Pact. It seeks progress, and modernization of its feudal system of official and social organization. While there is a strong national feeling that Ethiopia should be for the Ethiopians, there is also an appreciation that there is much for them to learn from Europe and America.

The Ethiopian Government is still in form that of an absolute monarchy. "L'état, c'est moi" may quite accurately be remarked by the present Emperor; but Haile Selassie is a broad-minded and progressive ruler. He wants his people to participate in the Government and is taking educational and other steps to that end. I have personal knowledge of his plans to draw and promulgate a constitution as soon as that work can be properly done and adapted to a country and people not yet out of the feudal stage, in which they apparently have for centuries been contented.

The stirrings of republicanism have not yet developed in Ethiopia, nor is there yet any organized internal political opposition to the present Government. The Emperor's intentions for governmental reform are, therefore, entirely voluntary and from the innate goodness of his heart and mind.

#### HAILE SELASSIE PRIZES AMERICAN FRIENDSHIP

An outstanding impression which I have of this country during the 14 years I have known it first hand is the feeling of friendship and admiration for the United States and its citizens freely expressed by all classes of the dominating Ethiopian element of the population. American visitors to this country, who fortunately are becoming more frequent, are received with courtesy and cordiality.

A very frequent remark of His Imperial Majesty to me is, "We want closer relations with America; we want more Americans to visit us; we want American

assistance in the development of our country." A recent step in this direction is the appointment of an American financial adviser.

The Ethiopians are convinced, and have convinced me since I have lived and traveled in their country, that while modern Ethiopia may not come to be, with respect to our world, what ancient Ethiopia was to the world of Solomon, it does have geographical position and exceptional natural

resources which entitle it definitely to a place in the international spotlight.

My friend the Ethiopian Minister of Foreign Affairs says: "We are the only purely native-governed State in Africa. We have a culture as old as any, with our own literature and our own grammatical language. Our country has the longest continuous history of stable sovereignty in the world."

## CORONATION DAYS IN ADDIS ABABA

BY W. ROBERT MOORE

*Staff Photographer, National Geographic Society*

FOR years Ethiopia had high position in the list of special places, selected in my map wanderings at home, which I secretly hoped to visit; yet it seemed highly improbable that I should ever have my hopes fulfilled, when, out in Bangkok, Siam, a fairy waved her wand in the form of a radiogram from the National Geographic Society giving me the assignment of visiting Ethiopia to make a natural-color record of the coronation ceremonies.

I read unbelievably, faltered, and within two weeks had temporarily deserted my family and was on my way to Singapore to embark for Djibouti *en route* to Addis Ababa.

Djibouti, on the French Somali coast, at the west end of the Gulf of Aden, where we disembarked early one morning, is the chief gateway to Ethiopia. After a wait of three days in this sweltering port I proceeded by train to the capital.

### DIPLOMATS DON GOLD BRAID AND PLUMES.

Our train stopped for a time a short distance outside the city to allow the diplomatic representatives to plunge into the depths of their trunks in the luggage van, so that when they emerged from their cars at the station they appeared in all the gold braid, plumes, and glittering medals of full official dress; for as the various delegations arrived at the capital they were greeted with official honors, in a brief reception at the new railway station, by the Crown Prince and high officials. Then they were escorted by a troop of cavalry to their respective legations or to the homes

they were to occupy during their visit. Upon the arrival of the representatives of the three countries having neighboring colonies—France, England, and Italy—His Majesty the Emperor accorded them a special reception, he being present at the station to welcome them to the city.

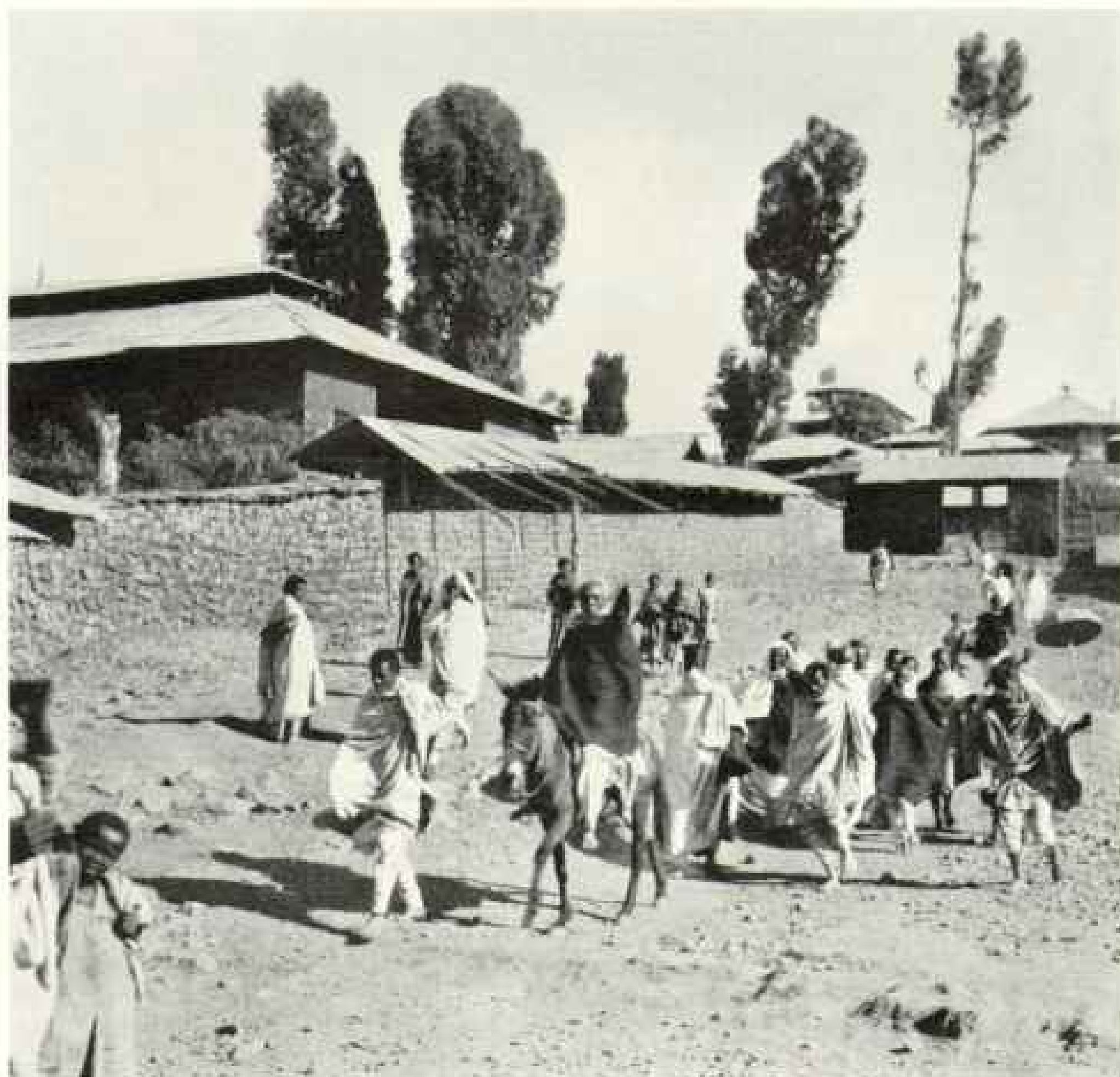
After a day or two in Addis Ababa, I attached unto myself a young man, "Friday," to act as interpreter and camera-bearer. His arms proved to be somewhat stronger than his linguistic abilities or his influence in getting various subjects to pose before my camera lens.

But, except for getting himself in police court twice in as many days—once for arising while it was yet dark, in order to come to my hotel on a morning when I was to photograph some priests at early mass, and again for quarreling over changing a bill that I had given him to buy some clean clothes—Friday served me well.

For my own comfort, I considered hiring a mule to ride. But that would have necessitated one or more gun-bearers to make my retinue complete in the sight of the Ethiopians, and, as I had no gun, I had to forego that pleasure and luxury and walk as much as possible to avoid the exorbitant taxi fares.

The taxi men had such a keen desire to let the coronation visitors cover the last payments and the year's overhead expenses on their cars that the Emperor eventually had to issue a bulletin stating the maximum rates that could be charged between various points in the city.

The hotels, too, were pressed to the limit for accommodations, and prices mounted.



Photograph by Salisbury from Galloway

#### FOLLOWING THE CUSTOM OF THE COUNTRY

No man of importance would think of riding abroad without his retinue trailing along on foot, the number of followers depending upon his rank and station (see, also, illustration, page 740).

But it is not every day that a country may have a coronation.

#### "NEW FLOWER" IN HOLIDAY MOOD

For the period of the festivities, Addis Ababa, "New Flower," was in full bloom and in a cheerful holiday mood. Many of the streets had been freshly asphalted or metaled; too many, perhaps, were lined on either side with tall eucalyptus picket fences to conceal the native *tukuls* (huts). But everywhere quantities of bunting and flags lent it a colorful air against the general backdrop of green foliage and beneath the clear sky of rare November blue.

Over the main routes that the Emperor was to pass, several great triumphal arches

had been erected. Workmen were still busily engaged in the final completion of the coronation monument, which was being erected on a newly built triangle in the center of the city (see page 700).

On the day preceding the coronation, in the circle in front of St. George's Cathedral, the Emperor, in the presence of diplomatic groups and thousands of his own people, attended the unveiling of the gilded statue portraying his venerable predecessor, Menelik II (see page 687 and Color Plate VIII), and paid tribute to his illustrious great-uncle, whose strict justice and whose iron hand had so effectively quieted the internal strife and had brought a measurable extent of unity in the land.





Photograph by Addison E. Southard

#### THE ESCORT KEEPS UP WITH THE MULES

The stirrups, being round and small, are held with the big toe only. For ordinary travel, Ethiopians prefer mules to horses, the latter being used by the upper classes chiefly in time of war. The mules are excellent saddle animals, smooth-gaited, sure-footed; many are also fast walkers, even over rough ground (see, also, text, page 700, and illustration, page 739).

It was Menelik, too, who successfully checked the attempts of foreign aggression, and also sought to bring his country, which had been so long isolated, into touch with the progress of the world.

Two days later, in the quiet of the beautiful mausoleum on Palace Hill, while the priests moved about swinging silver-belled censers of fragrant incense, the diplomatic representatives laid wreaths before the tomb of Menelik (see Color Plate X and illustration, page 688) and that of his daughter, the late Empress Zauditu.

As the Ethiopians have maintained their independence through the centuries, so, too, they have been able to maintain their chosen religion, often at the point of the spear. "An island of Christians in a sea of pagans" is the expression once used by Menelik in referring to his country in a letter to the European powers.

#### THE DAWN OF THE CORONATION CEREMONY

As Sunday, November 2, dawned clear, all in Addis Ababa began to prepare for

the impressive event of the morning. The Emperor and Empress had already spent the hours since the night previous in prayer and meditation with the priests in St. George's Cathedral.

#### THE THRONE ROOM IS A SCENE OF SPLENDOR

Through the early morning the chanting of praises continued, accompanied by the dancing of the priests with their great pulsating drums, the whole suggestive of the ancient Jewish rites which were in use at the time when King David danced before the Ark of the Covenant (see page 727).

The ritualistic ceremonies of the coronation were performed in a large auditorium, immediately adjacent to the west side of the Cathedral, which had been especially constructed for the occasion to provide adequately for the seating of the 700 officials and guests.

The side walls of the building were of white cloth, decorated only at the pillars with clusters of small flags; the lofty ceiling was formed of orange-yellow cloth



© Alex Stücker

## A SERVICE OF LOVE

A pomade of animal fat or rancid butter not only aids in the fashioning of modish coiffures, but also serves to hamper the movements of tiny residents in the hair. A silver or wooden pin is usually worn both as ornament and as "scratcher," but in this group a monkey is giving even better service.

caught in several drapes, and across the entire front rich, gold-shot, red curtains fell in loose folds to separate the inner sanctuary from the main portion of the hall.

Some distance apart, and about one-third of the length of the room from the sanctuary, stood the wide thrones of the Emperor and the Empress, beneath gold-posted canopies surmounted by large golden crowns. The throne at the left, designated for the Emperor, was decorated in scarlet and gold, while that at the right, for Her Majesty, was covered in blue and gold.

On each side of the room, facing the open space between the thrones and the scarlet-covered tables before the sanctuary, upon which reposed the royal insignia, sat the Ethiopian Princes and nobles, accompanied by the diplomatic representatives in a kaleidoscopic display of full official dress. The space back of the thrones was reserved for the other Ethiopian dignitaries and foreign guests.

Long shafts of early morning sunlight streaming through the tall windows and

diffusing through the white side walls lifted out the rich colors of the hangings, the thick floor rugs, and the resplendent costumes, converting the scene into a spectacle of unmatched prismatic beauty. The inner sanctuary, behind the draped red curtains, was suffused with a golden-red light.

Shortly after 7:30 o'clock, His Imperial Majesty, attired in white silk communion robes, entered the ceremonial hall from the church, with an escort of aides and the clergy, and took his place upon the throne. Thereupon the ceremony began (see, also, text, page 679).

## HIS MAJESTY MAKES HIS CORONATION VOWS

The liturgy was performed in Arabic by the Abuna, assisted by a Coptic representative of the Alexandrian Patriarch and several Coptic deacons, Ethiopian bishops from the different parts of the country, high priests from the chief monasteries, and a group of the metropolitan clergy (see Color Plate II).



Photograph by Alfred M. Bailey

THE THICK-BILLED RAVEN IS OMNIPRESENT IN THE ETHIOPIAN HIGHLAND

These bold, predacious birds readily attack sick or young animals and are always about camps ready to steal scraps of meat. They have a raucous and far-reaching voice, typical of the raven family.

Before the questioning of the Abuna, the Emperor gave his sacred pledge to uphold the orthodox religion of the Alexandrian Church, to support and administer the laws of the country for the betterment of the people, to maintain the integrity of Ethiopia, and to found schools for developing the spiritual and material welfare of his subjects; and after this he was presented with the royal insignia.

One by one, with the solemn rites and blessings of the high Ethiopian clergy, he received the gold-embroidered scarlet coronation robes, the jeweled sword, imperial gold scepter, the orb, the diamond-encrusted ring, and two gold filigree lances in token of his position and responsibility.

Following ancient custom, as when Samuel anointed David, and Zadok and Nathan anointed Solomon, so the Abuna anointed His Majesty's head with oil, and then placed thereon the crown, made from pure native gold, incrustated with diamonds and emeralds. He then concluded with the words, "That God may make this crown a crown of sanctity and glory. That, by the grace and the blessings which we have

given, you may have an unshaken faith and a pure heart, in order that you may inherit the crown eternal. So be it."

Throughout the whole ritual and the chanting of Psalms, nothing disturbed the impressive solemnity save the staccato exhaust of low-flying airplanes which circled above. Otherwise the centuries seemed to have slipped suddenly backward into Biblical ritual.

CROWNING THE EMPRESS

In a brief ceremony the Crown Prince pledged to serve and support his father, the Emperor. The princes then made obeisance on bended knee before the Emperor, the assembly applauded their greeting, and the visiting naval band played the national anthem, while outside cannon roared a salute of 101 guns, and cheer after cheer came from thousands of subjects massed in the vicinity of the Cathedral.

As soon as the ceremonies for the Emperor had ended, the Empress, accompanied by her ladies of honor, entered from the right side of the sanctuary and took her throne (see, also, Color Plate I).



Photograph by Alfred M. Bailey

GOATS ARE AMONG THE MOST VALUABLE OF THE ETHIOPIAN FARMER'S POSSESSIONS

Short and smooth-coated animals are kept for meat and milk, while a larger variety grows a long, silky coat used for making cloth. A Galla tribesman can always start a fight by raiding his neighbor's goat herd.

After the chanting of Psalms, she was presented with a ring incusted with diamonds, as a symbol of the faith, and then assumed the scarlet and gold coronation robes.

Taking the Empress's crown from the hands of the Emperor, the Abuna offered the prayer, "O our Lord, place this crown of glory and joy on the brow of thy servant the Empress Manen. Make it a crown of charity, piety, wisdom, and of intelligence. O Heavenly Father, make this crown to be a crown of honor and glory. So be it."

He then placed the crown on her head, after which the Empress advanced toward the throne of the Emperor, bowed, and returned again to her throne.

Again the national anthem was played, the cannon voiced their salute, and the multitude cheered, following the obeisance of the nobles and the applauded greeting of the assembly.

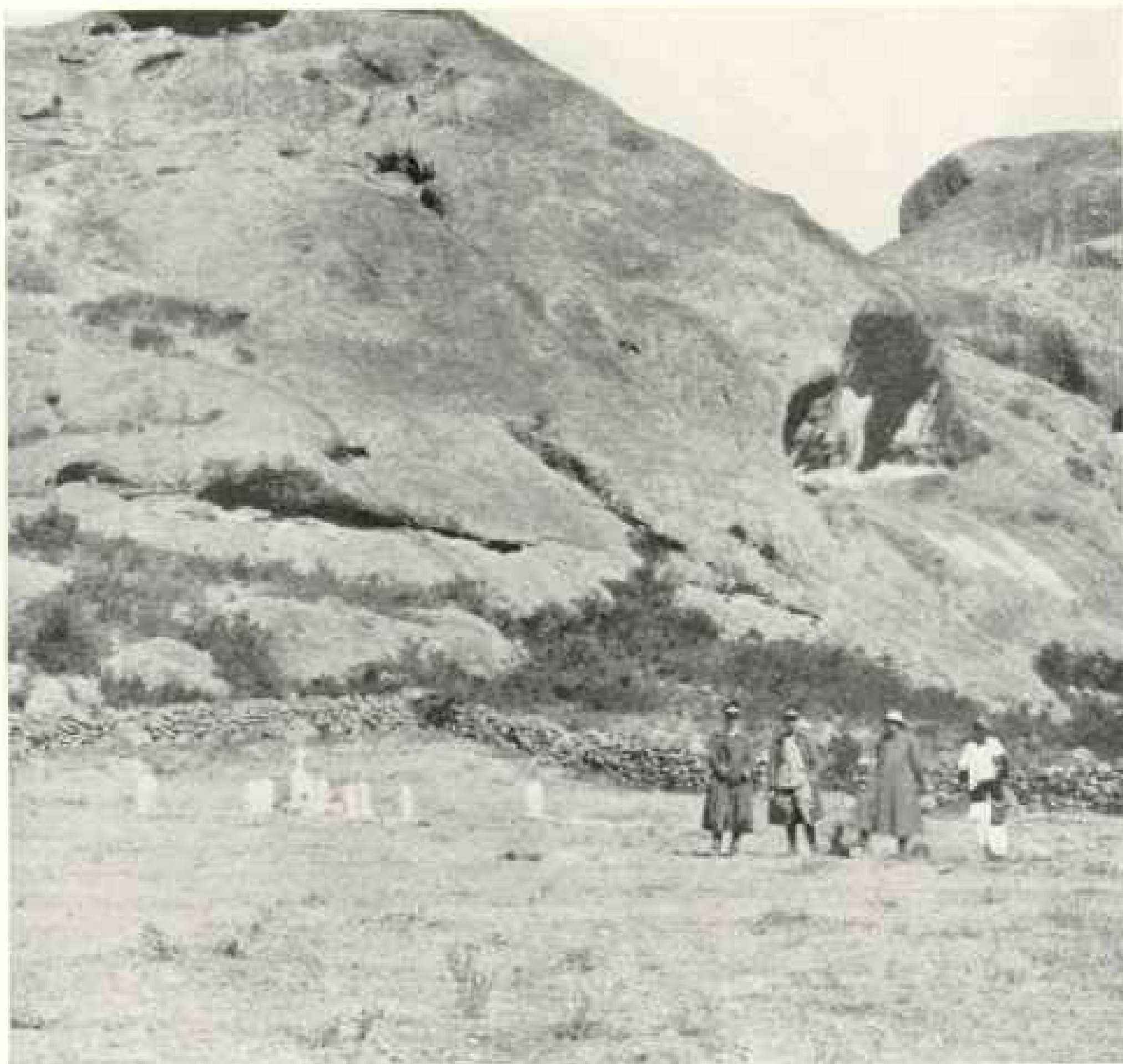
Thereafter Their Majesties removed their crowns and coronation robes and again, in white communion dress, they retired to the inner sanctuary of the Cathe-

dral to attend the sacred mass and communion. They later presented themselves in full coronation dress, in company with the high dignitaries and the diplomatic missions, in an outdoor pavilion before the multitude.

Quitting the pavilion shortly after in the State coach (which once did service at the coronation of the Kaiser Wilhelm of Germany), drawn by six bay horses. Their Majesties proceeded through the crowded streets. After reaching the royal palace they received the compliments and the wishes for a long rule from the thirteen visiting foreign delegations.

In a week of festivities given to State and diplomatic dinners, a race meet, and numerous other official functions, two events stand out in brilliant relief—the State procession through the city, when Their Majesties visited the principal metropolitan churches, and the great military review.

Early on Tuesday morning Their Majesties, in full imperial robes of the coronation, with the exception of the crowns, proceeded from the royal palace by State motor car. The streets along the royal



Photograph by Addison E. Southard

#### ANOTHER SPOT "THAT IS FOREVER ENGLAND" IN ITALIAN ERITREA

The British graveyard at Senafè is a reminder of the Napier Expedition of 1867-8 (see text, page 734), which may be regarded as the real beginning of modern Ethiopia's contact with the outside world. The United States did not send its first diplomatic mission to Ethiopia until 1903. Contacts were allowed to lapse, however, and it was not until 1928 that regular diplomatic relations were reestablished and the author became America's first Minister to the ancient Empire.

route to the various churches of the city were pressed on each side with the multitudes, who waited eagerly to catch a glimpse of the party.

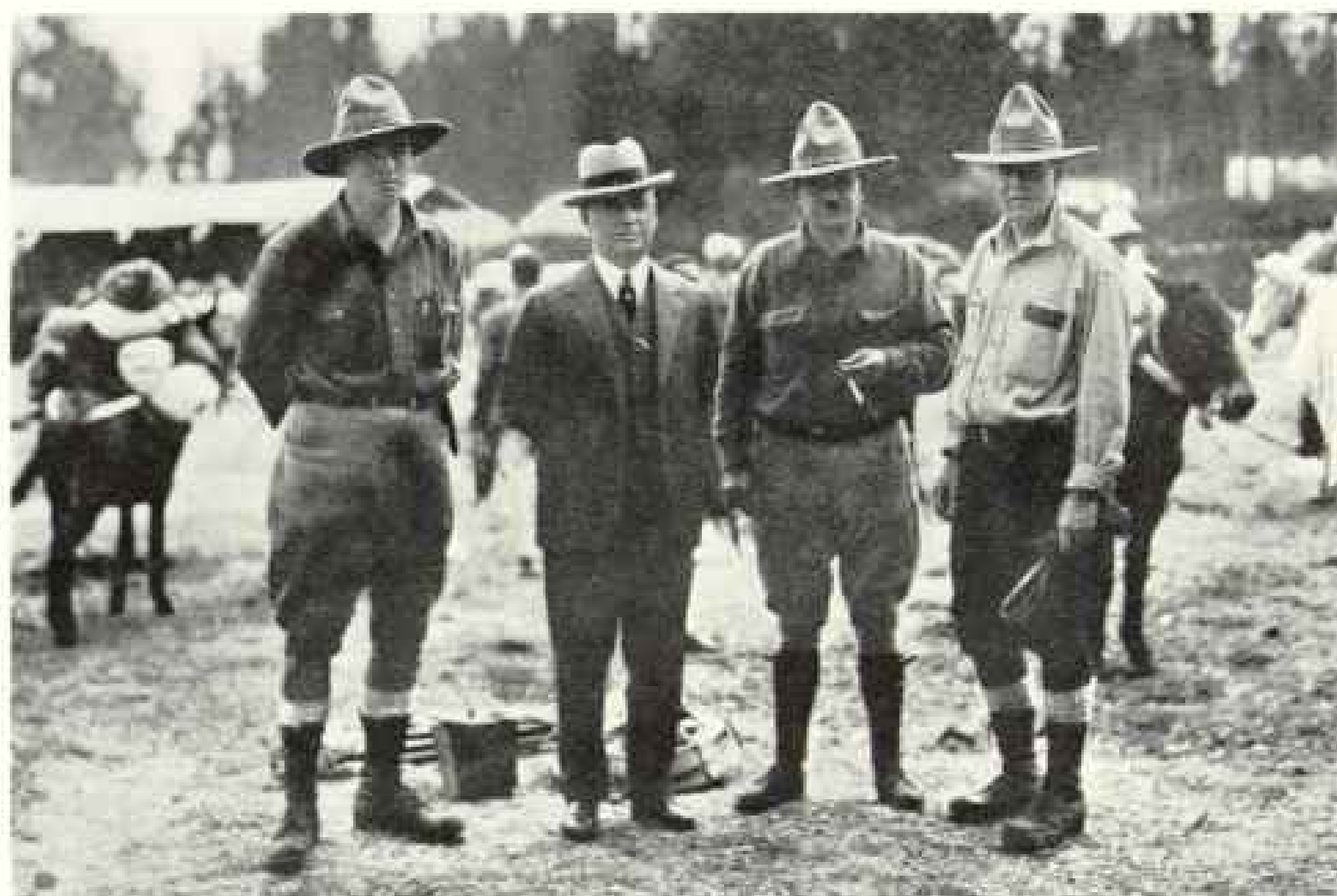
Preceding the royal car were the warrior chiefs in full regalia, with their gorgeous silk tunics, lion-maned headdresses, and collars fluttering in the breeze, as they rode their richly caparisoned mules and horses. The morning sunlight danced and sparkled from their gilt-bound rhinoceros shields and gleaming spears.

Following them came the mounted, red-clad war drummers beating out a march of victory. Companies of warriors in ancient

military attire passed along afoot, preceding the modern khaki-clad infantry. Then came a troop of modern cavalry as the immediate escort to the motor car bearing the royal party, who were shaded from the direct rays of the sun by red and gold parasols (see page 680).

In the company immediately behind Their Majesties were several cars escorting a number of the high State officials, after which came more mounted and unmounted troops, forming in all a magnificent procession upward of a mile in length.

Closing in upon the rear of the procession, the white *chamma*-clad soldiers, who



Photograph by W. Robert Moore

#### AMERICAN AIDS TO ETHIOPIAN PROGRESS

A survey party to the Lake Tsana district pauses for a few minutes after packing its mule caravan to exchange farewells with the American Minister (second from left) at the American Legation grounds in Addis Ababa (see text, page 686).

had been stationed along the streets, formed a veritable sea of seething rifle barrels, as they marched toward the palace.

#### A SEA OF FLASHING SHIELDS AND SPEARS

Early on Friday morning the wide plain at the edge of the city became an animated hive of activity, as 100,000 soldiers encamped around it prepared for a military review (see page 685).

It was hardly a military display with cavalry and infantry marching with precise formation in stiff review, to which we of the West are accustomed, but far more informal and spectacular.

Dashing in groups, on horse- and mule-back, with their colorful robes and polished shields and spears flashing in the golden sunlight, the warriors rushed down the plain to the position before the hill on which the Emperor's pavilion was located. Then, with a mad whirl, they would charge up the steep, rocky slope direct toward the Emperor's tent, where, in wild pandemonium, they cried out their past accomplishments and deeds of valor against wild

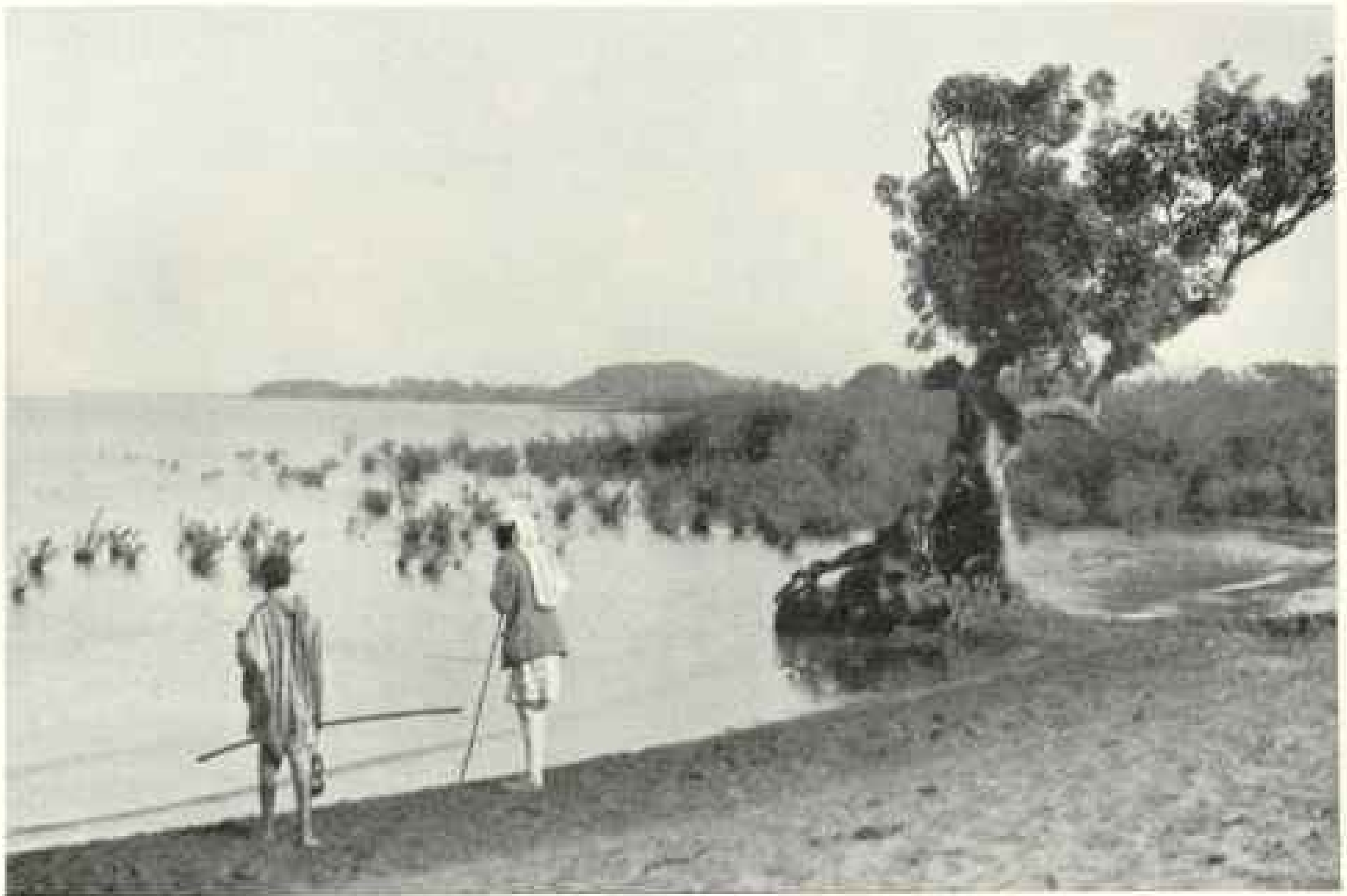
beast and enemy. How many elephants, how many lions, how many men . . . !

Company after company surged toward the throne, each trying to get nearer, past the guards, who forced them back, to shout their war cries and proclaim their prowess.

The Emperor, dressed in a scarlet and gold military uniform, with a tall lion-mane busby on his head, presented a magnificent appearance, as he sat on his red throne in the richly carpeted pavilion, attended on each side by the diplomatic groups and the high dignitaries in full military dress (see page 681).

Out on the plain, in sure-seated mounting, and moving almost as part of the wild dashing steeds on which they rode, the warriors charged and threw long, slender, wooden spears at fleeing comrades. Theirs it was to live again for the morning, in mimic pageant, the battles that had won for them their lion-mane headdresses and capes (see page 680).

In sharp contrast to the early display of soldiery came the Emperor's well-trained and modernly equipped infantry and cav-



Photograph by Alfred M. Bailey

#### LAKE TSANA IS THE CHIEF RESERVOIR OF THE BLUE NILE

By means of a dam proposed to be built where the Blue Nile issues from the lake, the waters upon which Egypt depends for so much of its agricultural prosperity can be made to serve more efficiently (see text, page 686). The lake's greatest length and breadth are, respectively, 47 miles and 44 miles; its drainage basin exceeds the area of the State of Connecticut.

alry, which filed past in ordered lines. It is more efficient, perhaps, but certainly not so picturesque as those charging warriors who in the past have maintained the freedom of Ethiopia, but have also caused much internal strife.

#### THE EMPEROR POSES FOR THE NATIONAL GEOGRAPHIC SOCIETY

In coöperation with my efforts to picture the coronation in full color for the National Geographic Society, the Emperor, who is a member of The Society, kindly consented to pose in his coronation robes, as poor lighting had precluded the possibility of making the photograph on the day of the actual coronation.

But to secure adequate time during the strenuous ceremonial days of His Majesty and to select the proper position and lightings for my color plates necessitated many

delays. On the late afternoon before I left Addis Ababa, on a last-minute special train which would connect with my steamer at Djibouti, I made the exposures of Their Majesties in the rapidly failing light which all but made color photography impossible (see Color Plates I and II).

In waiting, too, I had the opportunity to see the great open markets again in activity, with from 15,000 to 20,000 people from the provinces bringing in long camel and donkey caravans laden with hides and skins, wax, honey, and other produce to barter and sell in the city.

When at last I departed from the capital, "New Flower" had already shed almost all of the colorful petals of the coronation festivities, but within the calyx of that blossom are the seeds of progress and enlightenment, which should grow and flourish in the long-fallow land of Ethiopia.



## THE TIMELESS ARANS

### The Workaday World Lies Beyond the Horizon of Three Rocky Islets Off the Irish Coast

BY ROBERT CUSHMAN MURPHY

AUTHOR OF "THE MOST VALUABLE BIRD IN THE WORLD," "THE ROMANCE OF SCIENCE IN POLYNESIA," AND "SOUTH GEORGIA, AN OUTPOST OF THE ANTARCTIC," IN THE NATIONAL GEOGRAPHIC MAGAZINE

**F**IND an island remote because of distance or unfashionableness and you have found a new world. It need not be the uninhabited haven of every man's occasional desire. On the contrary, the presence of a human population, especially one with a long history and a distinctive way of life, enhances the charm, the strangeness, the beguiling sense of unreality. The islanders themselves, even more than the bizarre or Arcadian stamp of their environment, supply most of the exultation of the visitor, as well as the echoes that ever after move among his heartstrings.

Few are stirred deeply by the name of an islet that has not had at least its *Crusoe*, but if we mention Pitcairn or Tristan da Cunha the imagination revels in the lives of people of our own race who have worked out their destinies on specks only less far off than the stars.

It is not necessary, however, to cross wide stretches of ocean or to seek uttermost Thule. Close to many a familiar seaport are new microcosms to be discovered, and the rule for testing them is this: If the islanders seem to regard their portion as merely a fraction of the vast earth, you have arrived too late; if, on the other hand, they unconsciously divide the globe into two, of which their island is one full moiety, you have found your other planet and your reward is at hand.

This was doubtless the spirit of Elizabethan England. It is not so long since all mankind was made up of Nantucketers and "Off-Islanders." At Gotland and Majorca, and many a lesser dot that I have visited, a similar discrimination will be current for at least a few years more.

At the Aran Islands, whither my wife and three children and I found our way recently, we sensed this feeling in full flower and within a day or two we also subscribed to it.

If you should ask me to explain the peculiar charm of the Arans, I could not

answer satisfactorily, for it is largely intangible and not even wholly comprehended. Simplicity, harmony, and a feeling of remoteness are all close to the root of it. The islands seem not of this age, for the workaday world lies beyond the horizon of time as well as that of space.

The beauty of the setting and of the human picture are equally unconscious. There is a unity in the theatrical panorama of sea and sky, the medieval homeliness of speech and hearth and tool, the honest weave as well as the madder and indigo dye of textiles, the seraphic countenance of every fourth or fifth woman you meet on the undulating roads.

#### SYNGE FOUND HIS INSPIRATION HERE

Those who can become one with the spirit of the Arans may dwell there in seemly fashion, for hospitality that involves no discomfort can be found. You may sleep in spotless quarters and feast upon fare that includes lobster and sole no less than mutton and cabbage. You may also return three hours late for dinner with the assurance of a smiling welcome and steaming dishes, for time at the Arans runs not by the clock, and the hour of a meal is when guests sit down at board. But the secret of all this is to be revealed only to choice souls.

Three islands in Galway Bay, off the middle of the west of Ireland, with the stony coast of Connemara and the Twelve Pins within sight to northward, the Cliffs of Moher forming a thundering lee shore to eastward, and the open Atlantic toward the west and southwest—such are the Arans. The distance to the nearest points of the mainland is only a few miles, but enough to make a hazard for all craft except the small steamer that plies more or less regularly between Galway and Killoan, the tiny insular metropolis on Inishmore (see illustration, page 748).

In the bare sanctuary of these islands the soul of ancient Ireland now has its ephemer-





Photograph from Robert Cushman Murphy

REMINISCENT OF NANTUCKET OF OLD DAYS: THE BUSIEST CORNER OF  
KILRONAN, INISHMORE

eral resting place. Language and habits, customs, traditions, flesh and blood, from the days of St. Patrick and before, forced westward through Connaught during seething ages, have concentrated at the Arans.

Farther offshore, in the mystical world that is the real world of the inhabitants, there is no land save the island of O'Brasil, which only dead men reach.

Small wonder that the youthful dramatist, John Millington Synge, found at the Arans his richest inspiration. In his gem of ethnic literature, "The Aran Islands," one finds the raw stuff of many of his plays and also a picture of the island clansmen before the dawn of change.

Although the largest island of the group is less than nine miles long, the three together have, at a guess, as much stone wall as all New England. Inishman, the middle island, boasts 2,500 miles of walls. Inisheer is not far behind, while Inishmore may have several times as much. No figures are authentic, but if a state ordnance officer were to tell me there are 10,000 miles of walls upon the three islands, I should admire his conservatism.

Picking up blocks of limestone and disposing of them in the only way possible must always have been the chief occupation of the inhabitants. The prehistoric people indulged themselves by rearing on the hilltops massive, buttressed, Cyclopean forts, such as Dun Aengus and six others, ringed about with many concentric breastworks and chevrons-de-frise of stone (see illustrations, pages 759 and 767).

These duns are among the most magnificent barbaric monuments that survive in Europe. Fortunately, the later islanders were under no temptation to pull them down; rather, they were forced to emulate the example of the first builders, and to continue the unmortared masonry on a less heroic scale down the long slopes to the very crests of the beaches. Only thus might they hope to uncover a crannied pasturage and the patches of soil in which rye, potatoes, cabbages, and willow withies may grow.

THE PATTERN OF ROCK WALLS IS A  
CRAZY QUILT

From the rims of the duns, as also from the sea, the Arans present the pattern of



GOSSIPING BEFORE A PEAT FIRE

The large iron pot is full of potatoes being boiled for the family.



Photographs by A. W. Cutler

THE MAIL ARRIVES AT THE POST AND TELEGRAPH OFFICE ON INISHMAN

Here John M. Syuge lived while gathering material for his book, "The Aran Islands," many of the characters in which are still living on Inishman.



FISHING OFF THE ROCKS OF INISHMAN

These rocks rise from 20 to 300 feet above the water: Very long rods are used and the fishermen have a way of sitting on the end in the manner here seen. Bream, conger eels, haddock, cod, turbot, and skates are caught.



CATTLE FEEDING IN A LARGE FIELD OF FLAT, FISSURED ROCKS ON INISHMAN

Photographs by A. W. Cutler.



Photograph by A. W. Cutler

## TWO CURRAGHS UNLOADING HUMAN AND INANIMATE CARGO

The Galway steamer has called at Inishman to discharge passengers and freight and is now on its way to Inishmore.



Drawn by A. H. Bonatant

#### THE ARAN ISLANDS

The total area of the three islands, which form a sort of breakwater across the Bay of Galway, is only about 48 square miles. Emigration is continually decreasing the number of inhabitants, which is now less than 2,000.

a crazy quilt. Breast-high walls, mostly a single layer of blocks in thickness, show no standard of arrangement or direction. The thousands of irregular inclosures that come under a glance have neither gates nor stiles. The method of turning a cow into pasture, and of releasing her at evening, is to take down a section of the boundary and then to build it up again behind you. A cross-country ramble, even for the nimble, becomes a process of demolition and stone-laying.

Long use of natural points of breaching has left its mark upon the walls, for at such places the rocks are jumbled in the simplest manner, while elsewhere they usually show sorting or design, the expression of a crude architectural whim.

Let no one draw the conclusion that the surface stones of the Arans have now all gone into walls. There is still labor in gathering merely the loose chips to keep unnumbered generations out of the devil's doings. The unbroken strata, standing on edge over hundreds of acres, and the great flat, glacier-polished tables will doubtless lie in place until the end of time. On such smooth floors, marked off by granite boulders carried by primeval ice from far-

away Donegal, the islanders hold their dancing competitions.

The native rock is all limestone, in which fossils meet the eye on almost every fracture or weathered surface. A certain old man of Inishmore, who enjoys discussions with visitors that he accepts as peers, has come to the shrewd conclusion that this rock must have been at one time a jelly under the sea. How else, said he, could shells and perfect figures of fish have come into the hearts of the great slabs he had hewn for tombstones? In his day he had cast aside, alas, a hundred "fish pictures."

But this man has doubtless pondered too much alone during the brooding nights; he is suspected of impiety and is looked at askance, though in charity rather than harshness, by an orthodox community.

Among other wonders of Inishmore that owe nothing to the hand of man, the first, perhaps, is a great limestone trench called the Worm Hole, under the scarped face of the southerly coast. This basin is as rectangular, and as blue when the sun shines, as any swimming pool hewn from the coral of Nassau, in the Bahamas. It takes its name from the swirling and frothing of the water when the ocean is rough outside. Seals come up from depths beneath the umbrageous shelves and sport within the Worm Hole. Once, according to story, a man tried to swim out by the same route, but he neither came through nor returned.

#### TREES ARE FEW BUT FLOWERS MANY

Inishmore is the only island of the three supporting a few copses of trees, mostly oak and ash, growing in sheltered depressions or on low forelands that extend as lunettes from the bases of the slopes.

All the trees seem to stand on church property, as in China, shadowing either the still-used places of worship or the ruins that date from saintly times, when Ireland was the luminous eye of Christendom. The clustered willow shoots, from which the baskets and panniers of the island folk are woven, can hardly be termed trees. Plucking one of these for any but its essential purpose, by the way, seems to be the one universally condemned breach of good manners.

As if to make up for the dearth of trees, 400 kinds of flowers, say the Aran folk, bloom on their rocks during one or more

of the twelve months. Orchids and meadow-sweet, loosestrife, saxifrage (the Good Peoples' cabbage), and heather, not of one sort, but of several, cover long stretches of the hillsides.

Grass grows luxuriantly, even though sparsely. Mosses and lichens spot the limestone with rich color, and every cleft and spring and hoary wall is a conservatory of ferns.

The beaches and tidal promontories glisten like a palette with orange and amber and lavender seaweeds. Gathering and broiling the kelp for the subsequent extraction of its iodine is an industry in which all hands take part (see illustrations, pages 762 and 764).

Owing to the shallowness of the soil, no peat has formed at the Arans, and so the residents are dependent upon the mainland for their fuel. The traffic in turf, brought from Connemara in hookers that carry back cargoes of fused kelp or dried fish, constitutes the chief commerce of the islands. Exchange of the sea's trove for turf being almost the only form of barter left since money has come into general circulation, there is hardly a day of passing weather on which the dark-sailed sloops, deep-laden with brown and musty blocks, do not scud into the coves of Inishmore.

The stone eyries of the crests and the equally venerable stone beehive huts are ascribed to the half-mythical *Firbolg* (Belgae?), some early invaders of Ireland, but their exact age and origin are alike uncertain (see page 755). All we know is that the grandest of the duns bears the name of Aengus, who came to Aran from Scot-



Photograph by A. W. Cutler

#### A SETTING FOR TALL FISH TALES

land in the first century of the Christian Era.

Besides these tokens of primordial might, there are remains of numerous medieval chapels, monasteries, and schools, such as the Seven Churches, near the outer end of the big island (see page 759). *Aran-na-naomh* (Aran of the Saints) is still a name of Inishmore that dates from the age of learning and piety.

#### DIVINE SERVICE UNDER DIFFICULTIES

In the Gaelic revival a share of the old prestige is returning, for priests, scholars, and teachers come again to a re-founded college or dwell a few weeks at a time in the cottages of Inishman, where all speech is in Irish. We were told that four years prior to our visit the now fluent priest of



Photograph by A. W. Cutler

ONE OF THE LAST EPISODES IN THE LIFE OF A PIG—IT IS ON ITS WAY TO THE PIG FAIR AT GALWAY  
Sheep, hogs, horses, donkeys, cows, and goats form part of the property of many households in the Aran Islands (see text, page 761).



Photograph by A. W. Cutler.

#### PREPARING HIS FATHER'S "SPILLET" FOR A FISHING EXPEDITION

A spillet is a line about a mile long, to which are attached hooks baited with bits of raw mackerel or a peculiar kind of worm found among the rocks when the tide goes out. The spillet is sunk to the bed of the bay.



Photograph from Robert Cushman Murphy.

#### A MODERN BEEHIVE HUT

This is a contemporary storhouse. Structures of the same type, dating from the time of St. Patrick or earlier, are found on the Arans (see text, page 753). The boys are American—1931 model.





Photograph from Robert Cushman Murphy

"THIS IS THE WAY THE LADIES RIDE"

The pampootie-shod feet of the little maiden beat a quite ineffectual rat-a-tat-too against the well-covered donkey's ribs.

Kilroman had known scarcely a word of the native tongue.

At Inishmore to-day are several active churches and always at least one priest in residence. Inishman and Inisheer share a pastor who journeys back and forth by curragh for the saying of mass and other duties. Until a few years ago, a lone priest made the rounds of all three islands each Sunday morning, beginning with a mass at dark of day and not ending his watery pilgrimage or breaking his fast until nearly noon. To one who has seen three strong rowers straining on the pull across Gregory Sound in fair summer weather, the ordeal of successive ferryings on a rough February dawn is very vivid.

Syngé tells of how he was lying outside a cottage at Inishman, smoking, one bright Sunday forenoon, while all the inhabitants were at church. Presently the priest came up, wet and worn out, to have his first meal:

"Tell me," he said, "did you read your Bible this morning?"

I answered that I had not done so.

"Well, begod, Mr. Syngé," he went on, "if you ever go to Heaven, you'll have a great laugh at us."

At Kiltoran there is also an edifice of the Church of Ireland, as lively a looking place as a country schoolhouse during summer vacation. Three or four times a year, however, if all goes well, an Anglican clergyman makes the voyage from Galway, and *both* the Protestants of the Arans have an opportunity to attend divine service!

The present population of the Arans is less than two thousand. Losses through emigration to the United States have been heavy and are still going on as fast as passage money can be sent from this side of the ocean. There are doubtless many more of the islanders in the vicinity of Boston than remain at home.

Everybody, at any rate, has relatives in America, and the only importunities I encountered were those of lonely mothers and fathers begging snapshot portraits to be sent to the far-off children. Not a few of the expatriates return, with or without their fortunes; for the grip of the spray-washed rocks seems stronger, if possible, than that of the fairest glens in Erin. If only one could make a living at home!



Photograph by A. W. Cutler

FISHERMEN OF INISHMAN WITH THEIR FISHING TACKLE IN BASKETS

Little of the catch of these sturdy sons of the sea is sold, for most of it is consumed at home (see, also, illustrations, pages 750, 755, and 765).

Whenever the lamented Synge sprang out of a curragh, unheralded, upon the beaches he loved so well, he was questioned about the newest wars and wonders of the world. Nowadays sophistication has gone a step further. If you are an American and if relatively worldly Kilronan is not your ultimate destination, you are likely to be asked about the personal well-being of Mr. Hoover.

The inquiry comes in such a way that you hate to say you had not seen the President for some time before leaving home. It seems callous, even unfriendly, to be so out of touch with the chief magistrate of your own land, and awkward to explain to a community of which every man, woman, and child will recognize and greet you after three days' residence.

FOUR FAMILY NAMES EMBRACE MOST OF POPULACE

While there are many family names among the people of the islands, the bulk of the population appears to be made up of four tribes—the Mullins, the Gills, the Flahertys, and the Connollys.

All of these names except Gill are spelled in more than one way, but are acknowl-

edged to refer to the same stocks. Confusion that might result from the duplication of first names is commonly avoided by the addition of the father's given name. Thus Patrick Flaherty John or James Mullin William become sufficiently distinctive. These are here cited in English form, but Irish is, of course, the universal speech among the islanders, and there are many of all ages who have little or no English.

At Inishman probably not a sentence of English is spoken except during the sojourns of visitors, and even the latter are more than likely to have come with the object of improving their own Irish vernacular.

The Aran people are, on the whole, a fine-looking lot, variable in stature and complexion, but showing a strongly marked Norse component. Furthermore, their generally deliberate conversation is after the manner of the comic-story Norseman rather than of the proverbially quick Celt, although much of this may be due to the fact that they address a stranger in their second and less familiar language.

Nevertheless, when the curraghs, each manned by three or four sturdy oarsmen, row out through the surf to meet the



Photograph from Robert Cushman Murphy

#### A MATRON OF INISHMAN

Her young son peeps through the wheel which has doubtless spun the yarn for all his clothing.

steamer, which docks only at Kilronan, the impression upon a newcomer is that of Norwegian boatmen fresh from the fjords. Fair skin, beards as red as Thor's, and penetrating blue eyes preponderate. Many of the patriarchal men look like conventional prophets and apostles.

#### FOOTGEAR IS SOAKED EVERY NIGHT

Ethnologic generalities are dangerous, but possible signs of Norse heritage are found in the Aran vocabulary as well as in the appearance of the people. One example is the word "pampootie," the name of the pointed rawhide sandal which is the ordinary footgear of all ages. In Jutland, Denmark, the same article is called *pampusse*. Pampooties are comfortable only when kept soft, and therefore they are soaked in a bucket of water every night, while during the day the wearers miss no opportunity of wading into the sea.

The clothing worn by the older inhabitants of Inishmore, and by practically the entire population of the less urbane islands of Inishman and Inisheer, is the time-honored garb of cloudy blue homespun, with ankle-length trousers for the men,

and a white-sleeved waistcoat over the blouse. A hat of heavy felt completes the native costume, but many of the younger men have taken to caps or tam-o'-shanters, as well as to the blue jersey of the fisherman.

The women wear long, red, homespun petticoats, indigo stockings, and red or parti-colored shawls. Taste and utility are combined in the woven woolen girdles, of bright hues, bound several times around the waists of men and boys or sewn as a decoration on the skirts of the women.

#### BOYS WEAR RED PETTICOATS

Except in the sophisticated parts of Inishmore, within a few miles of Kilronan, the dress of small boys includes a red petticoat in lieu of breeches (see page 753). At Inishman one sees nothing else. Formerly the boys wore these until they were 20 or so, but we saw none on youngsters of more than 15 years.

The boys' skirt is, no doubt, a phase of the Gaelic kilt, surviving in shorter and more familiar form in the Scottish Highlands, but at the Arans it seems to have become necessary to justify it by a spurious



## SEVEN CHURCHES ON INISHMORE

During early medieval times, when these ruined buildings were used, it was evidently considered more feasible to add a new chapel than to enlarge an old one (see, also, text, page 753).



Photographs from Robert Cushman Murphy

## MYSTERIOUS SYMBOLS OF DUN CONOR

Like Runic marks in built-up stone, these strange figures cover part of a grassy inclosure on Inishman.



Photograph by A. W. Cutler

#### PIGS BOUND FOR MARKET

From Inishman the porkers are shipped to Galway (see, also, illustration, page 754).

explanation. Probably as a result of innumerable inquiries by visitors, the following story is now passed out as a matter of course:

The fairies or the commonplace devil have the power to lure small boys out of the everyday world, but their influence over little girls is much less. Therefore the boys are rigged out like girls and the evil ones are likely to be deceived, although there is no absolute assurance of safety.

Among other peculiarities of personal appearance is the prevailing fashion of hair-cutting among the boys and younger men. The hair is close-cropped all over the head, except for a tuft of bangs beginning about an inch above the forehead. This gives them something of the expression of the Japanese doll-head pen-wipers that used to be familiar before the day of fountain pens.

#### SCANT FURNITURE IN THE THATCHED COTTAGES

The dwellings on all three Aran islets are of the usual Irish peasant type, built of cemented stone, whitewashed within and without, and roofed with thatch, flag-stones, or slate shingles. Nine out of ten

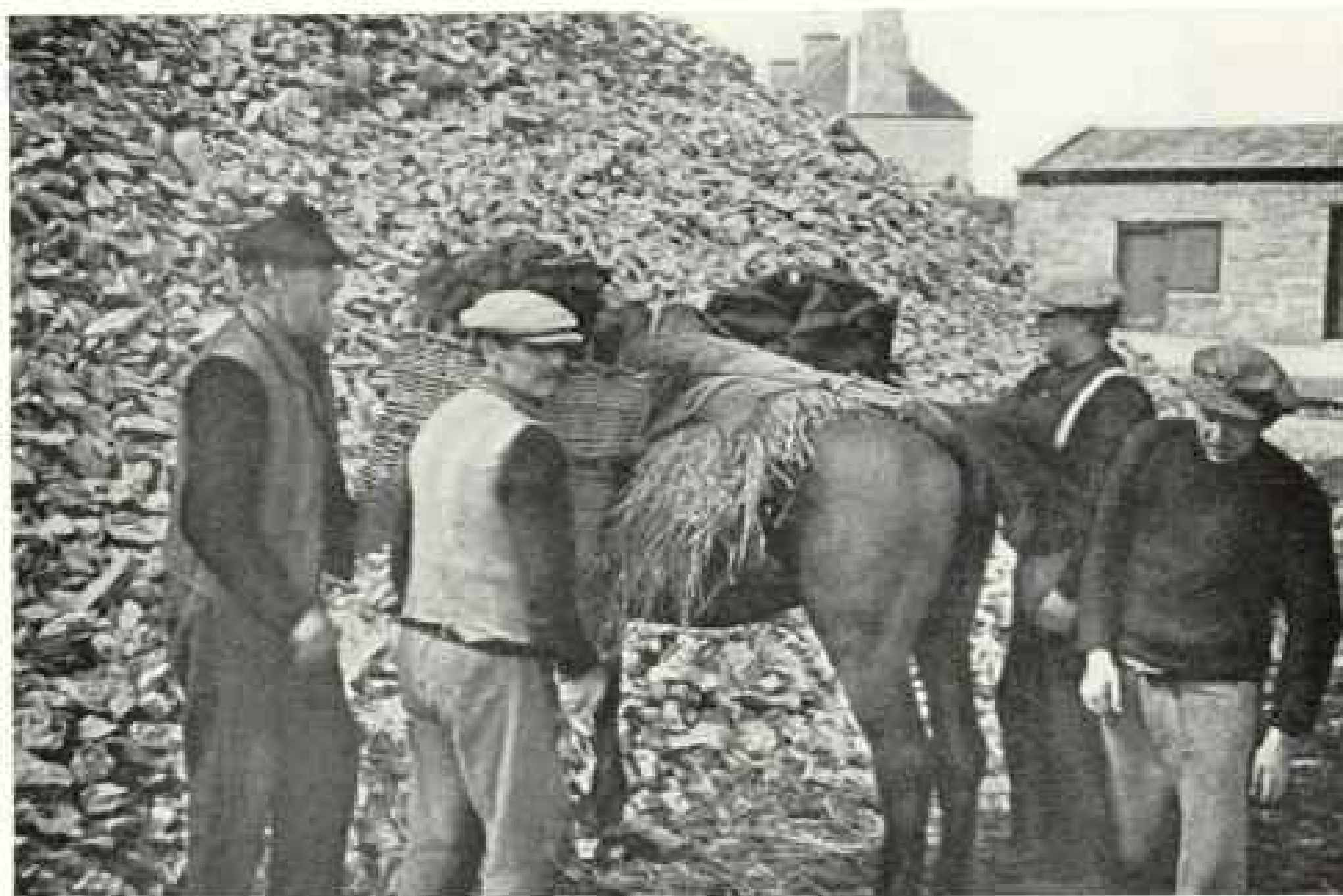
are thatched, and in this land of ocean gusts the straw is laced down with a network of cordage, the vertical strands of which are knotted to a line of pegs under the eaves. The pegs themselves are of limestone, forming units of the wall; for wood, even in small pieces, is at a premium.

The houses may have two, three, or even more rooms. At any rate, there will be the kitchen (the living-room of the family) and a bedroom opening from it.

Above half of the kitchen is the inevitable turf loft, where sufficient peat is stored so that dry fuel is always at hand. The appurtenances of the kitchen include a pot-oven among the fireplace gear, and an open cupboard in which are ranged the treasured Canton plates, the trenchers, luster jugs, and other ware passed along from one generation to the next.

The cupboard, like the beds, is likely to be painted in a pattern of bright colors.

The formal bed, as distinguished from sleeping places used by younger members of the family, occupies a large proportion of the floor space in the chamber, the only other invariable features of this room being the pictured reminders of Purgatory or of subjects having the same purpose. While



Photograph from Robert Cushman Murphy

#### LOADING UP

Most of the horses are the wild, but sturdy, Connemara ponies.

most of these can hardly be called esthetic, there are exceptions among the chromos inherited from long-departed ancestors.

Amid such surroundings the hospitality of the Arans is showered upon visitors, with tea and buttered bread, jam, perhaps, buttermilk, and blessings. "God bless him" (or her) is the natural suffix to numberless comments. "The blessing of God on this house" is the prayer of the guest who enters.

In like manner the salutations in Irish exchanged by the islanders when they meet on the road are a litany of benedictions recited to the length of earshot.

#### DOMESTIC ANIMALS OF THE HOUSEHOLD

Some of the little estates of the Arans have separate stone stables, but often the quarters for domestic animals form a special section of the dwelling, entered through an outside door at the rear.

Chickens, ducks, and turkeys, to be sure, have the run of the kitchen during weather in which doors stand open; dogs and cats naturally belong with human beings, here as elsewhere; young pigs and donkey foals can hardly be barred altogether, especially when there are children to coax them in.

The she-asses recognize their rightful friends, for it is to be admired how persistently they contrive to stand between their colts and a stranger, docilely enough, and yet with a loose-hung leg ready to be employed.

While hogs form part of the property of many households and are shipped in quantity to Galway, one rarely sees them, for the poor creatures spend their lives mostly in the twilight of the stone annex. Go behind and the sense of smell may tell you of their presence. Sheep, like hogs, form an important product, although there are no large flocks; goats are less common, but many of them have huge udders and must be good providers. Half the families, I should judge, have a red cow or two.

The pride of an Aran Irishman, however, lies in none of the animals thus far named. As Synge translates from an old island song:

"I pity a man without a cow,  
I pity a man without a sheep,  
But in the case of a man without a horse  
It is hard for him to be long in the world."

Horses play a conspicuous part in the life of the islanders, even though those of



Photographs by A. W. Cuder

**USING PRIMITIVE SCALES FOR WEIGHING KELP**

After the kelp has been thoroughly burnt, it is cut into blocks while still soft. When dry, it is hard and heavy.



**ONLY A FEW SUCH INISHEER COTTAGES ARE TO BE FOUND TO-DAY**

The most curious feature is the thatched chimney, which, strange to say, never catches on fire.



Photographs by A. W. Cutler

#### JACK AND JILL—IRISH EDITION—BOTH OF INISHMAN

The little boy with his red petticoat ought to be wearing *pampooties* also (see text, page 758), but every time a pair is put on him he throws them away. On his back he carries a basketful of fodder for the pigs, a task to which the small boys are often assigned.



#### STALWARTS OF KILLEANY VILLAGE, INISHMORE

The straw with which nine out of ten of the cottages on the islands is thatched is home-grown, and is so much more important than the grain itself that the hand-threshed kernels of rye are used only for seed rather than food.





INISHMAN KELP-BURNERS, WITH A STACK OF DRYING SEAWEED TO THE LEFT



Photographs by A. W. Carter

**BURNING KELP, AN IMPORTANT INDUSTRY ON THE ARAN ISLANDS**

The seaweed is gathered in the fall and early spring and stacked on the shore, where it is left to dry for perhaps a year, depending on the sunshine. The burning takes place in the summer, in low kilns or pits on the shore. Often the men work for 16 to 20 hours at a stretch, since it is fatal to let the fire go out when once started. Kelp is used in the manufacture of iodine.



Photograph by A. W. Cutler

#### OFF FOR FOOD

The Aran Islanders subsist mainly on fish. Note the method of carrying the curragh to the water. In the background,  $3\frac{1}{2}$  miles distant, is Inishbeer, where seaweed is being burned.

Inishman must be shipped perilously to Connemara for part of the summer. At Inishmore there is grass enough for all the year. Everybody rides, although there may not be a saddle on the three islands. For that matter, I do not recall seeing a bridle. A rope headstall, tied for the occasion, serves the purpose.

The men sit close to the withers, hugging the barrels of their mounts and going everywhere at a fast pace. Women and girls often ride behind, sitting sidewise, with an arm around the horseman's waist, and calling for no slackening of speed.

The Aran horses get no oats, but the limestone pasturage, like so much of that in the west of Ireland, is very rich and the steeds are remarkably sleek. They are known well enough to the buyers of mounts for half a dozen European armies, who attend the fairs of Connaught. Handsome, shapely, spirited, with proud neck, trimmed mane, and square-cut tail, the horse of many a poor peasant might have been summoned by Pygmalion from a Greek pediment.

It goes without saying that the Aran men are expert boatmen; natural selection

would long ago have weeded out the unskillful; but, like so many other island folk, they are strictly boatmen rather than sailors. Few have taken to the sea, though all are at home among breakers. Their special craft is the canvas curragh, which is in effect the ancient coracle (still used in County Antrim) stretched out long, endowed with sheer and streamline, and covered with textile instead of a bull's hide.

#### THE CANVAS CURRAGH IS THE ISLANDERS' BOAT

The curragh is buoyant, roomy, and slippery, ideally adapted to rough coastal waters and bad landings. Owing, however, to its lack of grip on the water, it has a dogged tendency to turn bow to the wind and is hard to keep on a quartered course. Leeboards would, no doubt, be a practical addition, particularly when the small bow sail is employed, but the device is unknown at the islands (see pages 751, 766, 770-2).

No craft can be safely moored along the shores of the Arans, and the lightness of the curragh enables a crew of three to toss it upside down over their heads, and so to turn beetle while they bear it high and dry.



Photograph from Robert Cashman Murphy

#### RECEIVING CARGO FOR THE ISLANDS

Note the bladeless oars, the odd tholepin rig, and the delicate framework of the canvas craft (see text, page 765).

A new curragh twenty-odd feet in length can now be purchased for the equivalent of \$35. Before the World War they cost half that. Well handled and promptly repaired, they should stand up through eight years' service, according to the master builder of Inishman.

While it would be hard to improve upon the general plan of the curragh, the same can scarcely be said for its means of propulsion. The bladeless oars seem an example of island inertia rather than of expediency. They work upon a single tholepin, which projects through a triangular brace attached to the loom of the oar. In so far as the latter cannot be feathered, the bladelessness is an advantage, for the slightly flattened poles catch little wind (see illustration above).

The power with which such slim sticks force the boat over the water is surprising; perhaps the importance of blades is, after all, somewhat illusory; but the oar-rig of the curragh is unnecessarily fixed and awkward, and in order to obtain sufficient leverage the hands of the rower must be crossed at the completion of each short stroke.

Working a curragh, and every task connected with it, is a man's job. Seated on the immemorial walls of Dun Conor, at Inishman (see page 759), I asked a sturdy but dreamy-looking lad whether he was a fisherman.

"I am but 17, I suppose" (a common idiom when stating age), "and a man does not fish until he is 20," was his slow, soft-spoken reply.

For an insight into what such words imply, read Synge's play, "Riders to the Sea."

#### ONLY ONE KEY SEEN ON THE ISLANDS

The simple honesty of the Aran folk is proverbial. The one key we saw, which was in Kilronan, a place to be thought of separately since it has become a port, stands on the outside of the house lock from one year's end to the next. A camel's-hair jersey that I dropped from a jaunting car along an unsettled part of the main highway of Inishmore was hung conspicuously on a wall, with a stone to keep the wind from blowing it out of sight, and there it remained until I recovered it at evening. Indeed, a hundred passers-by



"BROKEN GRAY WALLS ON THE FARTHEST EDGE OF THE OLD WORLD"

With chevaux-de-frise of jagged limestone, outer breastworks, and buttressed battlements, the great fort looks as if not a stone had been moved during a thousand years and more (see, also, text, pages 748 and 753).



Photographs from Robert Coulman Murphy

A STRATEGIC ANGLE IN THE WALL OF DUN AENGUS

In the middle distance are the outer defenses, the checkered slopes of Inishmore, and the mountains of Connemara beyond the water.



A FUNERAL CORTÈGE ON INISHMAN.

The entire village has turned out and all the women are wearing their red petticoats over their heads—a strangely incongruous sight.



Photographs by A. W. Cutler.

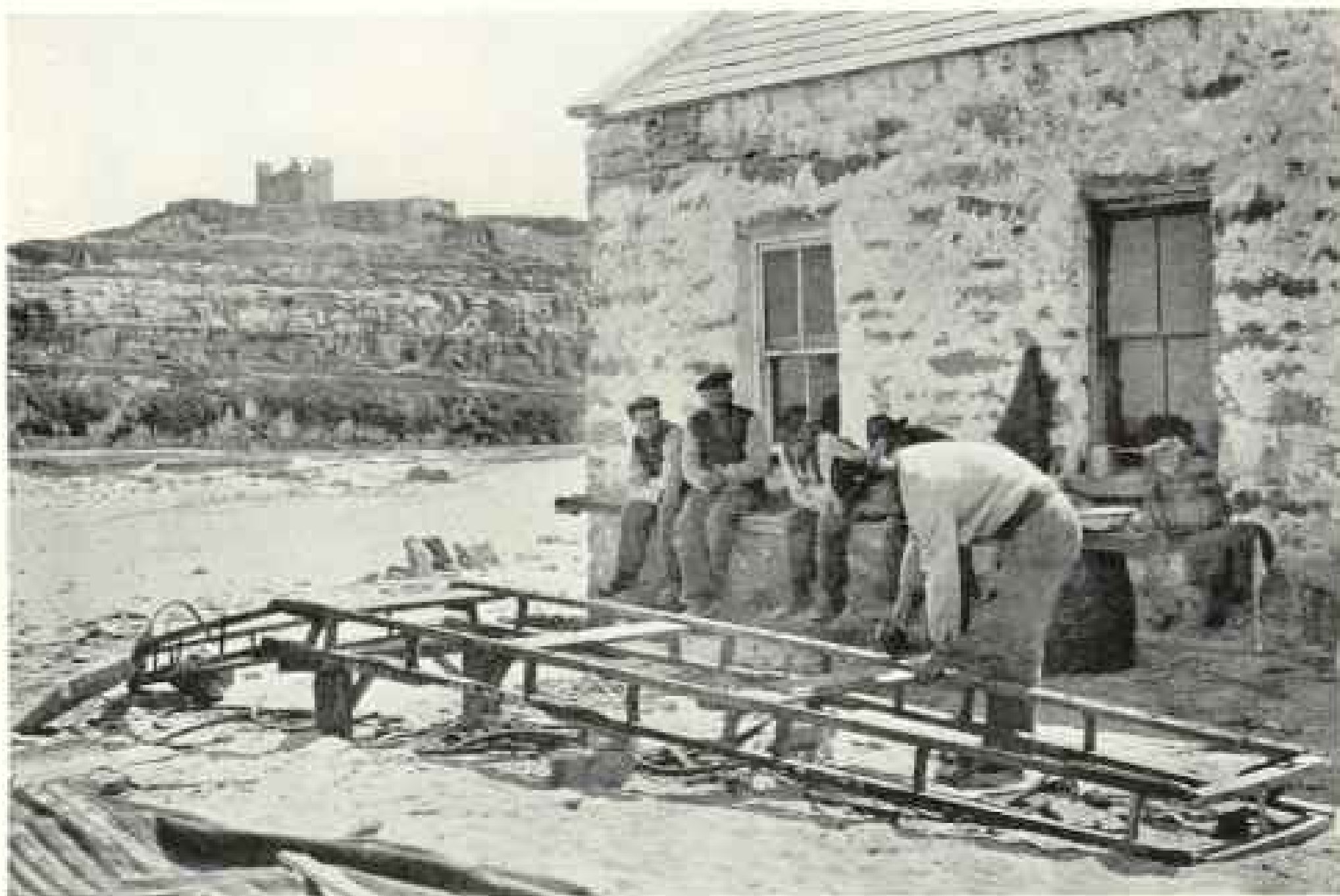
ONLY RELATIVES OF THE DECEASED SURROUND THE GRAVE DURING THE BURIAL SERVICE.



Photograph by A. W. Cutler

AT AN IRISHMAN WELL.

The supply of water never fails, but it never flows abundantly and has to be scooped up by the cupful.



Photograph by A. W. Cutler

## MAKING A CURRAGH

The frame of seasoned deal is constructed first, the vertical struts between upper and lower moldings being secured by wooden wedges. Into these timbers are set the well-steamed oaken hoops of the rounded bilge and bottom. The whole is then covered with canvas and soaked with hot tar.

spread the news, so that the owner could not help but hear.

A search for vices among the islanders is not likely to be profitable, unless an inclination toward poteen, or "the crayture," may be so classed. Stills are sometimes set up in the intertidal zone of remote beaches, because the law is said to fix responsibility for the illicit manufacture of liquor upon the owner of the property rather than the actual operators. Below high-water mark is, of course, no man's land.

Legalized dispensers of ales and whiskey are found in every village, the only outward distinction between such places and other cottages being the "seven-day license" sign above the door. The bar-rooms are unappetizing, the glasses unwashed, and the prices high.

No shop seems to be patronized to such an extent that selling liquor forms the sole occupation of the proprietor. Drunkenness is reasonably uncommon and is traditionally associated with death by drowning. Of course, one is entitled to become a trifle mellow at a wedding or a wake.

The only calamity-howler with whom I conversed at the Arans was a handsome, aristate old fellow, who discoursed in the gloomy and familiar manner upon the degeneration of youth as compared with the finer old stock. He never mentioned liquor, however, but attributed the slipping to the excessive and increasing drinking of strong tea by children. Perhaps he was right.

## EVASION OF DOG TAX IS ISLANDERS' CHIEF SIN AGAINST STATE

One minor disregard of the law awakens almost universal sympathy. Opposition to dog-licensing is so general that enforcement is now practically dead. The only apparent breach of hospitality on record is connected with this subject.

Two sprightly American girls rowed a curragh themselves from Inishmore to Inishman, where they naturally expected to be met by a welcoming throng. Instead, they landed upon an utterly deserted island. As soon as they had walked ashore, however, disclosing their feminine attire, the villagers, with countless dogs on leashes, began to pop out from behind every wall.



Photograph from Robert Cushman Murphy

TO "THE ARAS OF THE SEA" EARLY SAINTS VOYAGED IN SUCH CURRAGHS

For 300 years the monastic school founded here by St. Enda attracted religious scholars. Among the visitors was St. Brendan the Navigator, hero of a legendary voyage in the Atlantic. He and others braved the stormy waters in fragile craft resembling the Aran product of to-day.

It developed that a rumor of tax-collectors had run through the island, and the appearance of a curragh with unfamiliar oarsmen had caused all the canine members of the households to be spirited away.

Under the Free State the "peelers" have gone and the police of the Arans now have common interests with their neighbors. A visitor would conclude that they enjoy a soft post. They have a well-built headquarters at Kilronan and are equipped with a motorcycle or two, even though there are no automobiles to chase.

Judging by the wariness of the men in the far villages, the police occasionally make a gesture against poteen. Nevertheless, they seem most at home in the evening, taking part in the cottage dances, where their smart uniforms and cosmopolitan haircuts make odd contrasts with the homespuns, knitted jerseys, and forelock bangs of the other swains.

WEDDINGS ARE THE CHIEF SPECTACLES

Among the diversions for which the Aran Islanders find opportunity in the

midst of their labors, such as dancing, foot-and horse-racing, and contests between picked curragh teams, it is probable that first place as a promoter of jollification goes to a wedding. At any rate, weddings furnish the chief spectacles of the islands, and many other sports enter into their celebration.

Marriage among the young people is arranged by the parents, and the ceremony is consummated within a day or two after the agreement. The priest is consulted principally, so that he may pass upon the question of consanguinity, for the inhabitants of the three islands are, naturally, much interrelated.

Upon invitation of a cousin of a bride-to-be, we attended the wedding of a young couple of Onaght, a village at the far end of Inishmore. The ceremony took place in a chapel midway of the island.

When we arrived the building was already filled with kneeling friends, with a swarm of tufted-topped boys and young men occupying the choir and leaning far forward, so as to miss nothing. The bride





Photograph from Robert Cushman Murphy

EACH CANOE LIES LIKE A TIRED ANIMAL IN ITS OWN SPECIAL STALL.

The curragh is practically the same craft which Caesar saw in Britain, the principal change being the substitution of canvas for the cowhide cover.

and bridegroom knelt at the altar rail, with an attendant at each side. The wedding ring reposed on the rail, on top of two silver half-crowns, which seemed to be the fee.

The service was in Irish, except for the Latin ritual. It was all very simple and solemn, and as soon as it was over the guests poured out for the beginning of the fun, while the man and wife withdrew to sign the register.

Persons of all ages now thronged the roadway below the church. Women and girls had clambered onto half a dozen jaunting cars, and men and boys had mounted, two and even three together, to the bare backs of horses.

Other guests, perhaps not so close to the happy union, were prepared to walk the three-mile stretch to the new home. But there was no hurry about starting.

A fiddler arrived and the dance was on. One after another the young men volunteered, or responded to calls, and showed their prowess on the hard earth of the road, while the crowd kept time and cheered.

The bride seemed to be much preoccupied with whispered communications from older women; she also found time to peek into a small package containing a few trifles from New York, which my wife had brought her.

#### A 24-HOUR JUBILEE

After a half hour's dancing, the procession began to form, and one by one the units of a mixed cavalcade started with a jerk or a leap and went tearing madly toward Onacht. Steeds bearing their pairs or trios of riders alternated with jaunting cars holding from six to nine passengers, the strains of the fiddle still coming back more and more faintly from one of them.

A she-ass and her spindly foal were caught in the avalanche, and both flew along in line, there being no loophole of escape through the walls of the narrow road. Pedestrians squeezed aside, but still had room and will to thwack the passing horses on the haunches.

By the time we had trailed up to the bridal cottage, by the sedate transportation of Shanks' mares, we found the 24-hour



Photograph from Robert Cushman Murphy

#### WEDDING GUESTS ON THEIR WAY TO THE FESTIVITIES

Inishmore boasts a number of jaunting cars, while at Inishman and Inisbeer the traveler must choose between foot and horseback.

jubilee in full blast. A concertina had been added to the orchestra and a second and a third fiddler appeared later. Into a kitchen of not more than twelve by fourteen feet fully sixty persons had crowded in the form of a hollow square, with space in the middle for four dancers. Here old and young couples were succeeding each other in jigs and reels, and the old seemed equally accomplished and more persistent. The light was dim because the door was low and the two windows small. The August day was warm for the Arans, and a mingled odor of turf smoke and moist woolems pervaded the room.

In the adjacent bedchamber, toward which I wedged my way behind the hospitable bridegroom, tea was being served, together with broken loaves and cake.

With a silencing gesture, the husband produced a bottle of gin-clear poteen from under the band of his trousers and poured out two drinks. It had a curious taste, like licorice, and burned all the way down.

An elderly hostess was presiding over the bedroom. Then there were several little girls who had escaped from the press of humanity in the kitchen, and an old

blind man famous for his ability to do the difficult dance figure known as the salmon leap. With our arrival, conversation changed courteously from Irish to English, and "God bless you's" came thick and fast.

#### THE BRIDE IS STOLEN AT END OF MONTH'S HONEYMOON

The poor bride, standing in the short passage between the rooms, was still listening to interminable advice from women's mouths close to her ear. Beyond, the monotonous strains of the instruments and the fast rhythmic thump of feet continued to resound.

Suddenly the hostess seized a hand of the bride, sat on a bench beside the doorway, and began to sing. The music and the dancing ceased and all listened in rapt silence. For five minutes or longer she chanted in a quavering but pleasant voice. We understood, of course, nothing of the purport of the song, which may have been improvised. As soon as she had finished, the riot was resumed.

The long, pellucid twilight had settled over the Bay of Galway when we set out



Photograph from Robert Cushman Murphy

#### THE BRIDE AND BRIDEGROOM

The happy pair are about to climb to the seat of the jaunting car which will lead the cavalcade homeward.

on our seven-mile walk from the wedding toward Kilronan, and we found all traffic, both horse and foot, heading against us. Many had for one reason or another delayed coming to the celebration until evening.

The merriment of the night was to overshadow that of the day, and we learned later that dancing continued until dawn. Only then were the newly married left to themselves, not to be disturbed further by their neighbors until a month had gone by. At the end of that period it is the custom for the bridegroom's friends to steal away the young matron and carry her back to her parents' home for 24 hours, which furnishes an excuse for another round of hymeneal dancing.

During our brief stay, it did not fall to our lot to attend an Aran funeral and to hear the keening of the women (see page 768). The dead of modern times are still buried in the grassy courts of ancient chapels, as elsewhere in Ireland, but square pillars, surmounted by small limestone crosses, are often erected as memorials along the island highways.

Most of the actual gravestones of earlier generations are flat tablets of huge proportions, while the recent ones are more often beautiful Celtic crosses which harmonize with the adjacent medieval structures.

#### THE FAIRIES OF THE ARANS

Thus far I have dealt with the visible population of the Arans; but unseen folk still exert an important influence upon living men and women. To learn anything of the fairies, it is necessary to open the subject naturally, casually, and with complete gravity. A direct attack or a light or inappropriate question will seal the lips of any possible informer. The moment may come on the walls of one of the immemorial duns, on a sunny, calm, late afternoon, when, stretched out lazily with a single companion, you can look down the slopes of the timeless rocks and see, as St. Brendan saw, "the mighty, intolerable ocean on every side."

Perhaps only the far-away cry of a curlew or the whish of a falcon's wing may break the contented silences; perhaps a flock of coral-billed choughs may flutter

past like falling leaves. Rock pipits and "Willie wagtails" will walk close to your quiet forms, and rotund Old World robins will inspect you with mysterious big eyes from the clinging ivy of the forts.

Perhaps, I say, the moment may then come, for in this island world, where wonders yet occur, the birds themselves supply a ready link with states beyond our own. Do not the sandpipers lay their four pointed eggs in the form of a Maltese cross, so that the very nest is held in veneration? And does not the king of birds, which is not the sea eagle, but the tiny and explosive wren, exercise a force which colors the life of men as well as that of fowls?

At Inishman we heard, indeed, of a man suffering from some malady that could be cured only by the application of a king's blood—a remedy that seemed beyond power of attainment until it was suggested that the blood of the king of birds might possess the royal healing virtue. Up to the date of our departure the beneficent effect of the wren's sacrifice had not had time to act.

#### THE WREN HAS A REGAL REPUTATION THROUGHOUT EUROPE

The regal reputation of the wren is ancient and widespread in Europe. It is based upon the fable that the birds once decided to choose as their sovereign the one that could fly highest. The eagle mounted above all others and was about to be acclaimed, when from still higher came an exultant burst of song from the diminutive wren, which had risen, unseen and unfelt, upon the eagle's back.

To this day, in remote parts of Ireland, the bravely wintering little wren is hunted on the Feast of the Three Kings and addressed in song as the king of birds, which hardly compensates it for the taking of its life.

But, aside from such merely half-supernatural phenomena, the Arans are full of *shee*, or Good People, in various guises, although in these times there are not so many as there used to be. They are of both sexes and mostly small—about the size of

a four- or five-year old child. They lurk in the prehistoric duns, the grottoed well-springs, the deep clefts in the limestone.

They busy themselves in all sorts of human-seeming affairs. Thus they gather kelp along the shores at night. Sometimes you see them at work, and more often you hear the swish as they jerk the long strands of seaweed out of the water. From the brink of a cliff you may even discern little heaps of kelp, but when you go down to the beach there is nothing there.

#### THE "SHEE" ARE NOT MALIGNANT, BUT CAPRICIOUS

In general the shee are not malignant or even unfriendly; often they are helpful, but their disinterestedness is never to be trusted. Their visibility to human beings is quite capricious, and the control sometimes lies with the fairies themselves and sometimes with a higher power. One person may see them frequently, another only once in a lifetime, and many not at all. It is the same with every magical thing. The woman of a house at Inishman, for example, asserted that the luck-bringing four-leaved shamrock was as common as the three-leaved kind. The difference lay altogether in the eyes of the seeker; so that one with the gift might quickly gather a double handful of the four-leaved while other mortals scoured the fields in vain.

Intimates of the Good People are harder to find nowadays than of old, but at Kiltoran there is a native Rip van Winkle who was taken by them in his youth and kept for 20 years in the *Tir a-an-Og*, where no time passes. His experiences were of such a nature that he has since been able to think of nothing else.

He can be addressed, alas, only in the tongue of the Gael; so when he shuffles past, aged and bent, clad in pampooties and blue-gray homespuns, and tapping the limestone with a crooked cane, you may only gaze upon his wrinkled, serene countenance and wish that you might see the visions behind it.

"For he on honeydew hath fed,  
And drunk the milk of Paradise."



# THE TRANS-ASIATIC EXPEDITION STARTS

BY GEORGES-MARIE HAARDT

*Leader of the Expedition*

AUTHOR OF "THROUGH THE DESERTS AND JUNGLES OF AFRICA BY MOTOR," IN THE NATIONAL GEOGRAPHIC MAGAZINE

**A**CROSS desert wastes and wind-swept plateaus, over snow-clad mountain passes, through strange lands where ancient civilizations flourished, and into vast, mysterious, teeming China—such will be the route of the Citroën Trans-Asiatic Expedition which left Beyrouth, Syria, early in April.

After traversing the countries near the cradle of Christianity and those marked with the exploits of Alexander and Genghis Khan, we shall borrow in large part the itinerary which Marco Polo followed.

With Syria, Iraq, and Persia already traversed, we shall now push through Afghanistan by way of Herat and Kabul, and thence to Srinagar, capital of Kashmir. Our way will then lead northward to Gilgit, over high passes to Kashgar, and on to Peiping (Peking). Here we shall turn south to Saïgon, in Indo-China.

We shall make this crossing of the great continent in automobiles especially constructed to meet the unusual demands that will be put upon them.

Long convinced of the feasibility of using automobiles for desert transportation, during the winter of 1922-23 I led an automobile caravan from Touggourt to Tombouctou to achieve the first motor crossing of the Sahara. A journey which formerly called for many weeks, and sometimes months, of arduous travel was accomplished with track-type machines in 20 days, and the camel was no longer lord of the desert.

Numerous experimental trips followed until, in 1924-25, with the aid of my friend M. Audouin-Dubreuil, I organized another expedition to go by motor from Algeria to Madagascar, Dar-es Salaam, and Cape Town. This journey, which we called "The Black Crossing," was productive of important scientific and pictorial results, and an account of it was published in the NATIONAL GEOGRAPHIC MAGAZINE.\*

\* See "Through the Deserts and Jungles of Africa by Motor," by Georges-Marie Haardt, in the NATIONAL GEOGRAPHIC MAGAZINE for June, 1926, and "The Conquest of the Sahara by the Automobile," January, 1924.

The tests to which these travels on the Dark Continent put our cars were conclusive, for with their track-type treads they overcame rough ground, desert sand dunes, and tropical marshes. Their suitability for such work was established. Our appetites were whetted for broader fields to conquer.

THE NATIONAL GEOGRAPHIC SOCIETY  
COÖPERATES

With our African experiences behind us, Audouin-Dubreuil and I set out to perfect our present plans. M. André Citroën, whose never-failing interest in scientific exploration made possible by his sponsorship our previous expeditions, again placed at our command his expert staff of technical and construction engineers as well as very generous financial support. The Pathé-Natan Society contributed trained personnel and apparatus for the making of talking pictures, and also gave the expedition important financial assistance. The French Government and various scientific organizations lent their encouragement, too; but interest in our project was not confined to the borders of France.

I was especially proud and happy to receive the aid and coöperation of the National Geographic Society. This splendid organization assigned to accompany us the Chief of its Foreign Staff, Dr. Maynard Owen Williams, who by means of radio dispatches will keep its far-flung connections throughout the world informed of our progress. It is a genuine pleasure to welcome Dr. Williams to our personnel.

In the course of our journey we shall encounter every variation of temperature, from wintry blasts in the lofty Pamir to the sultry heat of an Indo-China summer; and nearly every kind of terrain, from tropical marshes and desert of sand and rock to high mountain passes.

Because of these vagaries of climate and topography, it is necessary to have two complete sets of equipment—one for general use and one especially designed for negotiating the difficulties attendant on crossing the high Pamir.



THE PRESIDENT OF FRANCE, M. GASTON DOUMERGUE, GREETS MEMBERS OF THE EXPEDITION BEFORE INSPECTING THEIR MACHINES

M. Jacovleff, ethnographer and artist, is being presented to the French Chief Executive by Georges-Marie Haardt, leader of the Expedition. Just behind the artist stands Dr. Maynard Owen Williams, Chief of the Foreign Staff of the National Geographic Society and its official representative on the Trans-Asiatic journey. Behind the President is M. André Citroën.

We left Beyrouth in the "Pamir" cars and plan to continue with them as far as Kashgar, in Chinese Turkestan.\* However, the passes of the Pamir present serious obstacles, and it is possible that, in spite of all our carefully made preparations, we shall not be able to force the machines through to the Chinese plateau. In that event we shall push on as far as possible and cover the remainder of the mountain stretch as best we can—perhaps a foot, perhaps with the aid of yaks.

#### SOME CARS EQUIPPED FOR SPECIAL SERVICE

When we reach Kashgar we shall transfer our equipment to another set of cars, which will be awaiting us there. Under the command of Lieutenant Commander Point, these were dispatched to Peiping by steamship the middle of February and are now proceeding west from there to our rendezvous.

\* See also, "On the World's Highest Plateaus," by Hellmut de Terra, in the NATIONAL GEOGRAPHIC MAGAZINE for March, 1931.

All of the cars are track-type, but the "China" units are larger and heavier than those with which we shall attempt to cross the Pamir. There are seven of these China cars, all equipped with trailers.

Two of the cars will carry photographic equipment for sound-recording motion pictures and natural color photographs. One will be used as a medical car, and has been so designed that it can very easily be converted into an ambulance and field hospital. Two skilled surgeons, Doctors Delastre and Jourdan, will look after the health of the Expedition and, as time permits, in some of the more remote regions through which we pass, will treat the ills of the native population. Nothing we can do will win their good will more quickly or completely.

The Expedition carries a complete repair outfit and spare parts enough practically to rebuild an automobile if necessary.

One of the most important units of our motor caravan is the mess car. Modeled



BEFORE BEING SHIPPED TO PEIPING (PEKING), CARS OF THE "CHINA" GROUP WERE TESTED IN THE COUNTRYSIDE ABOUT PARIS

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A BIT OF HEAVY GOING NEAR FONTAINEBLEAU SERVES TO PROVE THE EFFICIENCY OF THE TRACK-TYPE CARS

Rough ground is no serious obstacle to these machines. The roller in front, the track-type tread, powerful engines, and skillful drivers make desert, marsh, or mountain passable. In the upper illustration M. Georges-Marie Haardt's car leads the way, followed in order by M. Audouin-Dubreuil's; two sound-cinema cars, the wireless car, the kitchen car, and the medical car.



Photograph by American Colony

EXPEDITION CARS LEAVING MEDITERRANEAN SHORES FOR THE  
DESERT JOURNEY

The hand treads on the rear wheels should enable these automobiles of the Pamir group to negotiate the lofty passes between Afghanistan and Chinese Turkestan, where the explorers will join the China group of cars now westward bound from Peiping.



Photograph by Maynard Owen Williams

UNCRATING TRAILERS AND SUPPLIES ON THE BEACH AT  
BEYROUTH, SYRIA

The Vice-President of the National Geographic Society, Dr. John Oliver La Gorce, accompanied the party as far as Beyrouth to conclude final details and represent The Society at the departure of the Expedition on its 15,000-mile journey to Indo-China and return.



somewhat after the fashion of a railway diner's kitchen, it has a center aisle flanked by specially built kerosene stoves, fireless cookers, various chopping, pressing, and grinding machines, dish racks, and food containers. On the outside of the car are folding trays which may be used as serving tables.

To prepare a meal for from 30 to 40 people consumes considerable time, and, as we must make the best possible use of our daylight hours, the food will be cooked on the mess car while moving toward the predetermined stop.

One car in each group is equipped with powerful radio sending and receiving sets having a radius of 5,000 miles. The radio car of the Pamir group will go only about halfway between the coast and the mountains, where it will remain to relay to Europe and America messages sent from the station of the China group, which will continue on with the Expedition from Kashgar.

Each of these units is equipped with a 67-foot mast made in sections which can be telescoped together and packed into a very small space. Under normally favorable conditions, aerial masts can be raised and the sets put into operation in less than half an hour.

Every car has accommodations for five persons. On the two-wheel, duralumin trailers is stored their sleeping and camping equipment, including a large tent rolled and fixed to the top, running water, and a strong storage-battery lighting system. The beds, with blankets, sheets, and mosquito nets, are fitted into small water-tight trunks (see page 781).

Each car of the China group has a six-cylinder, high-compression, 50-horsepower motor, the gasoline for which is carried in two tanks of about 60 gallons' capacity each, with an emergency tank in reserve which holds 20 gallons.

The carburetor takes in air through a heavy screen in order to avoid the damaging effect of sand and dust. The radiator is of an unusually strong type, built to condense evaporated water if necessary. In tropical climates the metal hood is replaced by one made of fabric, the sides of which can be rolled up.

A large, freely turning, horizontal steel cylinder is carried in front of the radiator

to enable the car to negotiate rough ground, ravines, and steep banks (see page 778).

A fully loaded unit, weighing more than five tons, can easily negotiate 16-degree grades and stop at will either ascending or descending. The front wheels have low-pressure balloon tires, which, together with easily replaced rubber blocks on the track-type bands, give remarkable riding comfort.

Removable metal seats, which can be periodically disinfected by fire, are placed forward on the outside of the body to accommodate native guides and helpers who will be employed in the various countries traversed.

#### CARS DESIGNED TO OVERCOME HEAVY GRADES AND HIGH ALTITUDES

The mountain cars, equipped with four-cylinder engines and superchargers, are lighter, narrower, and have a somewhat different type of tread. In designing them, speed has been sacrificed to power, for they will attempt to carry some of my associates and me to a higher altitude than any motor vehicle has ever before been driven.

The Pamir passes which we shall try to negotiate are nearly as high as the highest mountain in all Europe, and we have had to take steps to compensate for the loss of power resulting from travel in such a rarefied atmosphere. At 16,000 feet this amounts to about 50 per cent, and we have had to resort to both an extra gear box and a special adaptation of the supercharger to overcome it. These cars will be able to negotiate grades of 35 degrees.

To guard against the extreme cold which will be encountered, the cars are equipped with felt lining for the hood and radiator, double steel sheets under the motor, and heaters on the exhausts, which are built so as to lessen the shock of the gas explosions, lest in that very "thin" air even a slight percussion might start a dangerous avalanche.

No greater difficulties faced Hannibal in getting his elephants over the Alps than loom before us in our attempt to maneuver automobiles across the Pamir.

I have no intention of trying to make a given distance each day. Neither the nature of our researches nor the construction of our machines will permit us to



© American Colony

EVERY APPURTENANCE OF SAFE AND COMFORTABLE CAMPING IS INCLUDED IN THE EXPEDITION'S EQUIPMENT

A trailer of the Pamir group carries all the essentials for sleeping accommodations. The folding cots, bedding, and mosquito nets are carried in waterproof boxes. Experienced men can make or break camp in six minutes (see, also, text, page 780). M. Sauvage, of the photographic staff, takes a peek at his "home in Asia."

move speedily. The normal speed of the China type cars is from three to eighteen miles per hour, although the scout car can do about seven miles better than that. The Pamir machines have a range of from one to twelve miles an hour.

Our scientists and artists must make frequent stops and have ample time for their work. Thus it is unlikely that we shall make more than 100 to 150 miles a day over reasonably good terrain, and this will, of course, be reduced when serious natural obstacles are encountered.

The most formidable and time-consuming of these will probably be streams which are too deep to be forded and too wide to be easily bridged. M. Charles Brull, who, with Messrs. Kegrasse and Pennaud supervised the construction of our mechanical equipment, will be taxed with solving such engineering problems *en route*. However, as he cannot rely upon finding suitable construction materials at the scene of the emergency, we are taking some of the necessary things along with us.

The cars are so constructed that their motors will function properly in water up to three feet, but many of the rivers we shall have to cross will be much deeper. Each car, therefore, carries a large, water-tight canvas bag which French military engineers designate as a "haber" bag. Within it are placed small rubber bags, and when these are inflated the device will float a weight of 1,200 pounds. By fastening together seven of these improvised pontoons and placing a portable platform over them, we have a raft capable of supporting any one of the cars without its trailer. To tow this raft, we have with us a folding wooden boat with outboard motor.

EXACT NAVIGATION WILL BE NECESSARY IN THE DESERT

Some of our travel will be across desert regions, where trails are few and poor or actually nonexistent. To traverse these successfully requires much the same sort of navigation that guides a ship at sea. Observations will be made with the sex-

tant, and we shall enjoy the added safeguard of being able to verify our positions by radio time signals from either Paris or Washington.

It is necessary to be very precise in these calculations, since one must be sure to reach the very rare desert wells. Although indicated on the maps, they are sometimes unmarked by either trees or grass.

However, this procedure will probably be necessary only when crossing the Gobi. We shall, generally speaking, try to keep as close as possible to some native trail and shall utilize the services of local guides.

It is hardly possible to foresee in detail what the Citroën Trans-Asiatic Expedition's contributions to the arts and sciences will be, but certainly our opportunities to gather useful information and make valuable observations should be legion. The staff specialists will record, each in his own way, some features of the life in the countries through which we pass.

M. H. J. Hackin, Director of the Guimet Museum in Paris, will guide our archeological researches, and he hopes to lay the groundwork for more detailed subsequent investigations of the ruins of Syria, Iraq, and especially of the Buddhistic monasteries and shrines of Chinese Turkestan. He will be following the trails blazed by Le Coq, Sir Aurel Stein, Sven Hedin, and Roy Chapman Andrews in bringing to light new facts and features about civilizations long buried under the sands of China's deserts.

The Reverend Father Teilhard de Chardin, a distinguished paleontologist, plans extensive geological surveys along the Expedition's route. Dr. de Chardin will work in collaboration with the Geological Service of China while we are in the territory of that Republic. Four Chinese scholars, under the direction of Dr. Tsu-ming-yi, of the Franco-Chinese Institute in Shanghai, will cooperate with us.

Collections of birds, animals, and plant life will be made under the supervision of M. Reymond.

The ethnic history of Asia is perhaps more involved and more interesting than that of any of the other continents. It is possible that somewhere on its vast central plateaus the human race first emerged from that shadowy borderland which separated

primitive man from the lower creatures. Certain it is that nowhere else in the world can one find a greater conglomeration of races.

The Expedition will encounter Syrians, Mesopotamians, Jews, Arabs, Persians, Afghans, Kashmiris, Tibetans, Ladakhis, Turkis, Kirghiz, Pamiris, Mongols, Chinese, Annamese, Cambodians, Siamese, Burmese, Rajputs, Baluchi, and numerous tribal variations of all of them.

M. Jacovleff will record the appearance of these peoples with brush and pencil, and his pictures should constitute an unusual contribution in the field of ethnology. His work will supplement that of the photographers, Messrs. Sauvage, Morizet and Specht, and Dr. Williams, who will utilize sound-recording and color photography to make permanent records of strange chants, songs, rituals, customs, and costumes. No recorder ever had so varied or numerous a cast or such stupendous settings as will be afforded the photographic experts of this expedition.

#### ECONOMIC LIFE TO BE STUDIED

As we pass east in automobiles along a part of the way which Marco Polo followed, and also along the medieval silk caravan routes from Cathay to the Mediterranean, we shall not fail to note the economic features of the life about us. Agricultural products, industries, trade routes, currencies, and credit systems will all come under observation, with an eye to the possible opening of these far countries to commercial traffic and perhaps in some instances even to automobile touring. Lieutenant Commander Pecqueur will give particular attention to these subjects and will also map some of the country and conduct geodetic studies where possible.

Before us stretch 15,000 adventurous miles of opportunity for exploration and scientific research. We are equipped as has been no other overland expedition of modern times. Our personnel combines experience and scientific knowledge. The results of our efforts should be of real value to mankind in making the contemplative life of the Orient and the fast-moving life of the Western World better known to each other.

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TO carry out the purposes for which it was founded forty-three years ago the National Geographic Society publishes this Magazine monthly. All receipts are invested in the Magazine itself or expended directly to promote geographic knowledge.

**ARTICLES** and photographs are desired. For material which the Magazine can use, generous remuneration is made. Contributions should be accompanied by addressed return envelope and postage.

**IMMEDIATELY** after the terrific eruption of the world's largest crater, Mt. Katmai, in Alaska, a National Geographic Society expedition was sent to make observations of this remarkable phenomenon. Four expeditions have followed and the extraordinary scientific data resulting given to the world. In this vicinity an eighth wonder of the world was discovered and explored—"The Valley of Ten Thousand Smokes," a vast area of steaming, spouting fissures. As a result of The Society's discoveries this area has been created a National Monument by proclamation of the President of the United States.

**AT** an expense of over \$50,000 The Society sent a notable series of expeditions into Peru to investigate the traces of the Inca race. Their discoveries form a large share of our knowledge of a civilization waning when Pizarro first set foot in Peru.

THE Society also had the honor of subscribing a substantial sum to the expedition of Admiral Peary, who discovered the North Pole, and contributed \$55,000 to Admiral Byrd's Antarctic Expedition.

**NOT** long ago The Society granted \$25,000, and in addition \$75,000 was given by individual members to the Government when the congressional appropriation for the purpose was insufficient, and the finest of the giant sequoia trees of California were thereby saved for the American people.

THE Society's notable expeditions to New Mexico have pushed back the historic horizon of the Southwestern United States to a period nearly eight centuries before Columbus crossed the Atlantic. By dating the ruins of the vast communal dwellings in that region The Society's researches have solved secrets that have puzzled historians for three hundred years. The Society is sponsoring an ornithological survey of Venezuela.

**TO** further the study of solar radiation in relation to long range weather forecastings, The Society has appropriated \$65,000 to enable the Smithsonian Institution to establish a station for six years on Mt. Brukkaros, in South West Africa.

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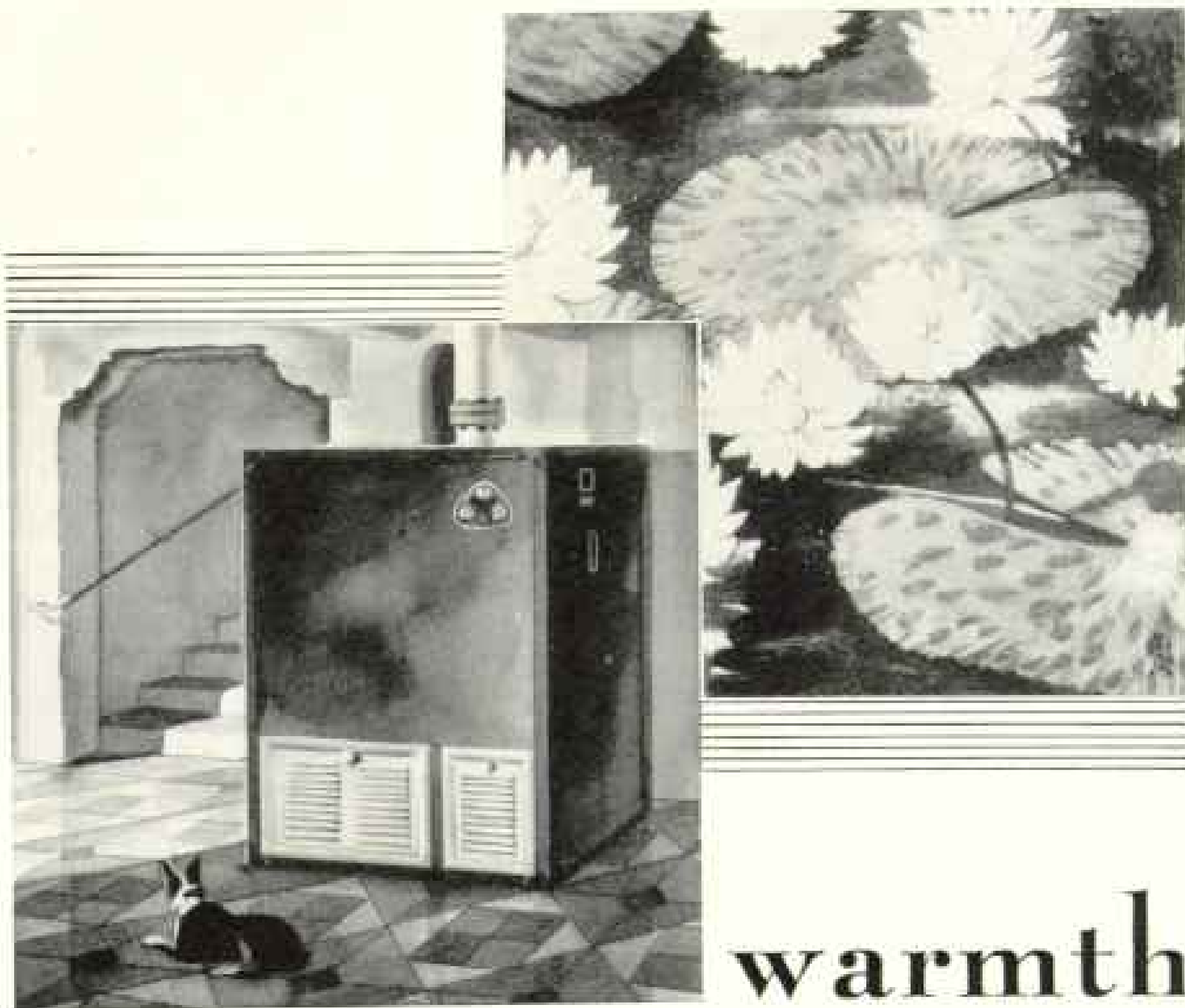
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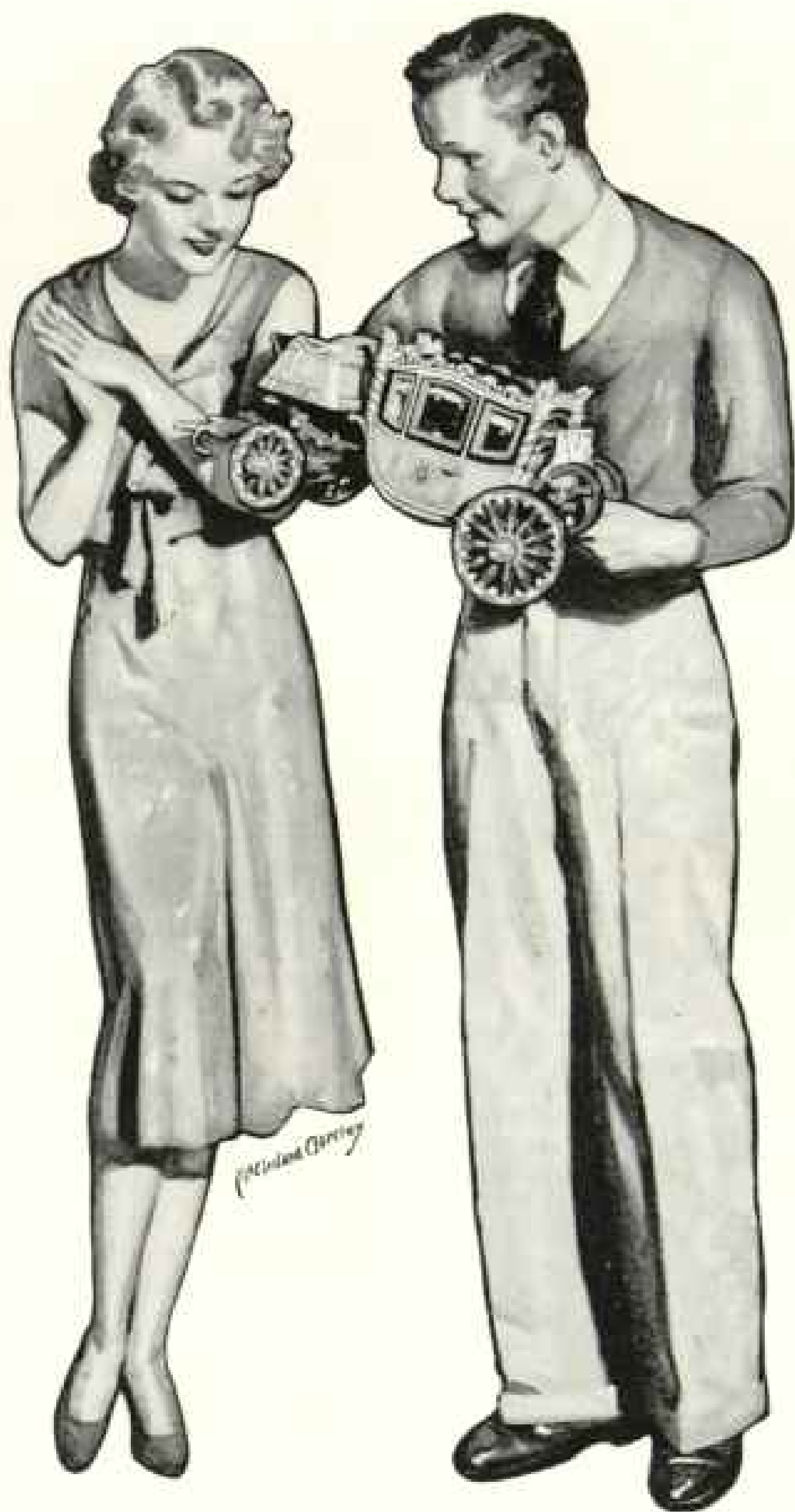
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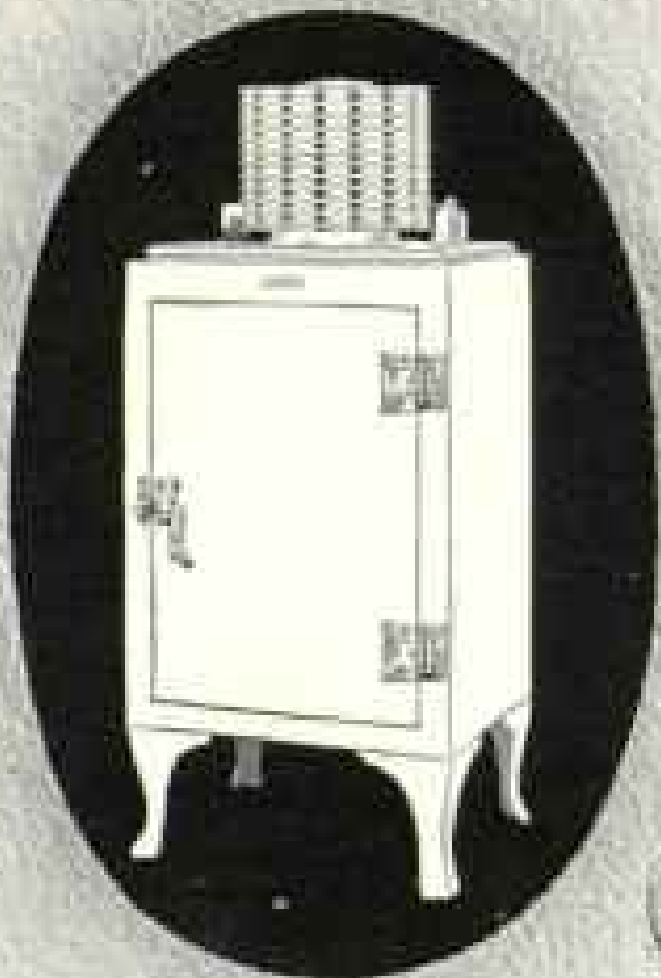
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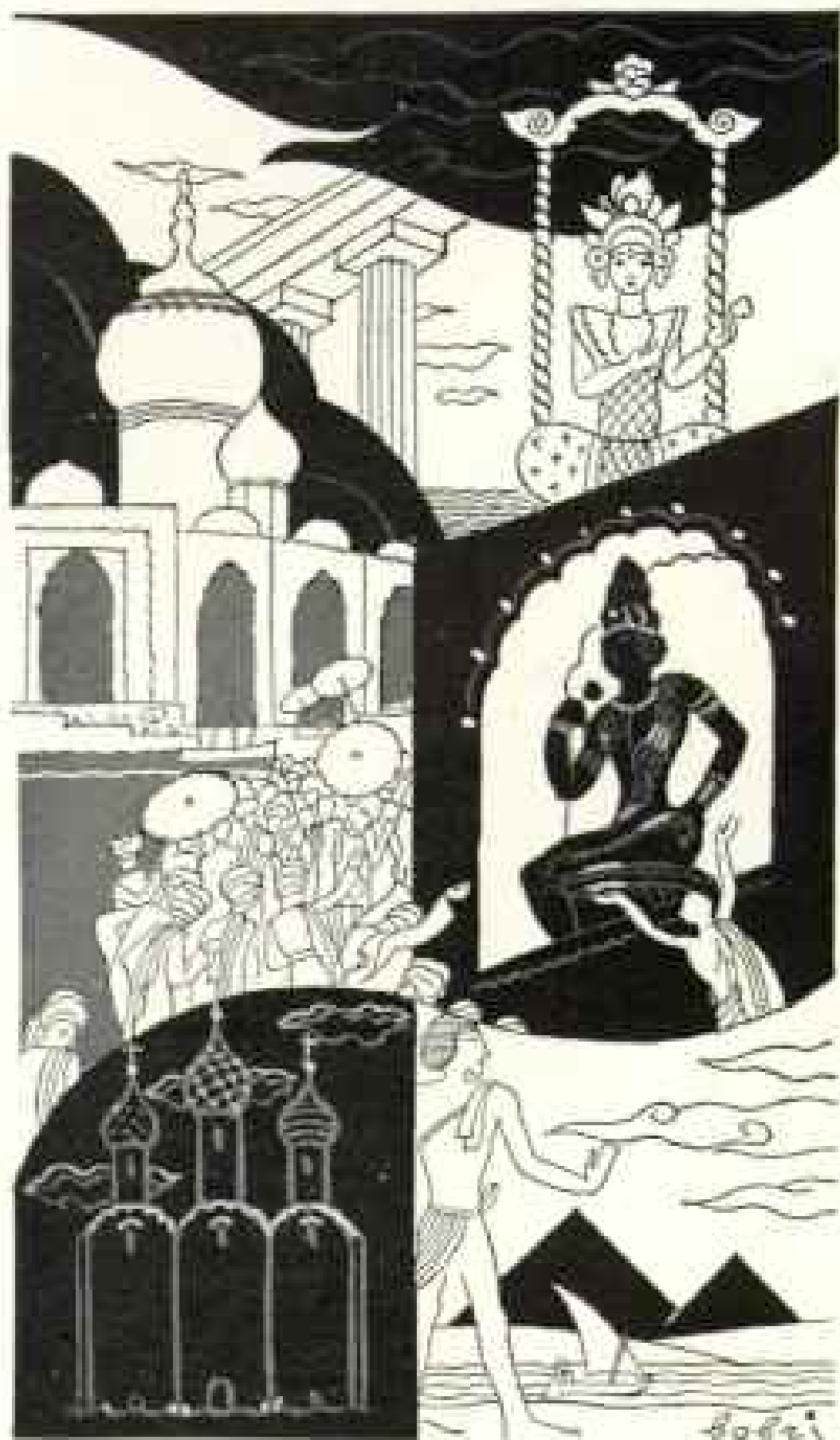
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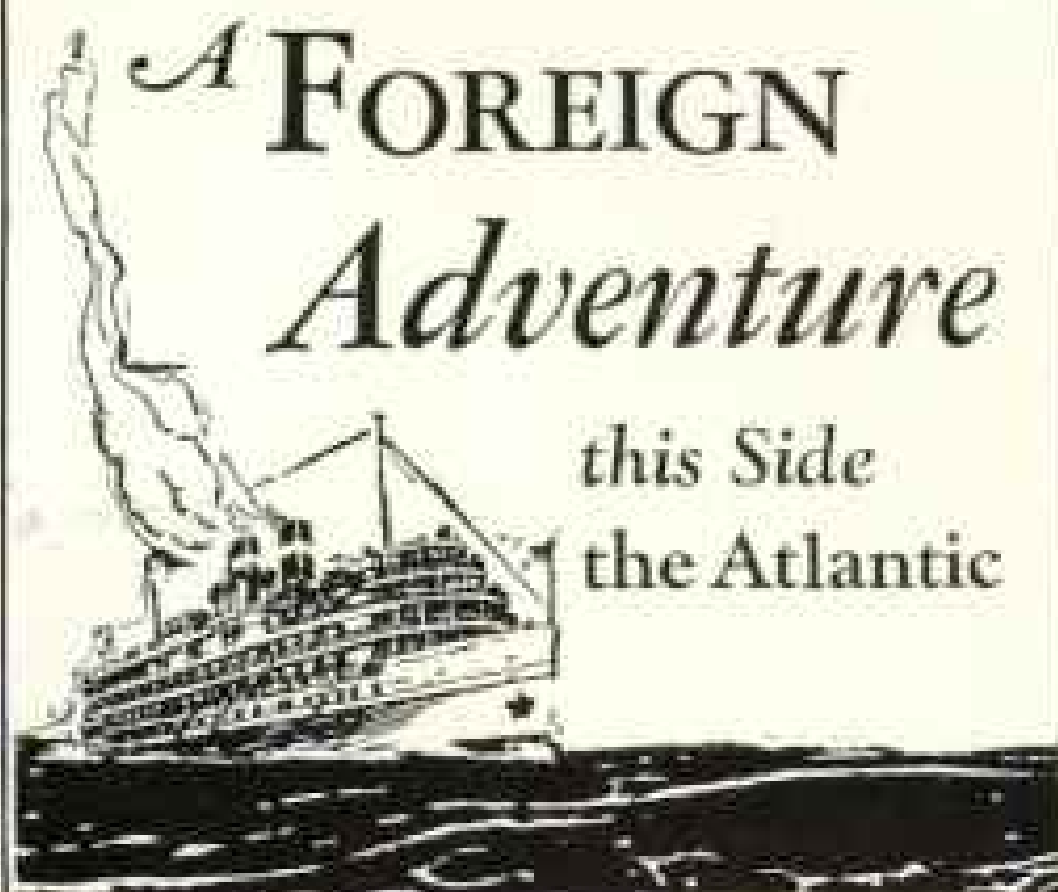
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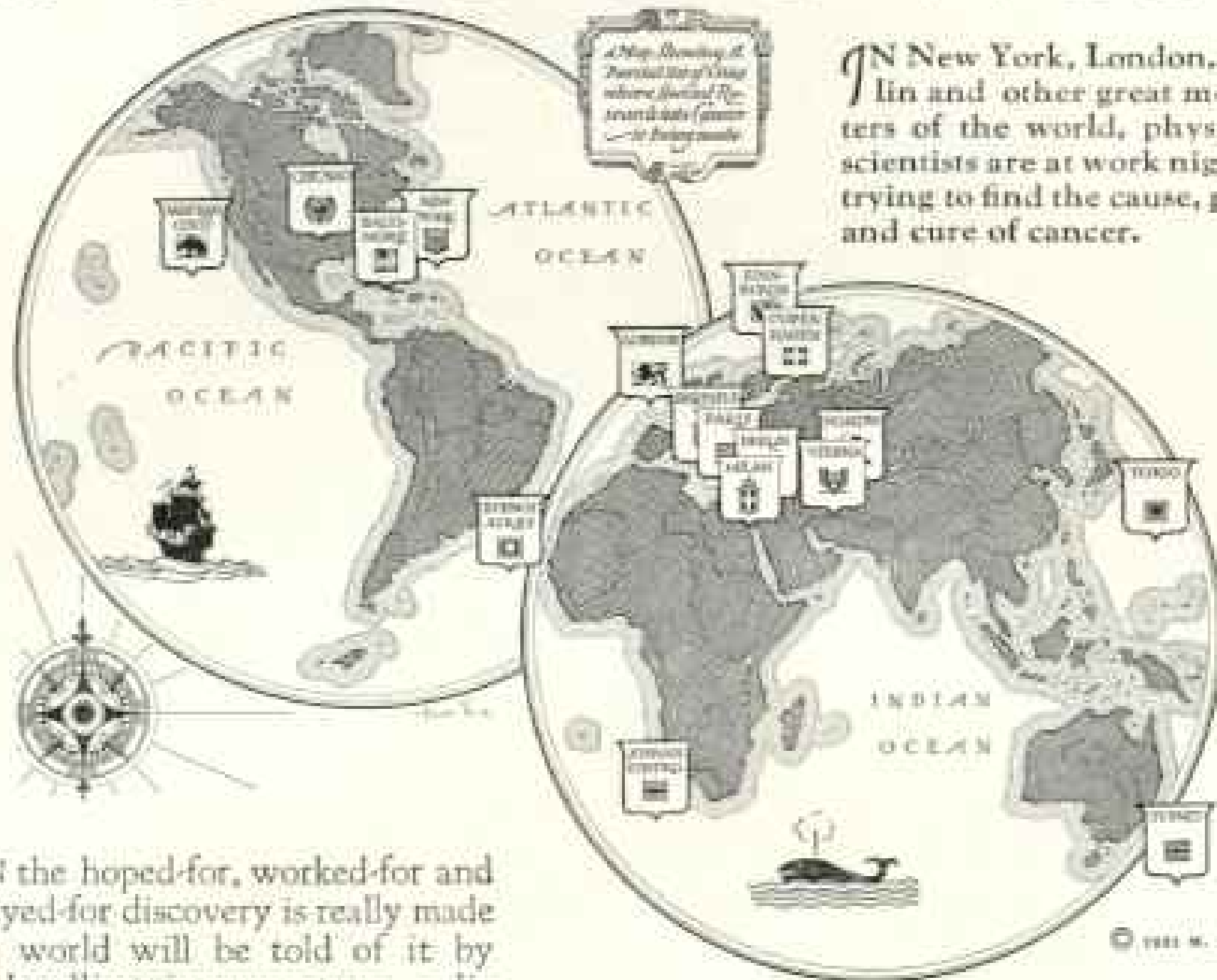
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But while cancer prowls, like a thief in the night, attacking and robbing the unwary, alert defense against it is saving thousands of lives. Complete health examinations, made in time to locate the presence of the enemy, are the best defense against cancer.

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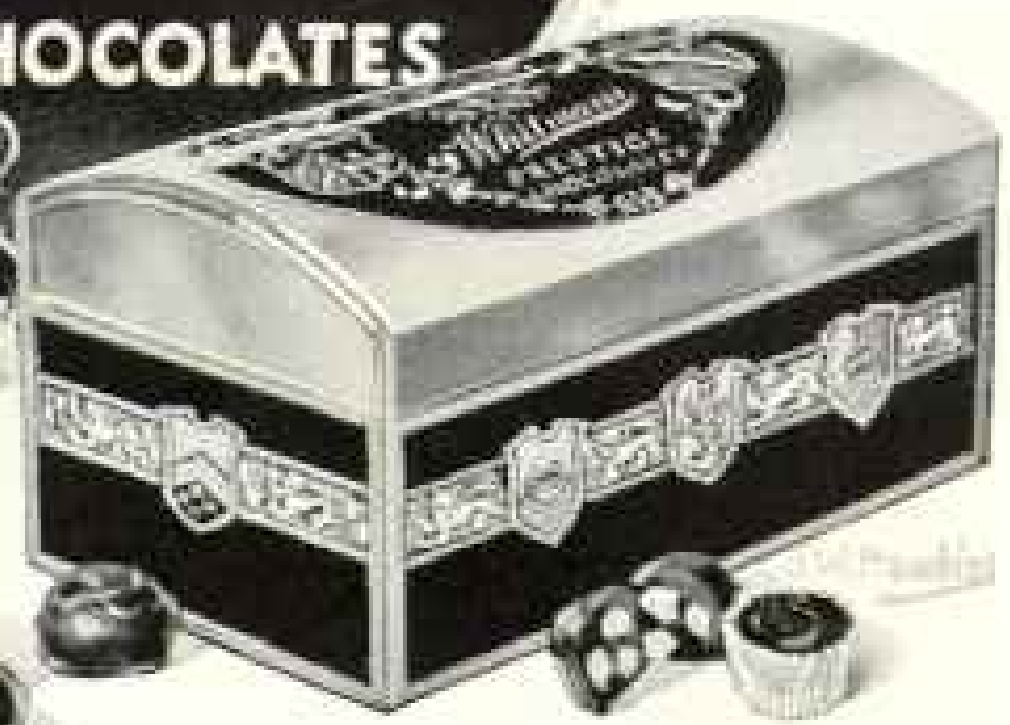
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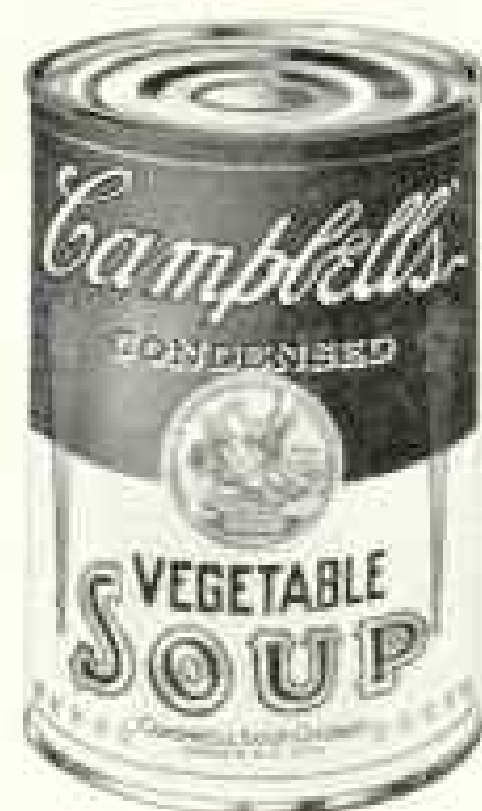
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they are eating 15 nourishing, health-giving vegetables!*

"My, but I do wish that the children would eat their vegetables. It's enough to drive me distracted—the trouble I have every day to coax them into eating vegetables."

Practically every mother has this same story to tell unless she gives the youngsters Campbell's Vegetable Soup. If your children are sulky and balky about eating these foods which they need so much for their proper growth and health, just place a bowlful of Campbell's Vegetable Soup in front of them. Watch it disappear!

And while the children are enjoying the delicious flavor of this soup, they are eating 15 vegetables—and improving their health!

Give your children the real, sound benefits of Campbell's Vegetable Soup. At your grocer's.



### Your choice

- |               |                   |
|---------------|-------------------|
| Asparagus     | Mock Turtle       |
| Bean          | Mulligatawny      |
| Beef          | Mutton            |
| Bouillon      | Ox Tail           |
| Celery        | Pea               |
| Chicken       | Pepper Pot        |
| Chicken-Gumbo | Printanier        |
| Clam Chowder  | Tomato            |
| Consommé      | Vegetable         |
| Julienne      | Vegetable-Beef    |
|               | Vermicelli-Tomato |



Home's the sweetest place on earth  
And victory is dearest,  
For knowing, at each mighty stroke,  
That Campbell's Soup is nearer!

LOOK FOR THE  
RED-AND-WHITE LABEL

MEAL-PLANNING IS EASIER WITH DAILY CHOICES FROM CAMPBELL'S 21 SOUPS



## Masonite makes homes modern

TO THE thousands whose homes no longer classify as modern, Masonite Structural Insulation provides the means to again make them comfortable and desirable. *Rebuild with Masonite!* Then the all-year comforts, fuel economies and quiet enjoyment of modern homes are in your own.

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INSULATING LATH - FRESHWOOD - QUARTZBOARD  
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*THE UNSEEN*

C O U R I E R S

*OF THE SPOKEN WORD*

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THE FAMILIAR TELEPHONE that stands upon your desk at the office or in your home is only a very small part of the great communication system that enables you to talk across the miles with such surprising ease.

Behind it are complicated exchanges, a carefully trained organization of more than four hundred thousand men and women and eighty million miles of wire. These are the forces that make efficient telephone service possible. These are the unseen couriers of the spoken word.

Tirelessly, day or night, without rest or sleep, the Bell System awaits but the lifting of the receiver to carry your voice to any one of thirty-two million other telephone users in this country and abroad, and on ships at sea. It is done so quickly and with so little trouble that few people stop to consider what goes on between the giving of the number and the completion of the call.

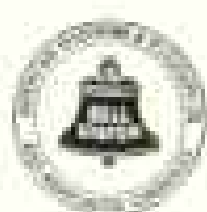
Some time every day—perhaps many times a day—you use some part of a telephone system that has taken fifty years and more than four thousand million dollars to build. The simple words "long distance," which you speak so casually into your telephone, place millions of dollars of equipment at your disposal. Yet the cost of a call from New York to Chicago is only three dollars and but a fraction of that for lesser distances.

Equipment of comparable cost is also needed to connect your home with the thousands or hundreds of thousands of other telephones in your town or city. Yet the charge for local service is only a few cents a day.

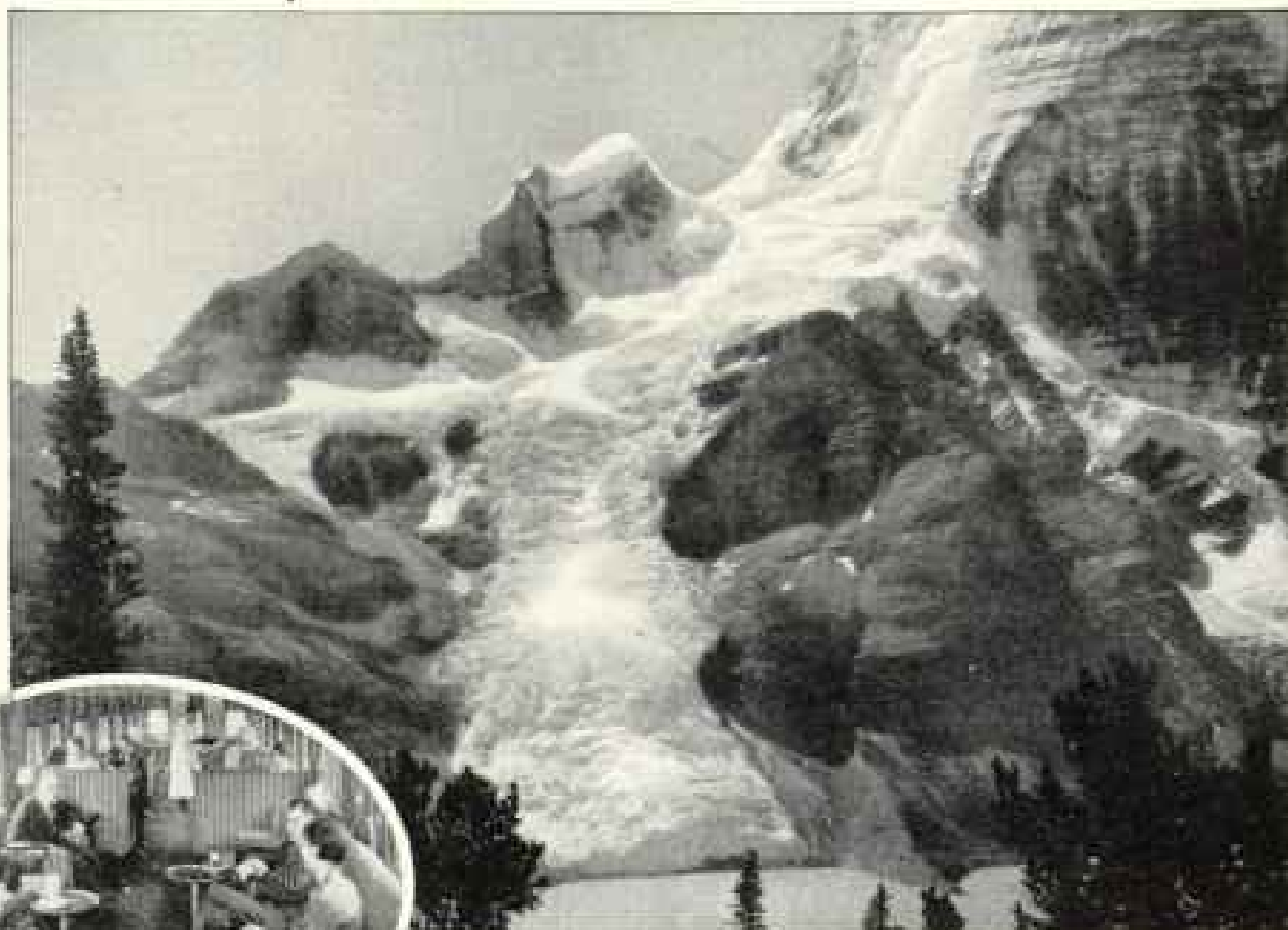
In relation to service rendered, the cost of the telephone is one of the smallest items in the monthly business and family budget. Few things purchased are of such real, constant and increasing value.

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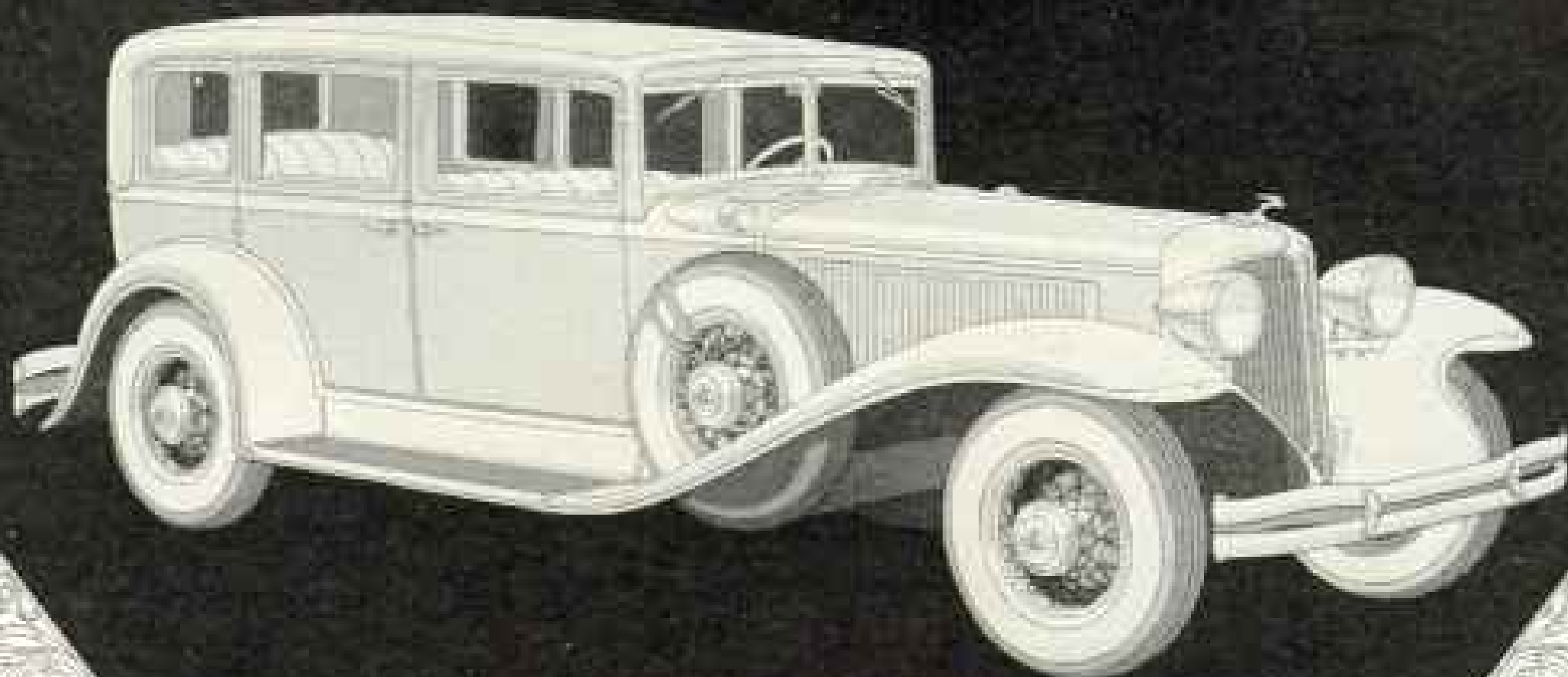
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*For those who enjoy luxurious travel*

**B**EFORE now you may have looked at moderately priced motor cars you thought were admirably smart, but—look at this Chrysler Eight De Luxe.

Before now you have ridden in moderately priced cars which seemed to be very rich and very comfortable, but we ask you—ride in this one.

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This 95-horsepower, 80-miles-an-hour de luxe edition of the Chrysler Eight, now available in five luxurious body types, is patterned after the magnificent Chrysler Imperial Eight. It has that smart double windshield with chrome-plated frames; that lengthy sweep of line; that extremely graceful effect resulting from a low center of gravity; that

visible staunchness that denotes a car of fine quality—that aristocratic look.

Inwardly, the Chrysler Eight De Luxe is sumptuously spaced, upholstered, trimmed and fixtured.

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Drive this Chrysler and "Learn the Difference." See this car and you realize at once that Chrysler value, like Chrysler performance and Chrysler style, is on the plus side in Chrysler's favor.

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*For instance:* On the Lincoln Highway between New York City and Philadelphia, a recent count showed 655 gasoline pumps, of which 201, or 31%, were Ethyl pumps.

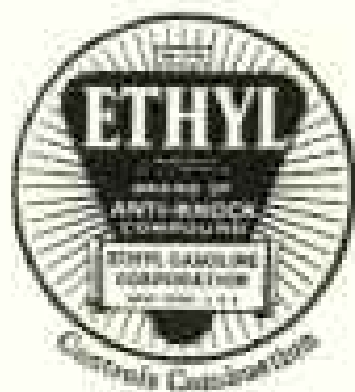
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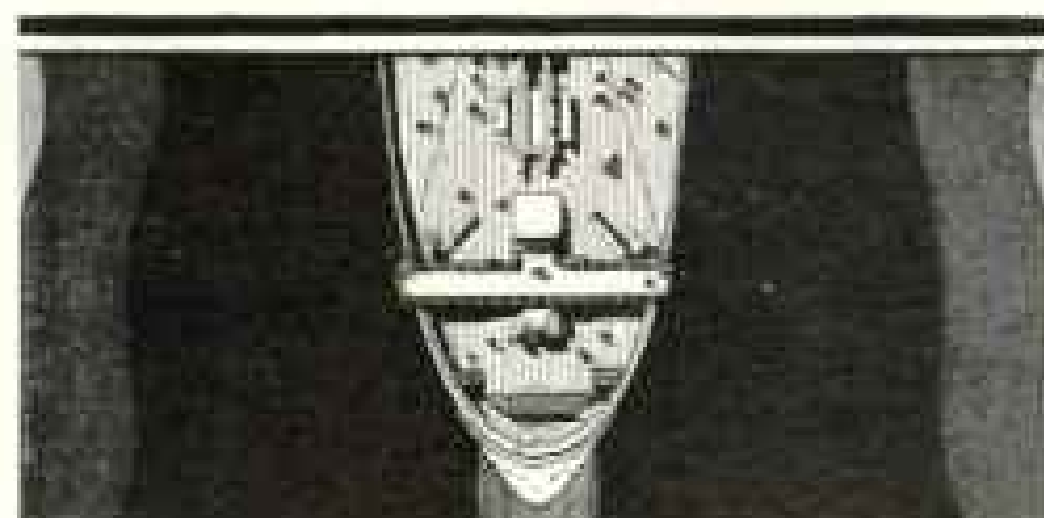


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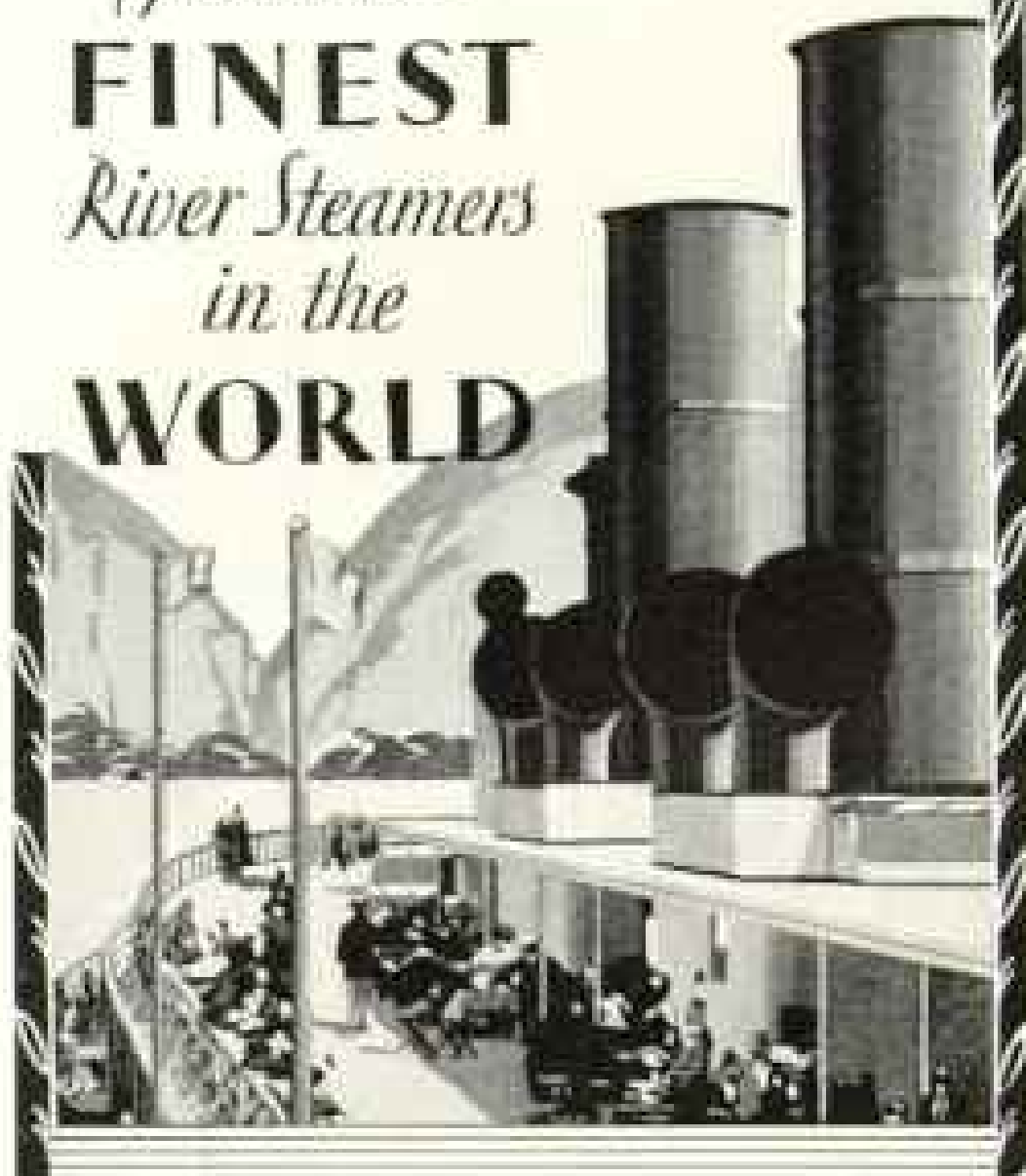
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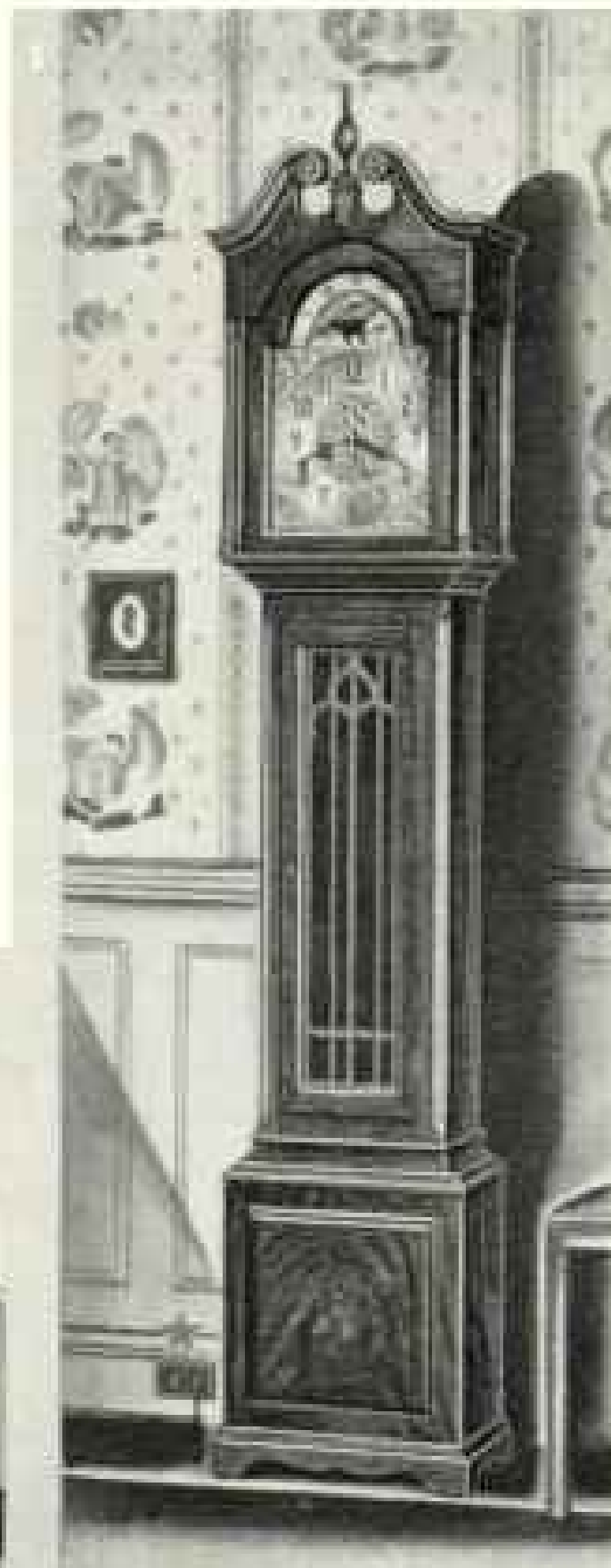
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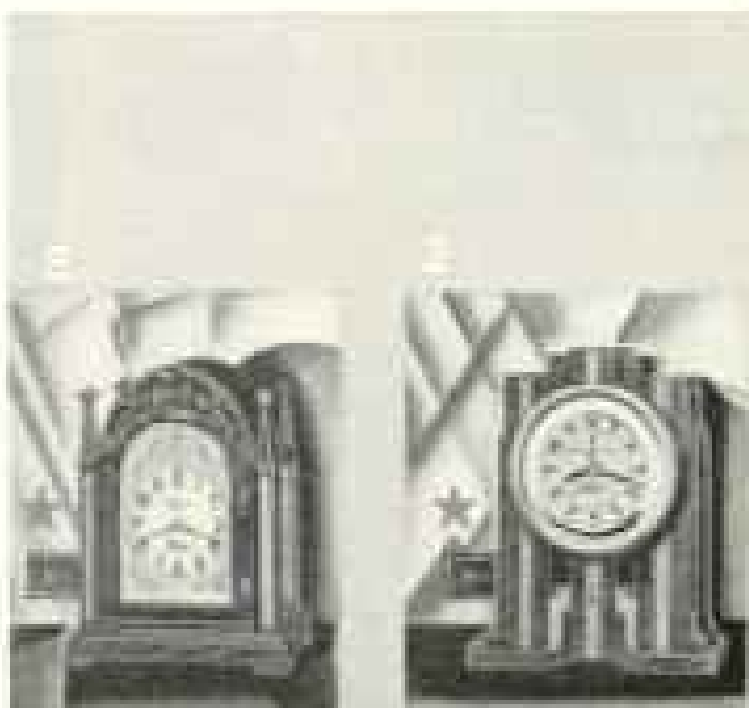
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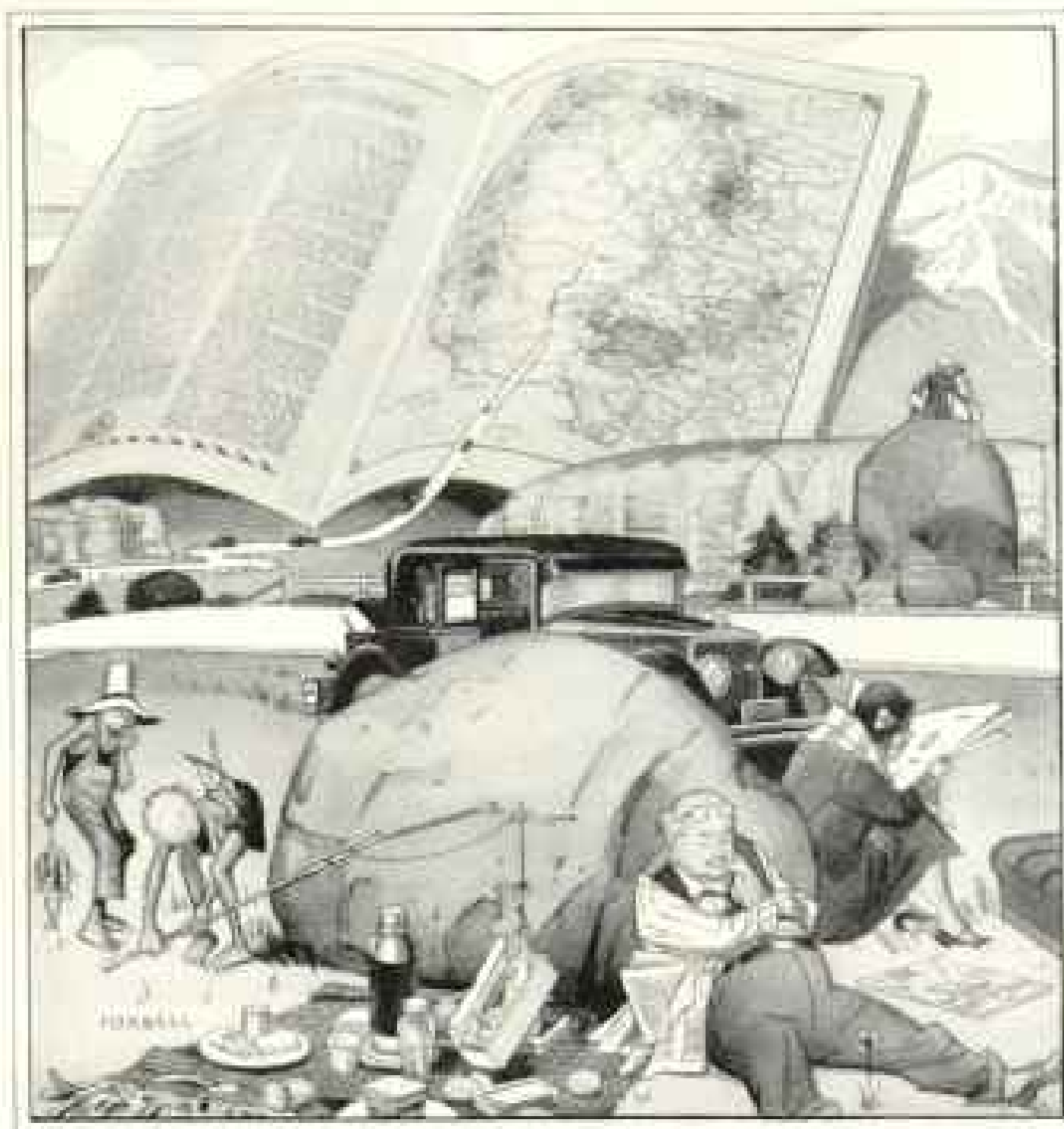
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9-9

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by JOHN OLIVER LA GORCE  
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### WILL YOU FISH? . . .



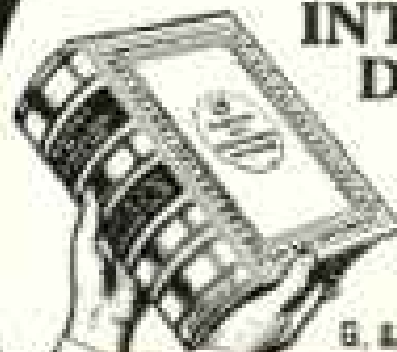
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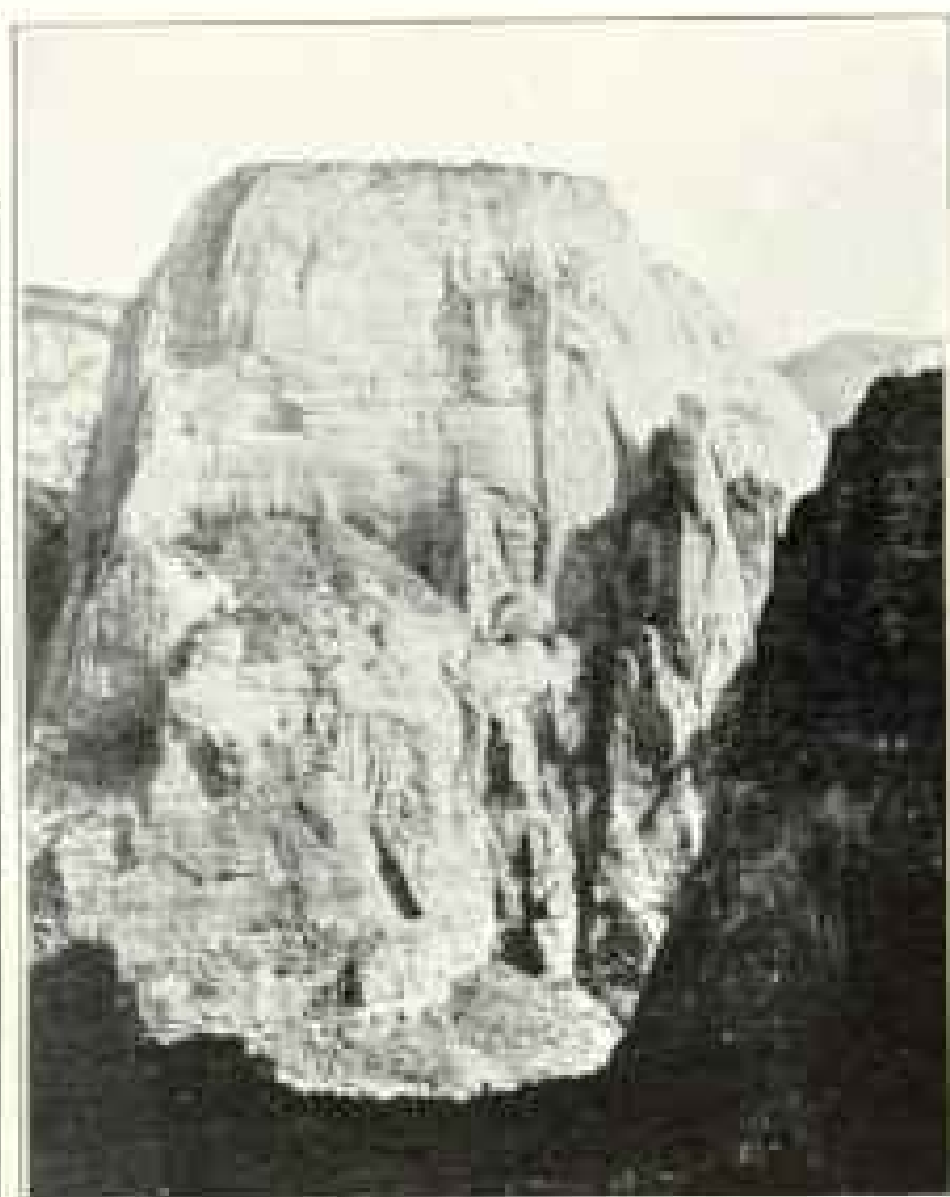
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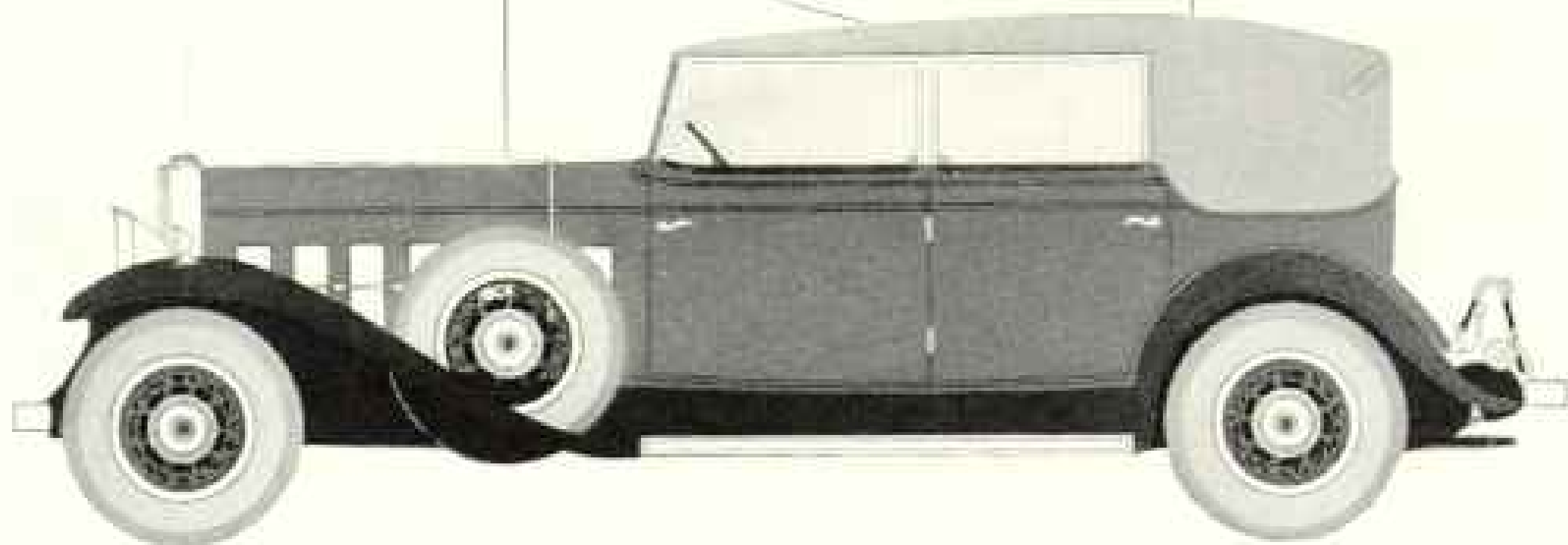
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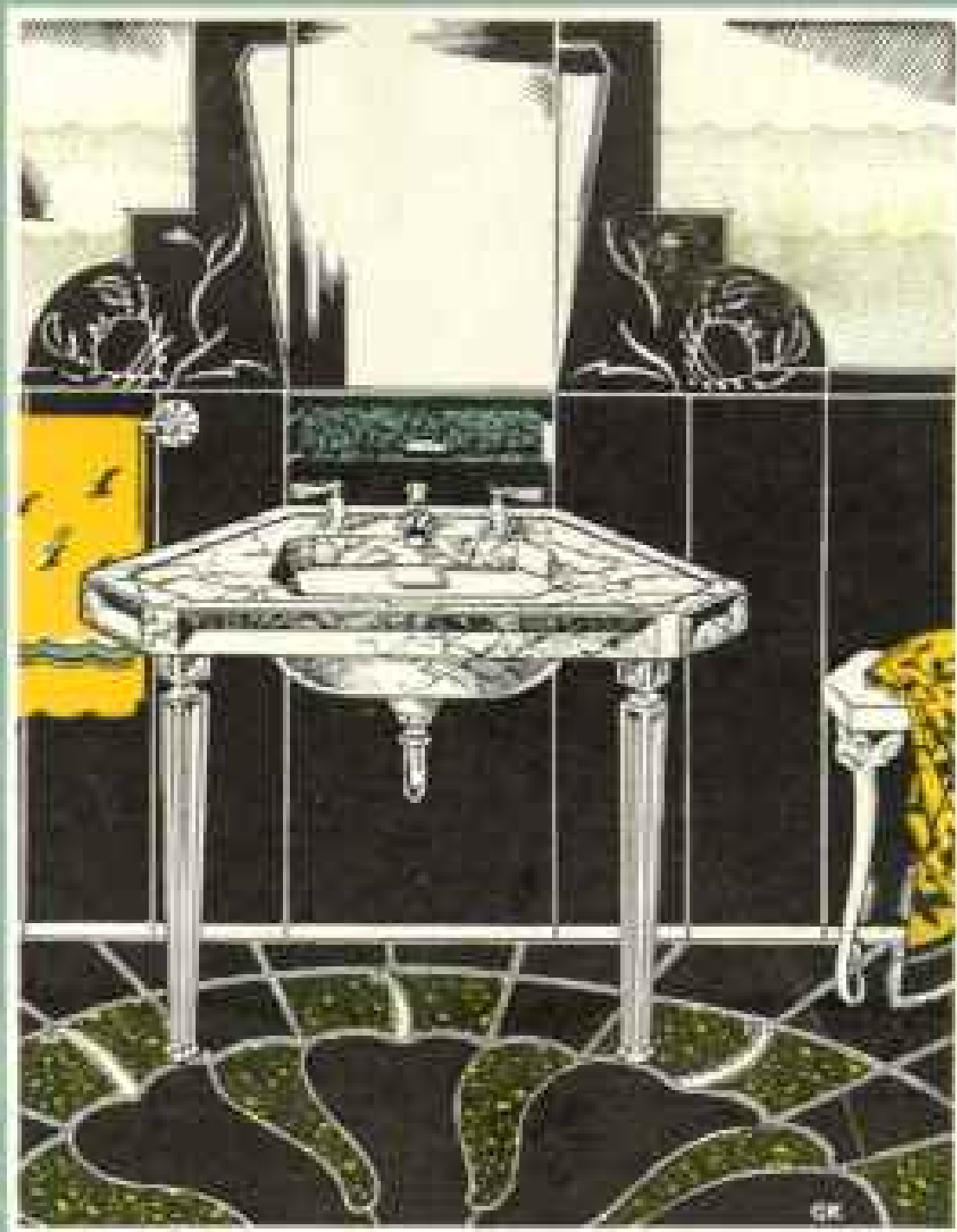
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