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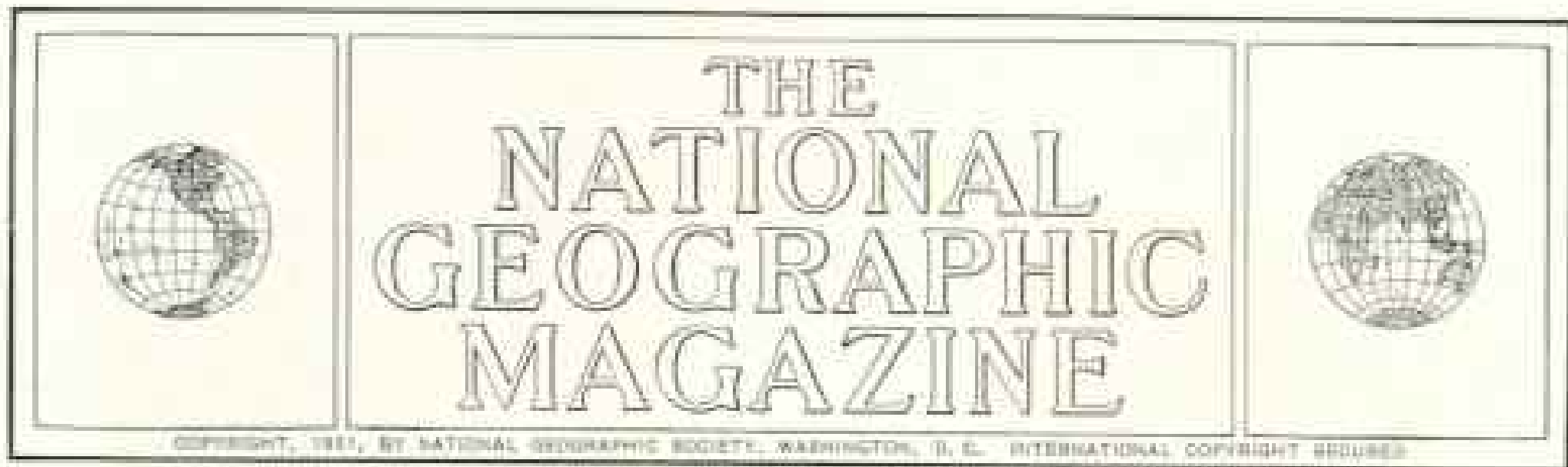
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A MODERN SAGA OF THE SEAS

The Narrative of a 17,000-Mile Cruise on a 40-Foot Sloop by the Author, His Wife, and a Baby, Born on the Voyage

BY ERLING TAMBS

THE northern summer was on its decline when we started on our cruise. It was toward the end of August, 1928.

Our home in the years to come was to be a 40-foot cutter built some 38 years ago, in my home town, Larvik, by Colin Archer, the famous constructor of Dr. Fridtjof Nansen's polar ship *Fram*.

Teddy had served her day as a pilot boat on the rock-strewn and dangerous Norwegian coast. So she had a past—a glorious past, indeed!

I had known her for many years, since the days when I was a small boy and she was the talk of all small boys; when this boat, a wonderful combination of speed and seaworthiness, was the envy of competing pilots unable to boast of a craft so fast and so strong. Many a time did she put to sea through foam and darkness, when winter storms of demonic violence lashed the sea into fury and forced all other boats to seek refuge in port. Surely she had played her part.

BOUGHT WITH PROCEEDS FROM LATEST NOVEL

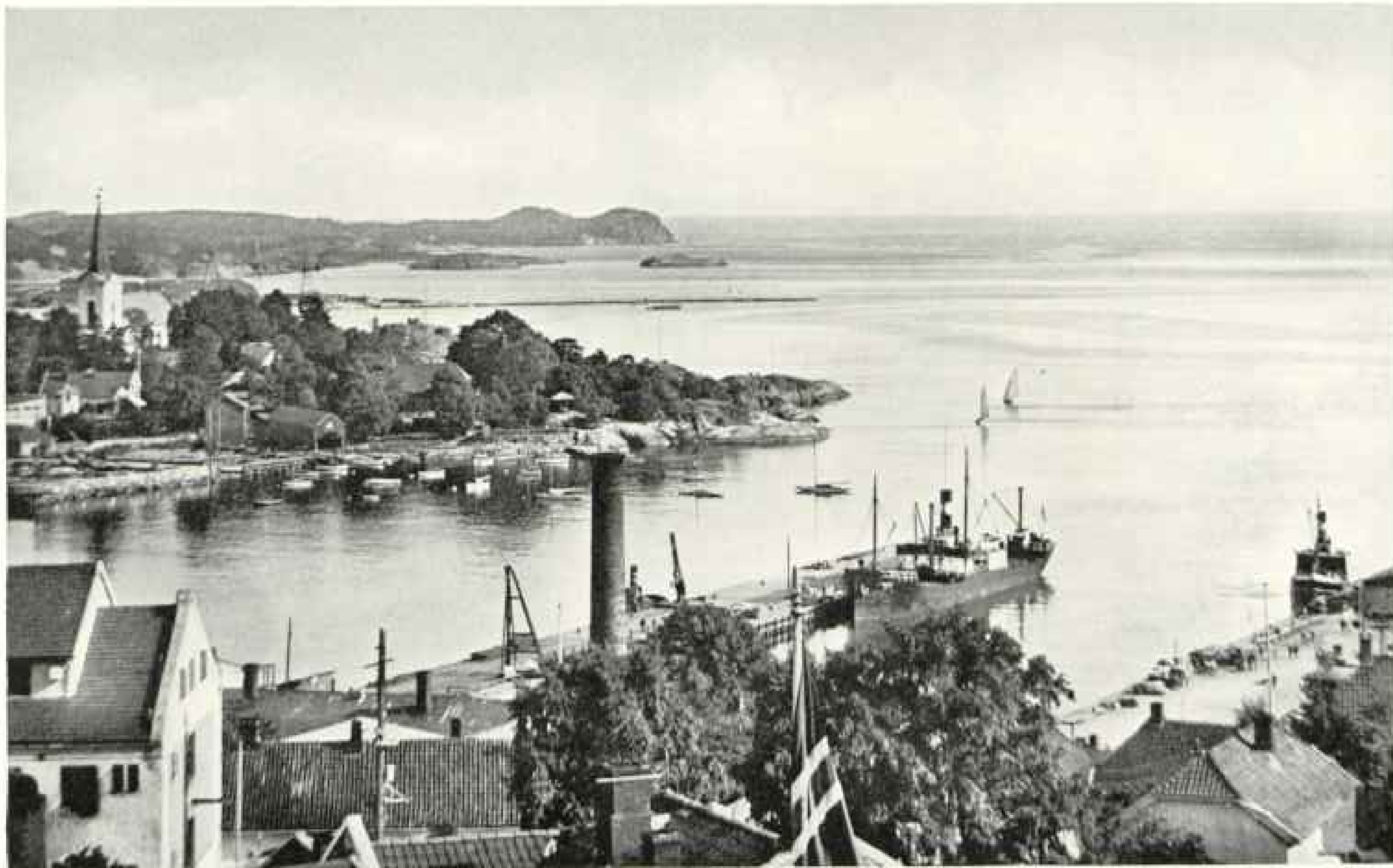
Now she had been put out of commission, although she was as hale and sound as ever. But modern times had made power boats a necessity; *Teddy* had become antiquated.

It was my chance. I loved this boat and I scorned engines. With the proceeds of my latest novel I bought her. Refitting her and buying some stores and equipment took my last ready penny and exhausted my credit; but what did it matter? I had a home now, which, like a Magic Carpet or like an enchanted trunk, could take me where I wanted to go.

I managed to make a contract with a leading Norwegian daily, *Tidens Tegn*, which agreed to buy a certain number of articles from me as I sailed along, and I even succeeded in obtaining an advance of some \$300 on this contract. It all disappeared in the boat, as paint, as tools, as ropes, as canvas. Oh, I wanted a great many things!

I supplied my own labor; I was my own carpenter, sail repairer, painter, and decorator; yet boat and preparations swallowed about \$2,000 before I found that my resources had run unmistakably dry. But by then the old boat looked like a yacht, and there was no writ nailed onto her mast.

The inside equipment of the *Teddy* was simple; indeed it was very much as it had been when she was a pilot boat. Save for the fresh-water tanks, a partition, a few lockers and shelves, and a door leading into the forepeak, I had not altered her much. The fittings of our *Teddy* were meant for service, not for looks.



Photograph from Ekte

THE STURDY "TEDDY" CLAIMS LARVIK, IN SOUTHERN NORWAY, AS ITS HOME PORT

Here was built the craft which, after 38 years of service on the Skagerrak, was destined to take the author and his family safely into the far waters of the world. Larvik, with a population of about 10,000, is a trading and manufacturing center of importance. Vessels of almost any size may find anchorage in its harbor. Timber, wood pulp, granite, and ice are exported.



© E. M. Newman

LOOKING OVER NORWAY'S CAPITAL FROM THE OLD PALACE TOWER

The present city was founded by King Christian IV in 1624 to replace the ancient town of Oslo, which was destroyed by fire in that year. For three centuries it bore his name, Christiania, but in 1925 the Norwegian Government changed it back to Oslo, after the former capital. There is an excellent harbor here and the city is important commercially as well as politically.



Drawn by Newman Dunstead

THE 17,000-MILE PATH OF THE "TEDDY"

In a converted 40-foot, sloop-rigged pilot boat, the author and his bride set sail from the Norwegian capital on their honeymoon. In three years their wanderings have carried them more than halfway around the world, and the crew has been augmented by the advent of a son, born in the Canary Islands.

And yet, what with warm colors, cheerful decorations, gay cushions, velvet curtains, and bright metal, the cabin of the old boat was a very cosy place. It was somewhere about nine by nine feet, with plenty of head room and two bunks on either side, inside the lining. The narrow openings to the bunks were covered with curtains sliding on shining brass rails. So was the door leading to the galley.

In the galley two single Primus cookers, swinging in gimbals, formed our unpretentious kitchen facilities, which, by the way, proved quite satisfactory. On each side of the galley was a 110-gallon water tank with faucets within convenient reach of the cook. A third tank of the same capacity was placed under the companion floor aft.

Later experience proved that this 330-gallon water supply could, at a pinch, be made to last us even up to five months.

It has been suggested that I could replenish my tanks with rain water occasionally. That, indeed, had been my main

thought in providing three separate fresh-water tanks instead of one; but up to the present the scheme has never worked. Sometimes the boat is rolling too much; then, again, the wind may be too high or the sails may be a hindrance. Fortunately, however, the problem has never become imperative. But I am digressing.

From Oslo we sailed along the coast as far as Ulvøysund, a pretty little cluster of white fishermen's dwellings among the skerries outside Kristiansand S. In the snug shelter of this little cove we passed the last night on native territory, and thence we set out for the freedom and romance of the deep-blue sea.

OFF FOR THE SUNNY LAND OF DREAMS

When the rocky coast line of our Norwegian homeland disappeared behind haze and horizon, my wife in truth shed a tear or two, but for me happiness was unalloyed. It was a glorious morning and the world lay open before us. I felt the cheerful jingle of about one shilling and seven

pence in my pocket—not a large purse, to be sure, to start with on a cruise around the world; but what did that matter? Our sturdy craft was bending to the wind, responsive and willing, fleeing from cares and winter, heading for the sunny lands of my dreams.

What need for money? I was a free-lancer, dependent for subsistence on whatever loot I could make with my pen. No misgivings felt I about the future; I would make plenty.

As a side issue, I would call at some of the treasure islands on the way and carry away the riches that my predecessors had left there and that could hardly be of use to them now. Why, money was entirely superfluous at the start!

Would I have changed places with a king? Not I; for I was a king myself. Mine was the staunchest craft, mine was the pluckiest girl, and mine was the utmost degree of independence that mortal man may attain.

I was responsible to no one. My boat was safe enough for any waters; in her I might sail whither I cared to go. Time and space were at my disposal, seemingly illimitable. I had that feeling of sovereign freedom which fairy tales attribute to kings, as the exclusive privilege of princes. Surely there was reason for my high spirits.

True enough, there were a few holes in our equipment; we had neither charts, instruments, nautical books, nor other navigation facilities—only an old card compass, which ran wild whenever there was a bit of sea going. We had no spare sails, and there were a few other things missing which to some people would seem indispensable.

But, among the various possessions at our disposal, there figured a bag of potatoes and a fishing line; thus our fare appeared well secured.

The boat was in good condition; likewise sails and rigging. Her white-enamelled sides glistened wet and smooth like polished ivory. The heavy canvas of her sails bulged evenly in the strong and steady breeze. She was a beauty!

SIXTEEN DAYS OF HOWLING GALES

The fine weather experienced at the start was short-lived. The very first night it began to blow, and from then on we had nothing but howling gales until, sixteen days later, we made the port of Le Havre,

somewhat the worse for wear, but happy in the conviction that our confidence in the boat was justified.

To be sure, it was too heavy a craft for one man to handle, and more than once the tasks I had to tackle almost broke me. A strenuous job reefing those heavy sails in the midst of a frenzied gale, while the boat is being tossed about by a raging sea. Very often this happened at night, when nothing was discernible through the pitchy darkness but flying spray in the dim red or green glow of the side lights and the ghostly phosphorescence of the tremendous combers; when nothing could be heard but the roar of the tempest, the rattle of the gear, and the terrible flapping of the furious canvas.

I had to shout my orders into the ear of my wife, who stood at the tiller drenched and frozen, resolutely sticking to her post. Unable to see me through the darkness, she would call my name from time to time; but her voice was lost in the storm and she received no answer but the shrieking of the gale. And then she would not know if I was still aboard. Assuredly she suffered some hardships!

A STRANGER COVETS THE "TEDDY"

Arrived at Le Havre, we took full advantage of the rest, so much needed at the outset, before we had discovered through later experiences a means of considerably simplifying our labors.

Among the numerous visitors who came to see our boat was a British colonel. He wanted to buy the *Teddy*.

"I love your boat," he said.

"So do I," I responded.

Then followed an offer amounting to more than three times the total price I had paid, including repairs and outfitting.

No response.

"I am a very rich man," observed the colonel, with considerable dignity.

"Not rich enough to buy this boat!"

That concluded the interview.

But day after day the colonel returned to the quay. He, too, had fallen in love with the boat and he coveted it.

But how could he ever dream that I would part with my kingdom for mere golden guineas?

His longing went ungratified.

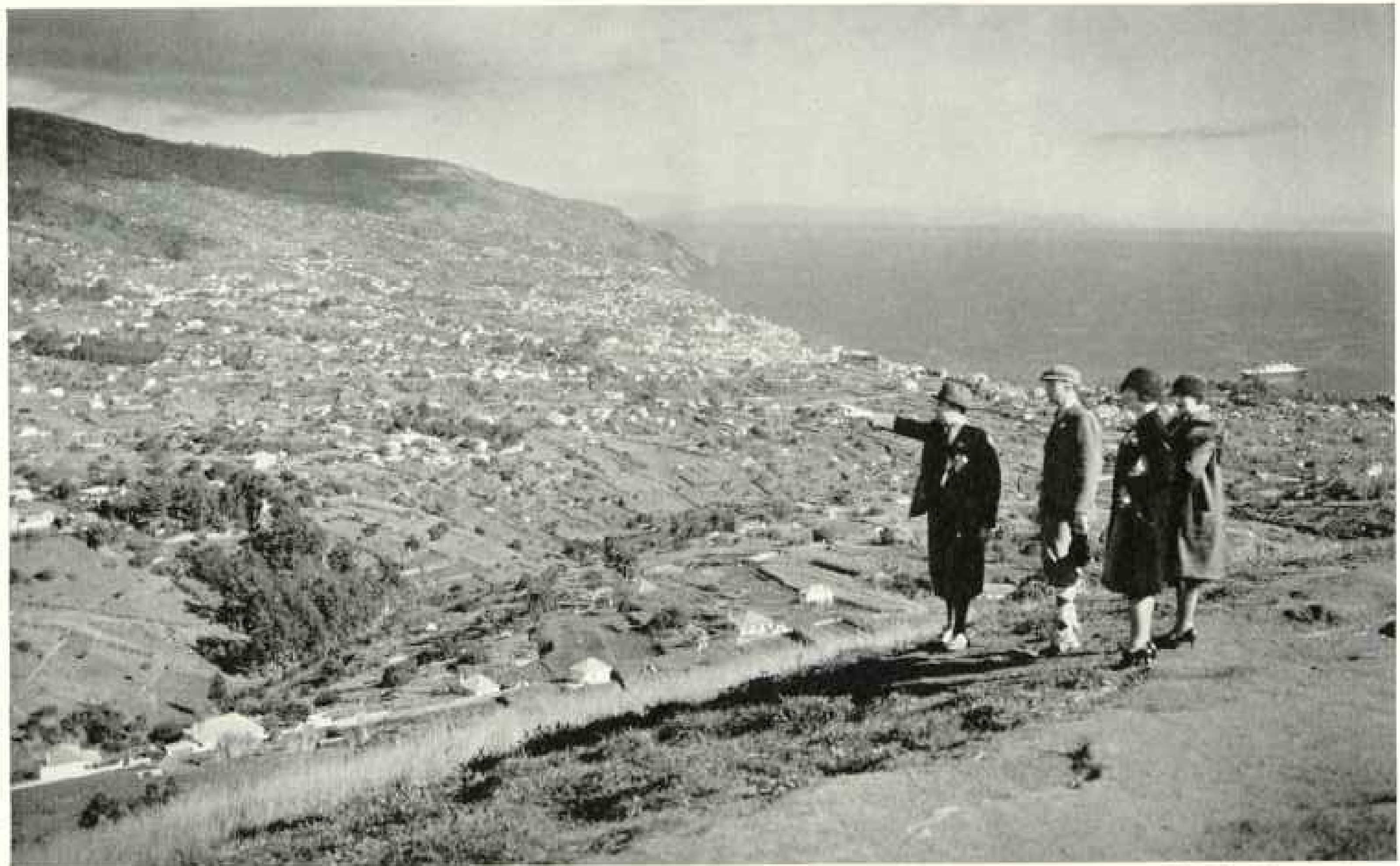
From Le Havre our path often lay along the well-beaten steamship tracks, the wind being mostly fair, and thus allowing us to



© Compagnie Aérienne Française

SITUATED AT THE MOUTH OF THE SEINE, LE HAVRE HAS BECOME FRANCE'S SECOND SEAPORT.

Only Marseille outranks the "port of Paris" in importance. It has kept up with the latest port developments and handles so much transatlantic traffic that some items, such as coal and iron ores, of late years have been diverted to Rouen, 50 miles up the Seine. Cotton and coffee, among its principal imports, are stored here in great warehouses, to be distributed according to the needs of the market. It is virtually on the open sea and can be approached by steamers of any draft.



© Publishers' Photo Service

FUNCHAL LIES IN A VAST AMPHITHEATER BETWEEN VERDURED SUMMITS AND AN AZURE SEA

The capital city of Madeira, in addition to being magnificently located, has an equable climate. It is an important coaling station and a popular port of call for vessels en route between New York and Mediterranean ports. The island has long been famous for its excellent golden wine. The author spent ten days at Madeira (see text, page 661).



Photograph by Angel Rubio

CORUÑA GOSSIPS "TALK FISH" AS THEY MEND NETS

Sardines, herrings, haddock, and conger eels; also liners bound for Cuba and South America; and salt-encrusted tramp steamers—these vital interests of the present have superseded those of the stirring days of the Invincible Armada, which sailed from here to attempt to crush Queen Elizabeth, and of Drake, who "singed the Spaniard's beard" by burning the town.



Photograph by De Cos from Gallaway

HOUSEWIVES VISIT THE WATER FRONT TO BUY FRESH FISH

The working classes along the Spanish coast depend heavily on the products of the sea for their food, and the fishmongers of Vigo do a thriving business.



Photograph by Angel Rubin

VIGO'S CHIEF CHARM LIES IN ITS SURROUNDING DISTRICTS

The fishing and fish-packing industries mar some of the beauty of the town proper, but good bathing and the lovely views in the suburbs compensate for the lack of other attractions.

pursue such a course. Of the steamers we passed day and night, some would blow their whistles, some lower their flags, to greet the little boat sailing so bravely in spite of the rough weather and the high seas of the Bay of Biscay.

SAVED BY A STRANGE CHANCE

Though oftentimes I longed to heave to, we kept her going; for the autumn was well advanced and it was advisable to go south. On one occasion only was I forced to give in and lay her to for 24 hours. A full storm was blowing and the forestaysail had carried away.

It was the night following this storm. The wind had abated somewhat, but we still remained hove to, waiting for the sea to moderate. Moreover, I had to patch the forestaysail before we could proceed, and for this daylight and fine weather were

necessary. Meanwhile I had slackened the sheets an inch or two, so that the boat made a couple of miles headway while she steered herself on a southerly course.

I had the watch from 2 o'clock and was sitting in the cabin smoking my pipe. My wife slept in her bunk. From time to time I would put up my head from the companionway and keep a lookout. Nothing to see but scudding clouds, breaking seas, and now and then a glimpse of a waning moon.

Always, on a sailing ship, in wind and sea, a variety of noises forms a continuous, monotonous concert to which one becomes accustomed eventually. There is squeaking and creaking, knocking and rumbling, groaning and shrieking. There is nothing disturbing about these sounds. One learns in time to distinguish and localize each noise. Eventually the medley of sound grows soporific.



Photograph by Edda Reinhardt

FISHERMEN'S BASIN, IN THE HARBOR OF VIGO, SPAIN

Fishing and fish canning give employment to a large portion of Vigo's population. The author found these fisherfolk a kindly, helpful people. Here the *Teddy* shipped a new member of its crew in the form of "Spare Provisions," a dog of indeterminate ancestry but fine qualities (see, also, text, page 660).

I must have dropped asleep at the bench when suddenly I awoke. I had heard a foreign noise, a knocking I could not locate. However, I was very tired and must have fallen asleep again, when with a start I was jerked into complete wakefulness. I heard again the unfamiliar sound, a distinct knocking, three times repeated. I listened, sitting bolt upright. For the third time came the knocking—insistent, warning, as if produced by a hard knuckle—and the sound seemed to issue from the companion top.

Seized by an instinctive uneasiness, I rushed on deck. Ho! What was that? A red light close ahead on the lee bow, and under it the huge black hull of a windjammer on her starboard tack.

Hard down the helm! Will *Teddy* come over? A tense moment! The huge bulk of the bark comes nearer. It rises and sinks in the sea while the water shoots out through scuppers and weather ports. The forestaysail comes aback. *Teddy* falls away. We go clear.

The bark sails by. A man is standing by the poop-rail. A quiet voice says in French, "You have the good luck, Monsieur!"

This episode I did not relate to my wife until a year later.

Of course, there is a natural explanation; there always is; even though I cannot in this instance find one in which I have any confidence. Yet it may have been the forestaysail flapping, in which case the sheet rope, which runs along the cabin top, might produce a rapping sound.

But why should this happen just at that critical moment and neither before nor after?

As a partly serious explanation, I put the warning down to the benevolent activity of the ship's guiding spirit, whom I named after the old pilot for whom the boat was built and who subsequently met his death on board. It is to him that I have ever since credited the strange happenings that have occurred on the *Teddy*.

LEARNING TO EAT BARNACLES IN SPAIN

After leaving Le Havre we did not sight any land until, at the end of a nine days' voyage, we made out the huge black masses of Cape Ortegal, on the northwest coast of Spain. The following day we cast anchor in pretty Cedeira. It had been our inten-

tion to make for La Coruña, but a howling gale from the southwest made beating to windward against the current both wet and miserable and prompted us to seek shelter where we could make it.

Weather-bound fishermen in Cedeira taught us to eat barnacles and octopus, which, after overcoming our foolish aversion, we found delicious. These edible barnacles grew in big clusters along the rocky coast and were gathered at low tide. They are quite easy to clean, and when boiled in salt water their long necks tasted very much like shrimps.

Maybe these barnacles were of a different kind from those which had the annoying habit of settling on the copper-painted bottom of our boat at sea. At any rate, I have never had the courage to eat of our own crop, and I have certainly never felt inclined to cultivate them.

Spain is, so far, the only country I have seen where these shellfish are eaten. The octopus, however, seems to furnish an essential ingredient in a variety of delicacies used in many of the tropical or semitropical places which we have since visited.

WE LOSE OUR ENTIRE WARDROBE

When the storm had abated we sailed to La Coruña, the principal town on the Spanish northwest coast. It is an interesting town. Possibly founded by the Phoenicians, it has played a part in history on many occasions. It boasts of buildings from various historical epochs, some being of great age. The Hercules Tower, more than 300 feet high, dates from the Roman period, perhaps even before, and has since been in the possession of many nations, at the same time a stronghold and beacon, until to-day it serves the sole, peaceful purpose of a lighthouse.

We found the Spanish a charming people, kind-hearted and congenial. Everywhere I met Spaniards on this cruise I found willing hands and a ready smile.

We had only one unpleasant incident in La Coruña, but even that now appears to me to have been a blessing in disguise, since it brought us a wholly undeserved popularity and the sympathy of, I might say, the entire population.

Setting out on a voyage which would in all probability have a duration of several years, we took our entire wardrobe with us from Norway, much to my subsequent



Photograph by David J. Martin

STOPPING FOR A FRIENDLY CHAT ON THE STREETS OF FUNCHAL
The women of Madeira produce an embroidery that has carried the island's
name into far countries.



Photograph by Erling Tande

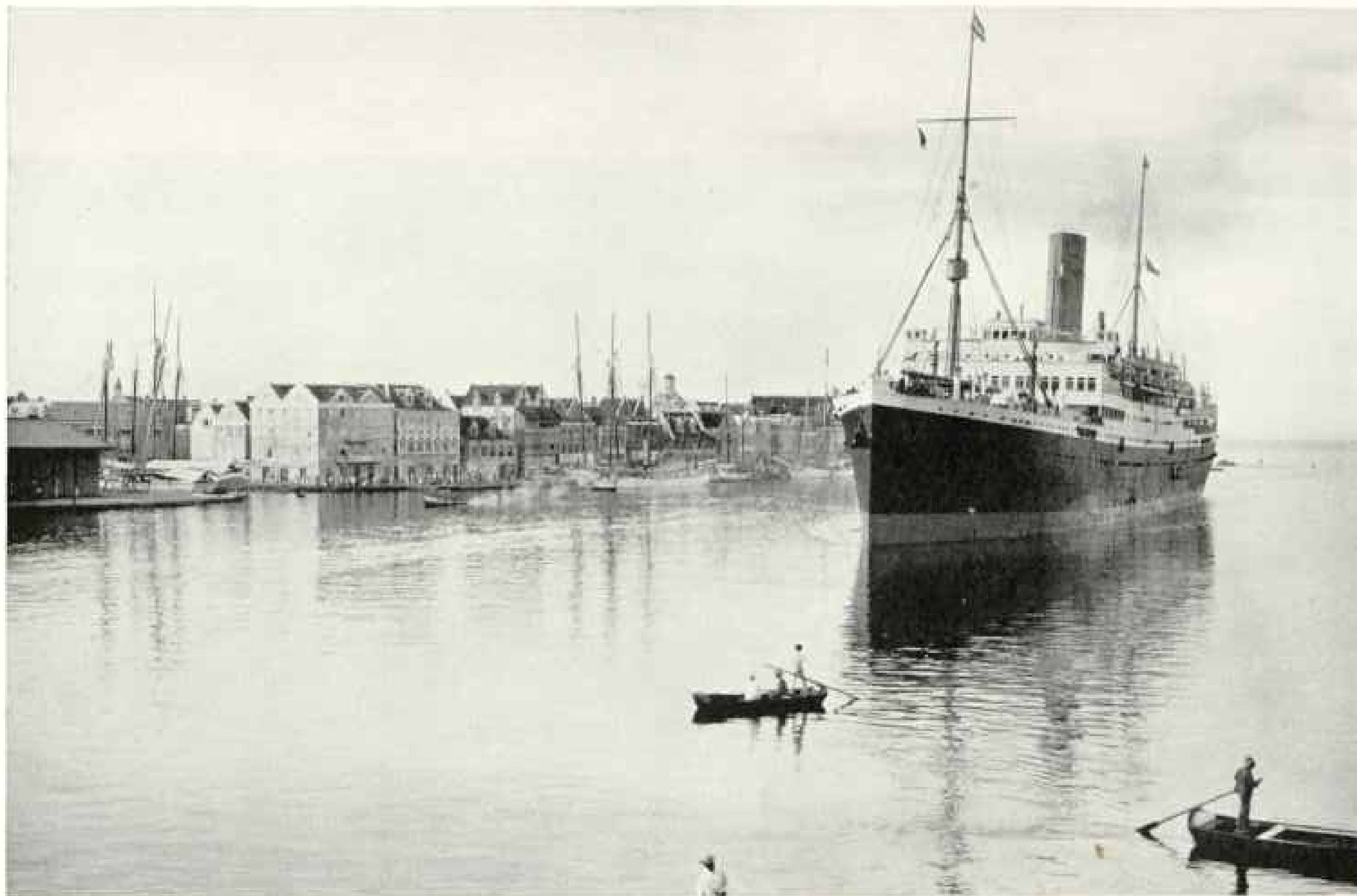
LYING AT ANCHOR OFF TENERIFE, IN THE CANARY ISLANDS
It was in the Canary Islands that the master and the mate of the *Teddy*
were joined by the heir to all their belongings (see text, page 663).



Photograph by Wilhelm Tobien

MORE THAN A WEEK OUT FROM MADEIRA, "TEDDY" ARRIVED SAFELY IN THE HARBOR OF SANTA CRUZ DE TENERIFE

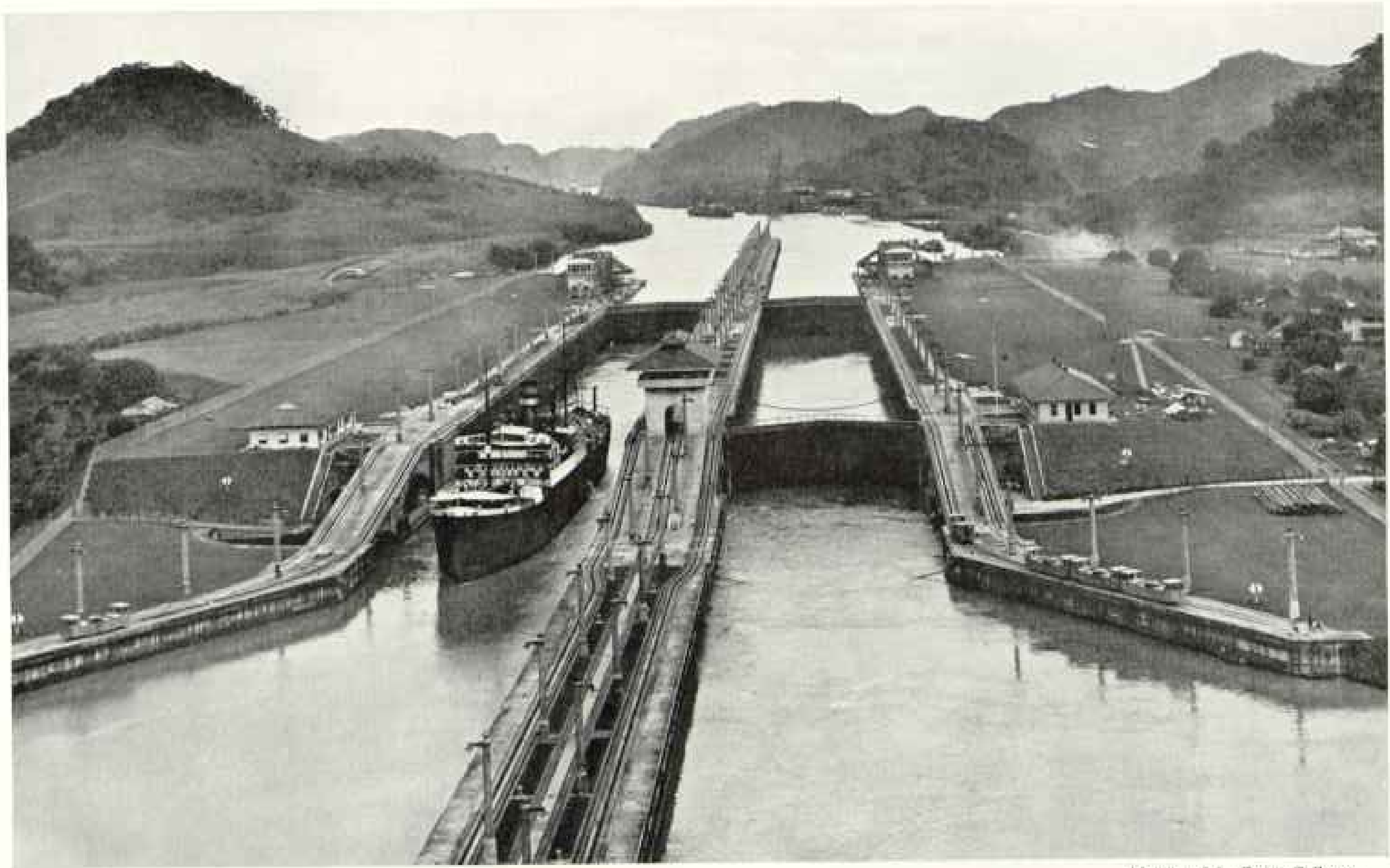
The actual air-line distance covered in the journey was only 250 miles, but it was necessary to go far out of the course to avoid a hurricane (see text, page 661). Santa Cruz de Tenerife, or de Santiago, is the capital city of the Canary Islands (see, also, "Hunting for Plants in the Canary Islands," by David Fairchild, in the NATIONAL GEOGRAPHIC MAGAZINE for May, 1939).



Photograph by Thomas F. Lee

CURAÇAO WAS THE "TEDDY'S" FIRST LANDFALL AFTER A 48-DAY VOYAGE ACROSS THE ATLANTIC

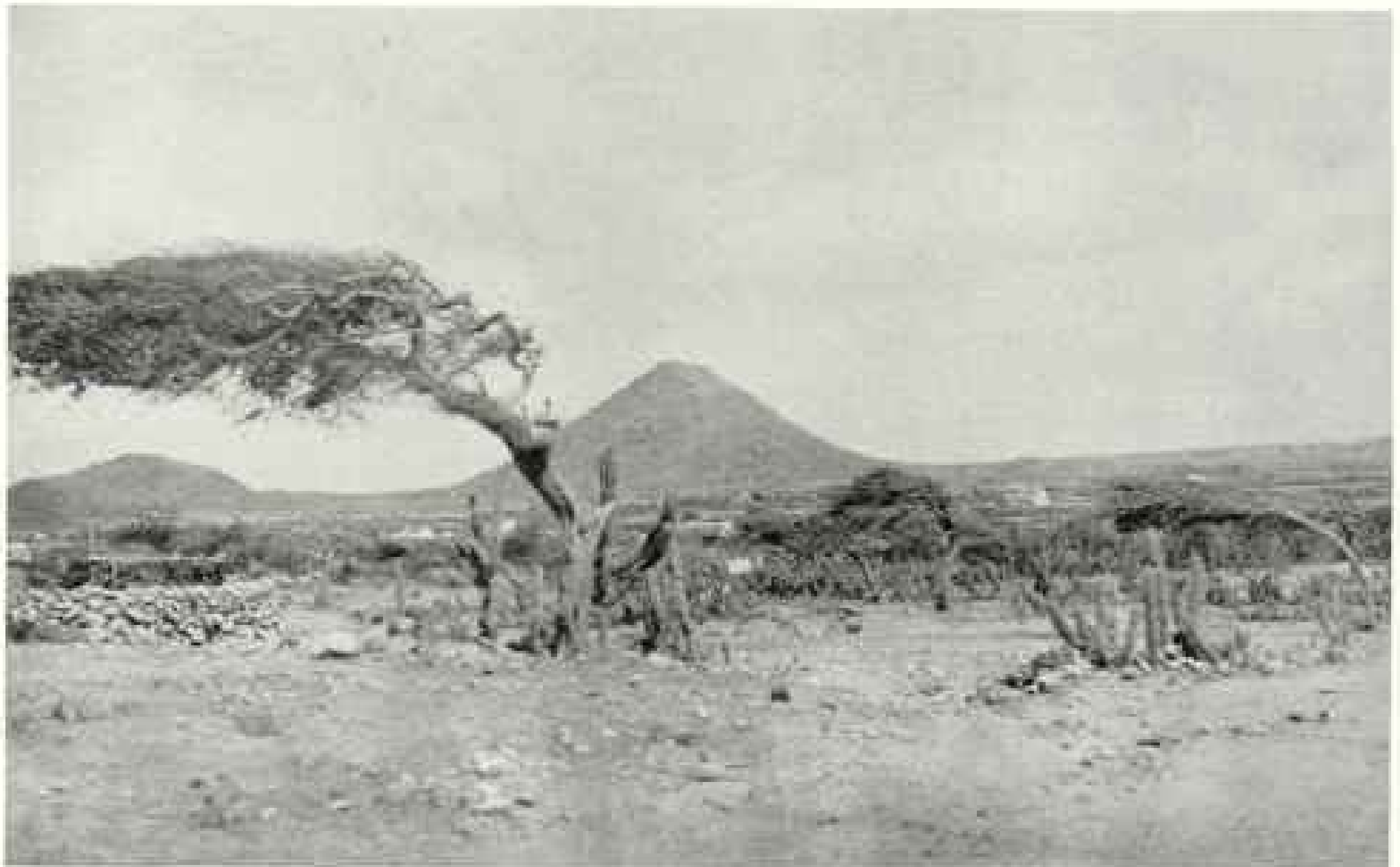
The principal island of the Dutch West Indies is a refining and distributing center for the rich petroleum fields of northern South America. In the line of shipping through the Panama Canal, it also offers a convenient replenishing place for empty fuel tanks. During a recent year, 7,235 cargo ships arrived at the island. The water front at Willemstad is reminiscent of old Holland. The *Teddy* experienced a spell of broiling weather at Curaçao (see text, page 673).



Photograph by Ewing Galloway

PEDRO MIGUEL LOCKS CONNECT MIRAFLORES LAKE WITH THE GAILLARD CUT

The whole series of Panama Canal locks are built in parallel chambers, making it possible for vessels to pass without loss of time. They are equipped with electric locomotives, which tow all vessels through. In the background is the Gaillard (formerly Culebra) Cut, out of which United States engineers had to remove more than a hundred million cubic yards of earth and rock.



Photograph from Ned C. Bell

IT IS EASY TO TELL WHICH WAY THE WIND BLOWS ON ARUBA

The few trees on this little island in the Dutch West Indies all lean in one direction, due to pressure of the unrelenting trade winds from the east. Although less than 600 feet high, "Mount" Hoodberg, in the background, may be seen in clear weather for 20 miles at sea.

annoyance. It took up a lot of room, it needed a great deal of care, and yet no amount of attention could prevent the ultimate ruin of whatever clothing we had.

It was almost hopeless to air and brush mildew off evening clothes on the high seas, yet it was a task which seemed to thrust itself upon me most unpleasantly often.

When, therefore, an enterprising thief at La Coruña broke into the cabin during our absence and carried away practically all of our clothing, besides what silverware he could find, I soon found consolation in the thought of the work and trouble I should be spared; for, in the end, clothes that cannot be of immediate use are only an encumbrance.

The burglar had not taken away our oilskins or sea boots; neither had he taken much of our underwear; so, if he had only left us some of the old overcoats which we used at sea to keep us warm, I should have felt nothing but relief at our loss.

A NEW MEMBER OF THE CREW

Three more ports of call we made on the Iberian Peninsula—Corne, Vigo, and Lisbon.

In Vigo we shipped a new member of the crew, a puppy. She had been born on a Norwegian steamer, and the chief, who gave her to me, claimed that she was a "French police dog." I did not worry much. Whatever her pedigree, she suited me. She is good-looking, very much like an Alsatian, but smaller, and is the most intelligent dog I ever had, sweet-tempered and obedient, yet a fierce watchdog. She took to me from the beginning; wherever I went she wanted to go.

I called her "Spare Provisions," which is still her official name, though, as this name seemed to dishearten her, perhaps bringing to her mind unpleasant apprehensions, I usually call her *Teddy*. This has the advantage that if anyone hails the boat when we are at anchor, the dog will immediately hear it and answer.

Although a proper sea dog, born and bred, *Spare Provisions* was very seasick on her first voyage in the *Teddy*. I had to carry her with me from the cabin to the cockpit, from the cockpit to the cabin. She seemed to be less miserable in my company; with her head resting on my sea boot, she lay still, content to look at me.

At times she would even attempt to wag her tail to show her gratitude.

We had a rough passage from Vigo to Lisbon, taking ten days to cover a distance of 260 miles. For ten days the dog did not eat a thing, but when we arrived at last her appetite returned and she made up for her long fasting. She ate everything she could get hold of, including vaseline, coffee beans, brown pepper, tobacco, and a bank note equivalent to 20 pounds of fish. However, she deserved it all and more.

We could not have had a better guardian for our boat. For seven weeks we were moored alongside the quay at Lisbon. My wife and I went ashore every day, leaving the boat in her charge. She never allowed anybody to come on board during our absence, and it is certainly due to her that nothing was missing when we went to sea again.

Until we arrived at Lisbon my navigation facilities had improved but slightly. Here, however, I managed to buy a second-hand sextant. It was not too good, to be sure, but then I was not much of a navigator either, and in any case, on a small boat, the conditions would rarely be in favor of taking accurate sights. Besides, it gave me a feeling of importance, of superiority; I had become a proper captain, a navigator, supposed to be capable of solving the great secret of navigation. I fear, however, that my superiority was very much akin to that of a native sorcerer and not much better founded.



Photograph by Erling Tambs

ONE OF THE WORLD'S YOUNGEST YACHTSMEN

The author's son was born at Las Palmas, in the Canary Islands, and put to sea on his first voyage at the age of six weeks. He has thrived on a combination of salt air, sunshine, and powdered milk.

The weather was cloudy all the way to Madeira, our next place of call; my dead reckoning took us there right enough. With the island in vision, the sun at last showed his face.

Here was my chance. I tried out my sextant and found that the island was one hundred miles too far north. The next time I used the instrument was when, leaving the Canary Islands, I discovered these islands to be one hundred miles too far south. Thus, striking an average, we might consider our instrument about right!

Leaving Madeira after a ten days' stay, we narrowly escaped a terrible hurricane,



SHIPMATES

The skipper's son and "Spare Provisions," canine mascot and watchman extraordinary, are fast friends. They spend many an hour together absorbing sunshine on deck.



Photographs by Erling Tambø

HE AND HIS KIND DISCOURAGED OCEAN BATHING

Like sinister shadows in the blue-green water, sharks swam about the *Teddy* at intervals as she crossed the Atlantic. Their presence was directly responsible for the institution of bucket baths on deck to replace dips over the side (see text, page 669).

which two days later devastated Funchal, breaking down the mole, swamping the lower portions of the town, stranding ships, and drowning many people. We succeeded in keeping clear of the cyclonic center by running away to the eastward, and eventually arrived safe and sound at Tenerife, having spent more than a week in covering a crow-flight distance of 260 miles.

THE AUTHOR'S SON
SETS SAIL WHEN
SIX WEEKS OLD

At Las Palmas we lay to for a space of four months; for my son claims this town as his birthplace. He was born in the house of my friend, Antonio Curbelo, and was named Antonio after him. But when this heir to all our belongings—consisting, it is true, mostly of castles in the air—had reached the age of six weeks, we again weighed anchor and set forth across the wide ocean on his first cruise.

It takes some experience to make up a suitable larder for a craft bound on a long cruise, especially if the purse has to be considered first of all. Climate, humidity, ventilation, cooking facilities, storage capacity, and even the movement of the boat are matters to be taken into account. However, ten months on the boat had taught us a thing or two; so when we left Las Palmas our stock of provisions showed a fair amount of variation.

We could not bake bread on board, but did not miss it much, as we had four different kinds of biscuits.

Salt meat, pork, peas, and beans we did not carry, chiefly because of the long soak-



Photograph by Erling Tambs

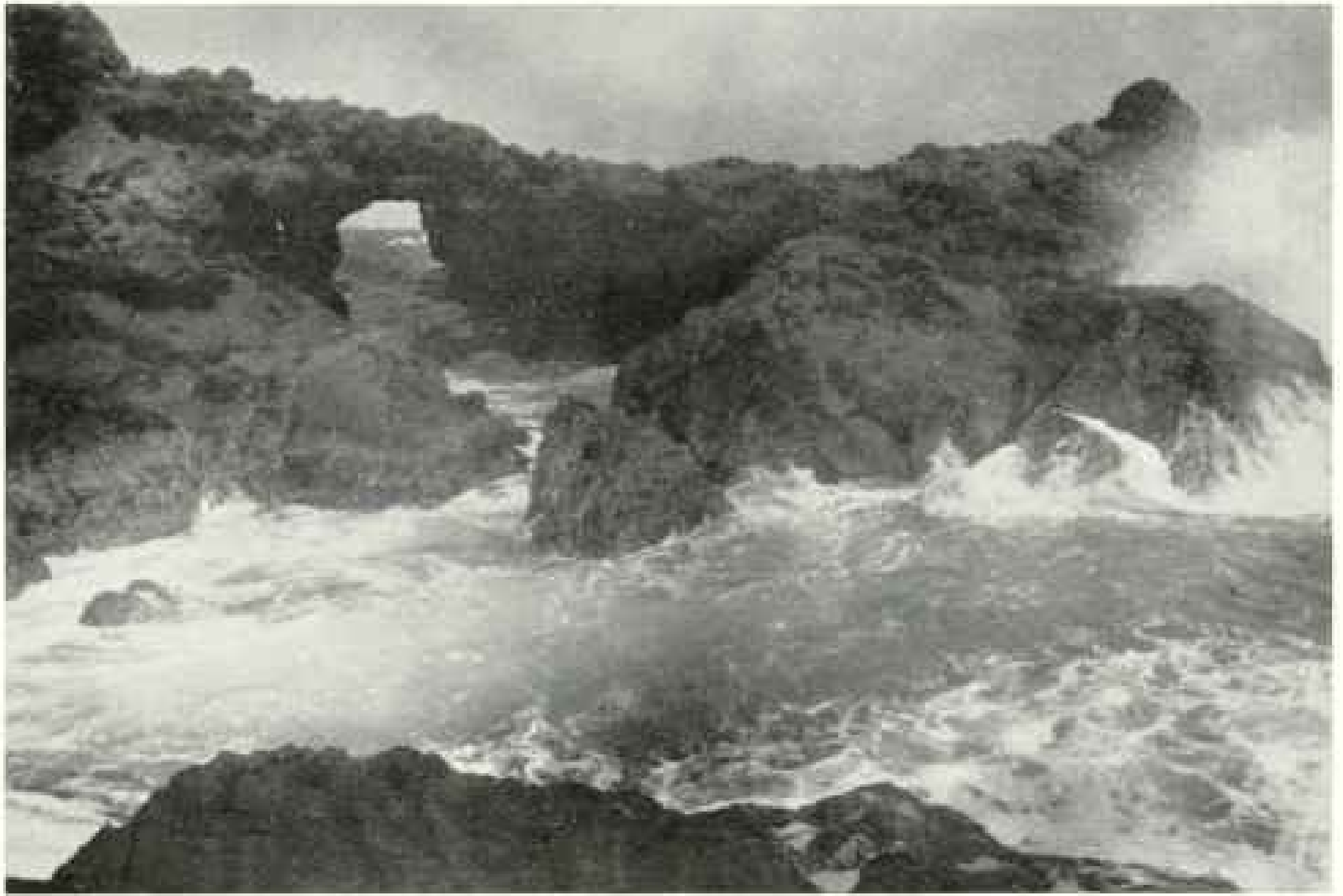
BEGINNING EARLY TO LEARN THE WAYS OF THE SEA

Master Tambs is an interested spectator as his mother takes a turn at the tiller. By the time most boys begin to think of going to sea this young man should be an accomplished mariner.

ing these foods require. On a small boat at sea, it is difficult to find a place where a bucketful of water will not upset. Too often had we used bad language slipping on peas which should have been in a soaking pail. Tinned corned beef and canned soups were easier to prepare and served us quite a variety of tasty meals.

We carried sufficient potatoes and onions for six weeks, and as much fruit and vegetables as we thought we could eat before they spoiled. They lasted us for two weeks.

The chief items of our larder were: 30 small tins of corned beef, 20 pounds of salt codfish, 20 pounds of stockfish, 15 tins (2 pounds each) cod roe, 15 tins (2 pounds



"SAILOR BEWARE" IS GOOD ADVICE FOR PILOTS APPROACHING ARUBA'S ROCK-BORDERED EAST COAST (SEE, ALSO, PAGE 660)



Photographs by Felling Tausler

A 15-FOOT ALLIGATOR ASLEEP ON A MUD BANK IN THE CANAL ZONE

Similar giant reptiles splashed off into the water as the author sailed his sloop through Gatun Lake (see text, page 674). Panama's jungles, once mosquito-infested, are kept pest-free now only at the expense of eternal vigilance.

each) fish balls; 10 one-pound tins salmon, 40 tins of soup, mainly pea; 3 dozen eggs, preserved in dry salt; 25 pounds of margarine, 10 pounds of salad oil, 20 pounds of rice, 50 pounds of gofio, 30 pounds of sugar, 2 pounds of tea, 10 pounds of green coffee beans, 50 tins of condensed milk, 20 two-pound tins green peas, 4 pounds each of dried apples, prunes, and raisins, 2 to 3 pounds each of flour, corn-starch, tapioca, 100 pounds of potatoes, and 20 pounds onions.

A few tins of sardines, pâté de foie gras, California fruit, syrup, a few jars of jam and pickles, carrots, cabbage, tomatoes, bananas, and oranges; vinegar, spices, etc.

GOFIO, A CANARY ISLAND STAND-BY

Among the items of our larder there is one, at least, which deserves special mention—gofio. This is a kind of flour ground from hot roasted whole wheat or maize.

This way of preparing corn has been handed down from the Guanches, the noble and warlike people who lived in the Canary Islands at the time of the Spanish conquest. The Guanches, as a distinct race, have disappeared, having been assimilated by their conquerors to make a remarkably fine type of people. Gofio, however, is as much of a necessity to the Canary islanders of to-day as it was to those of 500 years ago.

Mixed with a little water, milk, tea, or coffee, it forms a hard dough, which is eaten with every meal. Its uses are mani-



Photograph by G. J. Becker

LOADING TURTLES IN CRISTÓBAL FOR SHIPMENT TO THE UNITED STATES

From the Panama Canal Zone come large specimens of the principal ingredient for turtle soup. The seagoing reptiles are helpless and quite easily handled when turned on their backs.

fold and its taste excellent. Undoubtedly it is both nourishing and wholesome.

The people in Las Palmas get their gofio daily, hot from the mills. We had ours packed in biscuit tins, which were soldered before the contents had had time to cool down. It kept perfectly and formed a most valuable part of our daily fare for months. It is a pity that one cannot get it everywhere.

ANGRY SEAS BRING QUALMS

As we sailed the immense wastes of the Atlantic, the force of the trade wind kept



Photograph by Erling Tambs

THE CREW ON LEAVE AT COCOS ISLAND

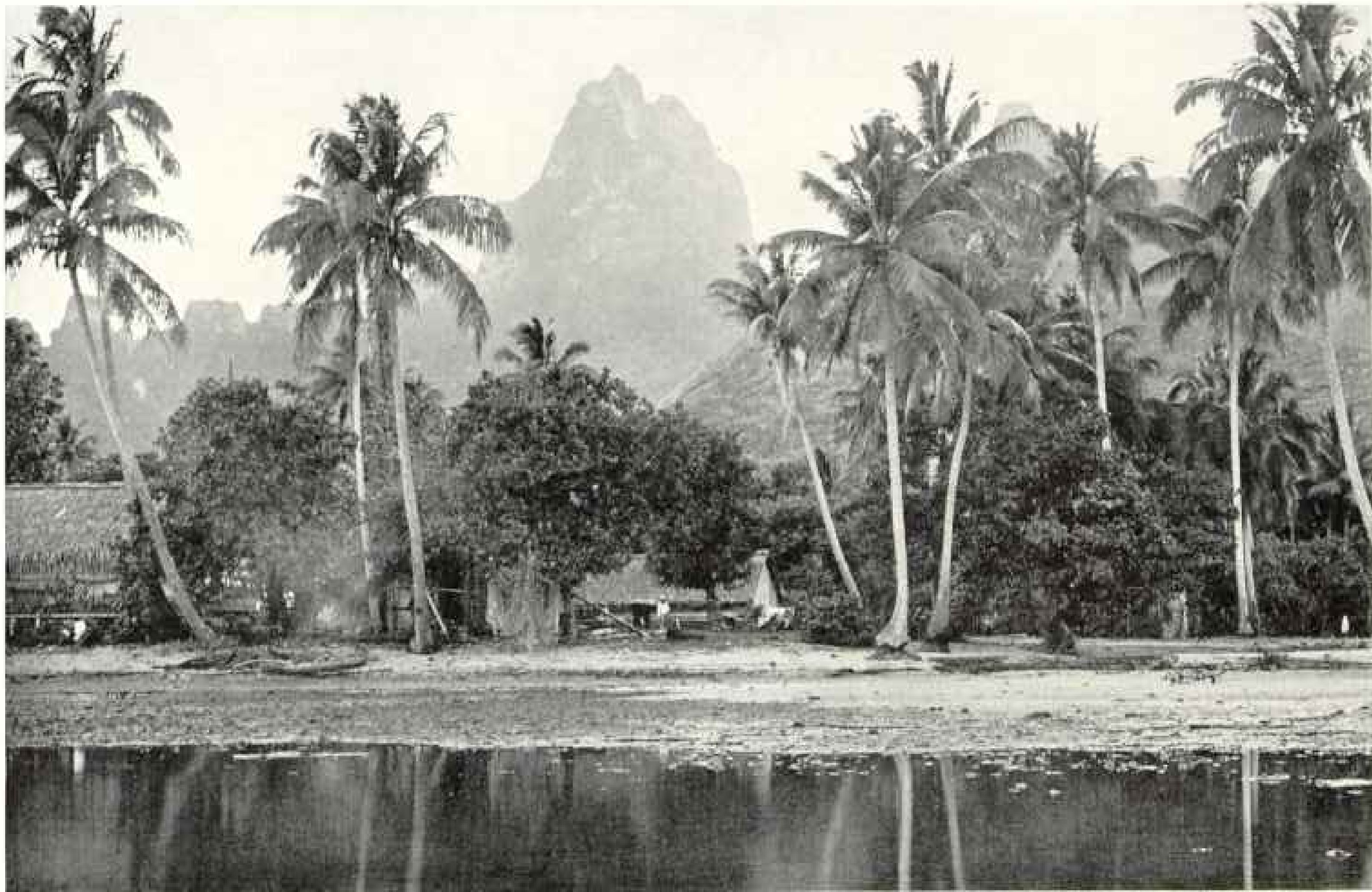
On this uninhabited bit of land, 550 miles west of Panama, the *Teddy's* company spent several care-free days (see text, page 677). Good water is plentiful on Cocos, and it was formerly a favorite rendezvous of buccannera.



Photograph by Mrs. Erling Tambs

SKIPPER TAMBS TAKES A "SHOT" AT THE SUN

The intrepid Norwegian author was not a trained navigator when he embarked upon his world cruise. His only instrument was an old compass. He picked up a second-hand sextant at Lubon (see text, page 661).



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Photograph by L. Gauthier

FANTASTIC VOLCANIC PEAKS TOWER ABOVE THE PALM-FRINGED SHORES OF MOOREA, SOCIETY GROUP

On this jewel among South Sea islands a shady beach, hung with flowering vines, fades away into cool, green distances, as shadowy valleys penetrate mountains which native tradition says were once inhabited by a race of lizard-men.



Photograph by Erling Tams

THE "FIRST MATE" SUPERVISES ARRIVAL AT TAHITI

Ten days out from Nukuhiva, of the Marquesas group, the voyager sailed into Papeete, the principal port of Tahiti.

steadily increasing. The blue of the sky above became covered with a haze that grew denser day by day and made the sun look down upon us with growing coldness and indifference.

The sea became white-capped, but the breaking crests did not sparkle; there was no joy in their leaps.

The clouds, which had at the outset traveled peacefully enough, clear patches of white and gold high up in the endless blue heavens, kept slowly sinking. Day by day they came nearer to the sea level, gaining speed, but losing form and light as they did so, until finally they seemed to detach themselves, gray and woolly, from the dense mist close astern, hurry by and again

fade away in the dark-gray nothingness that loomed lastingly ahead. They were like formless spirits hastening toward Nirvana.

Towering seas shot by, now leaden and menacing, now roaring angrily, as they swept past with thundering masses of seething foam.

Everything was hurrying toward the same direction with ever-increasing velocity. There was something despairingly unavoidable in this apparent rush of forces to destruction. It was like living a sinister tale by Edgar Allan Poe.

In this world of restless motion the *Teddy* tumbled drunkenly onward to her unknown fate. I could not help it, but responsibility lay heavy upon me at that period. No use repeating to myself, as I had so often done aloud, that we must all die some time. There was our boy;

he had not chosen for himself; he had a right to live; and yet only a few days before I had scoffed at those meddling persons who told me that it would be nothing short of murder to take the child along with us on the cruise.

But gradually I regained my confidence. After all, there are dangers ashore also. Life at sea is a healthy one. Left alone, the boy thrived; there was no one to worry about him, to get the mother worried, or to poke pink pills into his small and smoothly operating gullet.

If I was a poor navigator with poor navigation facilities at my disposal, at least I knew something about seamanship. I had served eight years in square-rigged

ships in my younger days. I knew how to handle my boat, and my faith in her knew no bounds.

On the tenth day out the wind culminated, and from then on the weather gave us little reason for complaint.

DAYS OF CONTENTMENT

The days passed on in full contentment and tranquillity. We sailed only during the daytime and hove to at night. Backing the staysail and hoisting a trysail abaft the mast, our little ship practically stayed on the same spot until we resumed our course. Coming on deck in the morning, we sometimes found some flying fish waiting to be fried for breakfast.

Our days were fully occupied. Preparing meals, washing dishes, mending sails and gear, washing clothes, bathing, fishing, kept us so busy that we had but little time to read.

We took shifts at the tiller, my wife and I. The baby generally slept in his little cot in the cockpit. Even in his sleep he kept a firm hold onto the sides of his cot to steady his cherubic body against the rolling of the boat. I think it developed his muscles. He was becoming quite a sailor. One day, in perfectly fine weather, a sea broke in and filled the cockpit, where the child in his cot, much like Moses, was set seafaring on his own. He laughed when his mother rescued him.

However, we had come well south; it was toward the end of July; the sun was scorching and a bath was a pleasant thing. It was a luxury which my wife and I en-



Photograph by Erling Tunde

FRIENDS BRING A WELCOME CONTRIBUTION TO THE SHIP'S LARDER

Terieroo, a Tahitian gentleman of standing, came to visit the author on board the *Teddy* and brought a good-will offering of fresh fruit and vegetables.

joyed perhaps four or five times a day. For weeks we wore nothing but bathing suits. Once or twice I took my bath outside the boat, hanging on to a line, but when sharks began to keep us company, sometimes following in our wake for several days, we were content to take shower baths on deck, hauling up water from outside with a bucket.

The boy had his daily bath in fresh water; he had been accustomed to cold water since he was born.

When we were about 46° west longitude and 13° 40' north latitude, according to my dead reckoning, we sighted a steamer.



© Julia A. Bennett

AN EXTINCT VOLCANO, FRAMED BY PALMS, ON RAIATEA, ONE OF THE SOCIETY ISLANDS

Natives call this the Sacred Water Bowl because its 1,500-foot-wide crater contains a lake 1,200 feet deep.

She may have been some seven or eight miles away and was about to pass by, when all of a sudden she altered her course and came toward us.

BORROWING LONGITUDE FROM A PASSING STEAMER

She proved to be the Brazilian ship *Alegrete*, probably on her way between New York and the River Plate. When she was near enough I signaled to her, asking for my longitude. Her reply gave me great satisfaction; her longitude differed only 31 minutes from mine. I readily admit that it was sheer luck, and neither this nor any later case of well-nigh astonishing accuracy

in my nautical findings has changed my opinion of my navigation. To be safe at sea, I think one should regard one's nautical calculations with a great deal of skepticism. I had all the more reasons because of the lack of proper instruments.

After meeting the Brazilian, I shaped a course more to the southward. I had two reasons for doing so: I wanted to avoid the waters east of the Windward Islands, whence some of the West Indian hurricanes originate in August, and I wanted to come near the steamship tracks, with a view to correcting my position once more before approaching the land (see, also, map, page 648).



Photograph from Hugh M. Smith.

BORABORANS IN FRONT OF THEIR RESIDENCE

Their island, which is one of the Society group, is a rocky mass rising more than 2,000 feet above the sea and surrounded by a low, narrow shore belt where practically all the people live. The houses, although for the most part one-room affairs, are large and airy and far superior to many South Sea homes. An excellent grade of vanilla is grown on Borabora.



Photograph by John A. Bennett.

MODERN MINSTRELS OF THE SOUTH SEAS

Like most of the arts, music is primitive in the South Pacific islands: These boys, natives of Moorea Island (see, also, page 667), sing to the accompaniment which one of their number plays on an island-made guitar. The instrument consists of a tin can sounding box and pieces of fish line for strings.



Photograph by H. R. Müller

OFF TO SEA AGAIN, CAPTAIN AND CREW

After three months of rest and relaxation on the island of Tahiti, the author, with his wife, son, and dog, again turned their floating home seaward and set out on what proved to be one of the most thrilling stages of their wanderings (see text, page 681).



Photograph by Erling Tamba

YOUNG TAHITIANS DISPLAYED A LIVELY INTEREST IN THE "TEDDY" AND HER CREW. In the center of the group are Mrs. Tamba and her young son. While lying in the harbor at Papeete the boat was frequently visited by parties of curious, friendly natives.

However, we sailed for 11 days without sighting a single ship, and I finally had to trust to my own resources. It was blowing strongly, the sea was running high, and I felt that we must be near the land. Of course, with nothing but guesswork and an old rickety sextant to rely on, we experienced an exciting night when making a landfall near Trinidad.

Rocks awash and far off-lying banks in connection with a sweeping current and a heavy sea render the approach extremely dangerous, even for well navigated steamers; and for all my dead reckoning I might be anywhere within a circle of some 500 miles in diameter. Finally it was only the sight of a steamer's headlight far astern, espied by the merest chance, that prevented us from continuing our mad race into destruction.

ATLANTIC CROSSING TAKES SEVEN WEEKS

After 48 days of sailing, we at length sighted the Dutch West Indies, and later arrived at Curaçao, one of the world's largest shipping centers, on account of its oil refineries (see page 658).

Apart from its natural harbors, this island possesses few attractions, being almost barren save for wind-torn divi-divi trees and enormous cacti. As a general rule, the trade wind blows strongly all the year round, but we had a two weeks' spell of dead calm, when the average temperature day and night was 94° Fahrenheit, and on one occasion I even read 97° at 7:30 in the evening. It was suffocating.

The intense heat and sunshine nearly proved our undoing. As we discovered after our departure, the planks in the hull



Photograph by J. P. Ault

A YOUNG SAMOAN CHIEF DRESSED FOR A CEREMONIAL DANCE

Native men of Samoa are fine physical specimens. They are light brown in color, tall, well-formed, and erect in bearing. Young and old are fond of dancing and on holidays form teams to compete. This young man is the leader of one of the dancing teams from Pago-Pago.

of the *Teddy* had shrunk so as to cause a serious leakage above the water line. We struck rough weather outside, and our boat drew water faster than I could pump it out. Fortunately, the island of Aruba was only 70 miles distant, and we managed to make port there with two feet of water in her hold (see, also, illustrations, pages 660 and 664).

The necessary repairs effected, we sailed the 800 miles to Panama in four and one-half days, the best long run we have had so far.



Photograph by Dr. Edward Burton MacDowell

PAGO-PAGO BAY OFFERS THE SAFEST HARBOR IN THE SOUTH SEAS

It is formed in the crater of an immense volcano and during the heaviest gales its waters are comparatively smooth. An important American naval base is located here. (See "America's South Sea Soldiers," by Lorena MacIntyre Quinn, in the NATIONAL GEOGRAPHIC MAGAZINE for September, 1919.)

We arrived at Cristóbal on November 24, at the heels of the last squall of the rainy season. From then on and during our entire stay in the Canal Zone we had the most glorious weather. The harbor authorities found a pleasant and convenient berth for our boat, just opposite the house once occupied by the French engineer De Lesseps. A gangway plank connected us with the shore. Here we stayed for seven weeks.

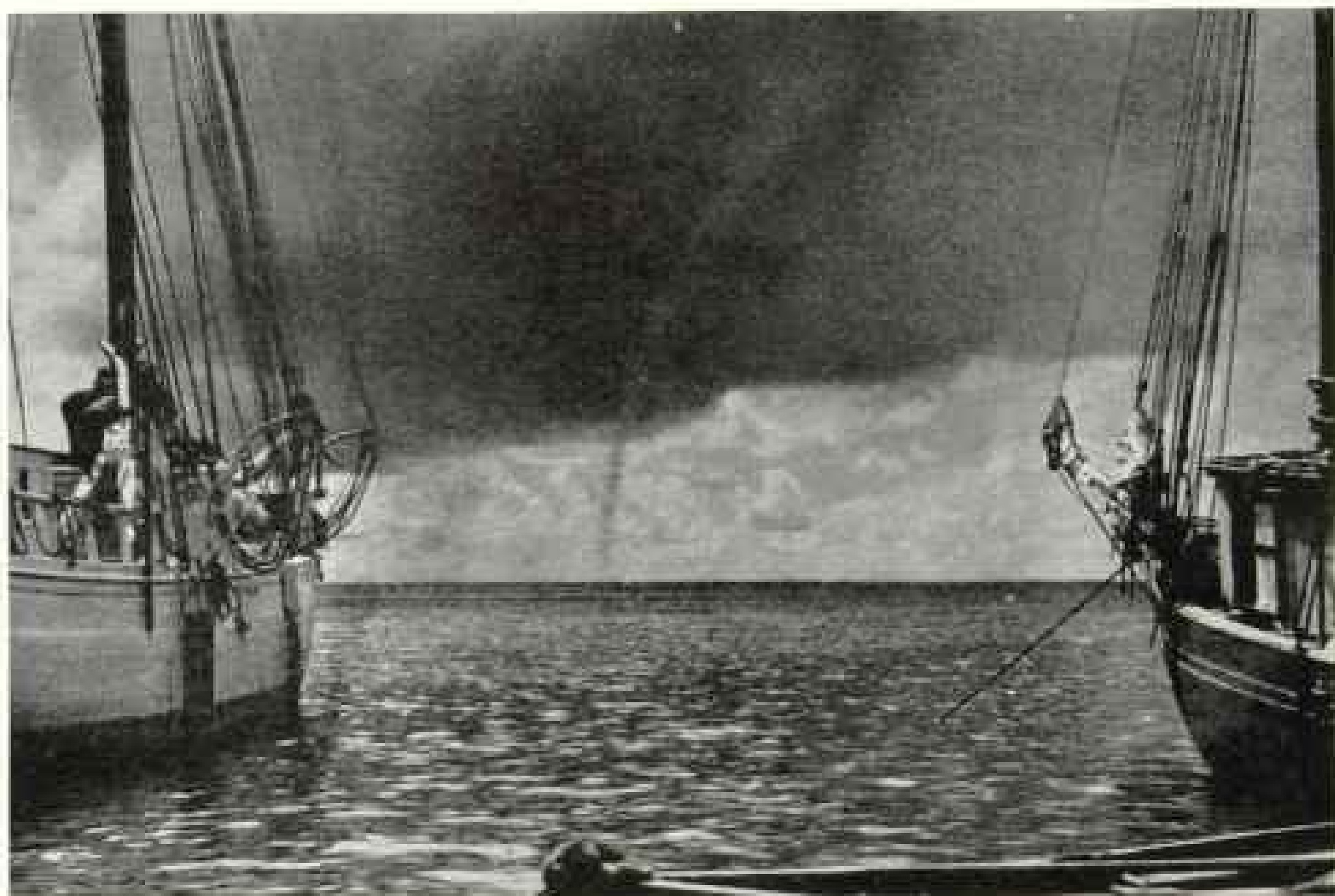
We lived on board, where I did my writing, while my wife and the baby went promenading beneath the palms. I had commenced writing a Norwegian book on our travels.

People were nice to us, taking us sight-seeing in their cars, and so forth, and time passed pleasantly enough while we were watching our chance to get through the Canal.

SAILING THROUGH THE CANAL

Having no engine and being hardly in a position to afford \$100, which the towage through would have cost, I was on the lookout for a small ship willing to take me in tow.

At last it offered itself in the shape of an American motor yacht, which gave us a rope and towed us some two or three miles, as far as the Gatun Locks, but in



Photograph by John A. Bennett

A WATERSPOUT IN THE SOUTH PACIFIC

Two old sailing vessels form a frame for the gigantic funnel of water as it approaches across the calm sea.

the chambers she left us. Meantime, having once entered the Canal and the wind being fair, I saw no reason why I should not hoist my sails; which I did; and so it came about that we passed through the Panama Canal as far as Gamboa under our own canvas. We had no pilot on board.

It was a glorious night. The full moon showered silver over an enchanted world of sleeping jungle. There is no traffic on the Canal at night. When the day fades the Gatun Lake and its surroundings become an integral part of the neighboring wilds.

It seemed as if my wife and I, with the baby wrapped in sleep below, were the sole human inhabitants in that silent vast.

The wind was a mere vague breath, causing not a ripple on the polished surface of the dark waters. *Teddy* glided calmly on, as if by magic. No wake showed her way. The sails hung in huge folds, immovable. Not a block creaked; not a rope shifted. At times we would pass so close to the shore that our boom end would scrape the outreaching branches and stir up a many-

voiced protest from the sleepy inhabitants of the jungle. Alligators would splash noisily into the lake. The angry roar of a puma would call for silence. Then the sleepy voices would subside. Soon again silence brooded over everything. Beneath the dark branches swarmed myriads of fireflies.

We reached Gamboa. A train stood coughing at the station. A voice called out across the water, "*Teddy! Ahoy!*" We were expected.

We passed the remainder of the night at Gamboa, and in the morning a launch towed us through the Gaillard Cut as far as Pedro Miguel. In the afternoon we passed through the last locks, and a launch sent by the port captain towed us to our anchorage off the Balboa Yacht Club's boathouse. The waters that washed around the *Teddy's* bows with the incoming tide were the waters of the Pacific.

More than three months we remained here, enjoying the hospitality of some charming people and being befriended by all. Interesting excursions by boat and motor car took me away from my work



Photograph by Erling Tambe

SMALL DAMAGE RESULTED WHEN WASHED ASHORE IN A GALE ON THE BAY OF ISLANDS, NEW ZEALAND



TONY TAKES UP DEEP-SEA FISHING EARLY IN LIFE

Securely harnessed (see, also, page 688), so as to run no risk of providing an unwilling meal for monsters of the sea (see page 662), the skipper's son, with legs braced, is set to land a "whopper."

more often than they should have done, but as the rainy season drew near again I had to hurry my book to a conclusion.

PREPARING FOR SEA
AGAIN

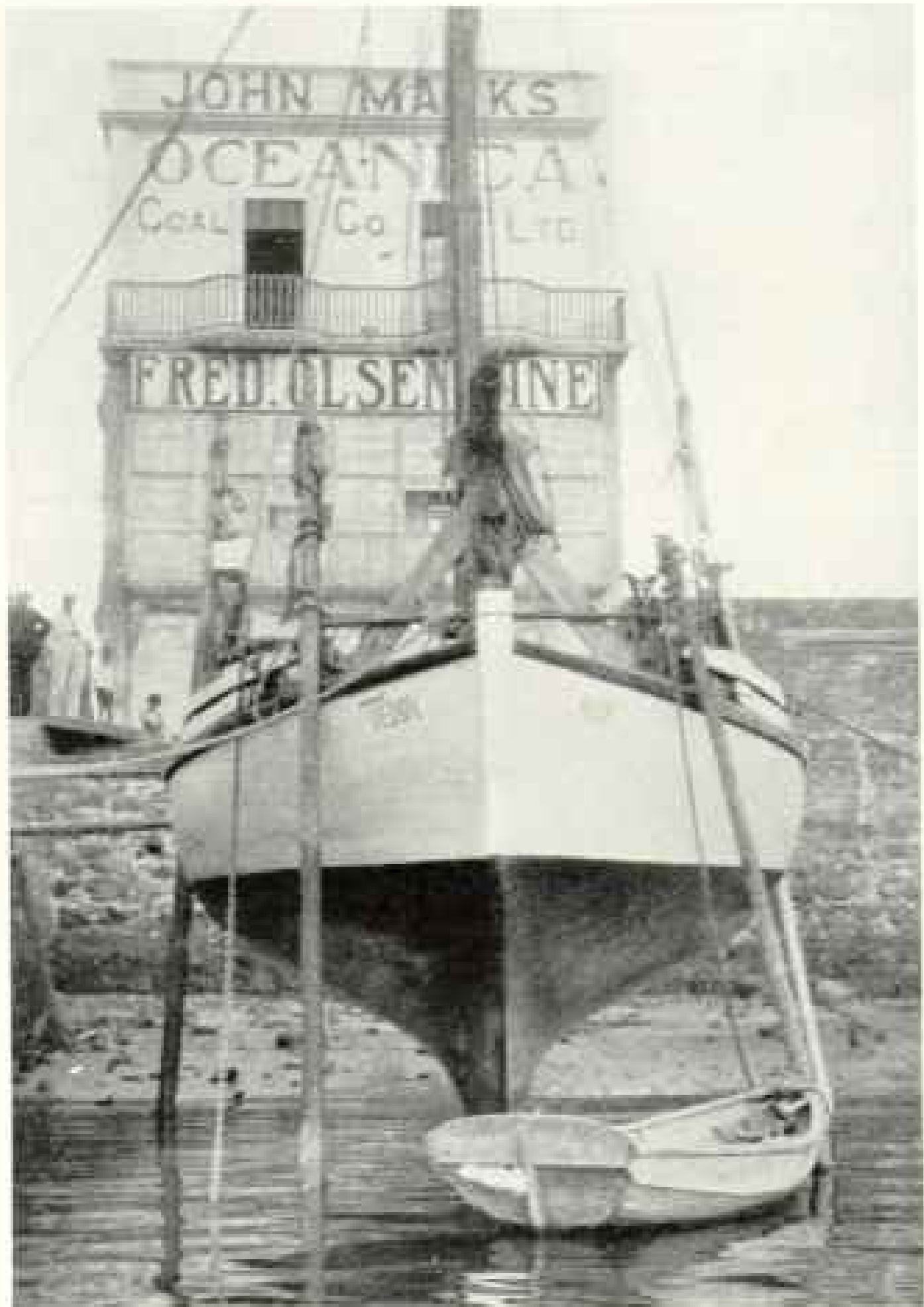
Then, cleaning and painting her bottom, overhauling sails and gear, filling her water tanks, and procuring provisions, I soon had my boat ready for sea once more. Unfortunately, the cash I had in hand would not buy us provisions for more than about one month, except powdered milk for the boy, which I calculated to last for some four months, and ships' biscuits, of which a good friend gave us a six-months' supply. However, Mr. Whaler, Commodore of the Yacht Club, had supplied me with a wonderful selection of fishing gear out of his own stock, and this gear I judged to be equivalent to a good many meals.

On April 17, 1930, our little sloop set sail from Balboa to venture forth across the vast loneliness of the wide Pacific, with its myriad islands full of romance and mystery and the lure of buried treasure.

Cocos Island, 550 miles west of Panama, was our first stop. This uninhabited island, with its dense bush and towering mountains, proved an ideal playground for our younger Robinson Crusoe, especially as legend credits it with a hidden store of several million pounds sterling.

Though my attempts at gold-digging proved abortive, we spent happy days in this luxuriant garden of Nature.

The vegetation was a very picturesque combination of Central American and Pa-



Photograph by Keling Tambo

WHEN HER GRACEFUL LINES SHOW TO BEST
ADVANTAGE

One of the simplest ways to clean the hull of a small craft is to moor it by some friendly sea wall and wait for the tide to go out. "Stilts" serve to keep her on an even keel.

cific island flora. There were tree ferns and palms of many kinds, banyan, pandanus, and a hundred other trees, orchids of many varieties, an abundance of creepers and brushwood. Some of the little valleys which I saw on my short excursions into the interior were of striking beauty. I would stand and gaze and gaze at these wonderful revelations of fairyland, these glimpses of a sylvan paradise, and at last I would force myself to leave these places with a feeling of everlasting regret.

The birds I saw were apparently all sea birds—cormorants, bosun-birds, boo-



Photograph by De Cou from Galloway

FEEDING TROUT AT FAIRY SPRING, ROTORUA

All of New Zealand's fish are not so tame that they will come and eat out of the hand, but probably few other parts of the world can offer such alluring inducements to the angler. Trout or salmon of unusual size abound in nearly all the streams and lakes. Early settlers in the country found few fresh-water fish, and most of the varieties which thrive there now have been introduced from abroad. A farsighted policy of restocking the streams is maintained by both government and private agencies.

bies, and what not. Scorpions seemed to be plentiful also.

Tracks showed me that there were wild pigs on the island, and I had been told that wild cats were numerous, though I came across neither.

FORTY-FIVE DAYS AT SEA

For ten days the *Teddy* remained at anchor in Chatham Bay, while I played the happy part of an island king. It was a wonderful time. An encounter with a huge shark while rowing ashore in my little dinghy, and the subsequent loss and recovery of the dinghy, added to the thrill of our stay there.

Leaving Cocos, we sailed for the Marquesas, a stretch of more than 3,500 miles. Days and weeks passed in splendid isolation, with the ever-present element of adventure and danger. Our food grew daily more restricted. Though fish abounded always—we caught barracudas, bonitos, and dorados, gaily colored and sporty, with a spinner—their flesh soon palled on the appetite and was eaten only after a considerable effort of will.

The tropical fish is much less tasty than the fish abounding in our own native waters. However, it was eaten with relish by the dog, who waxed fat, while we continued to grow thin.



Photograph from William Lilly

POHUTU CAULDRON, WHERE EARTH'S INNER FIRES APPROACH THE SURFACE

Centering about Rotorua, on the North Island of New Zealand, is a remarkable district, where geysers, boiling mud pots, hot mineral springs, and fumaroles create an awe-inspiring area of thermal wonders. The hot springs attract not only sight-seers but those in search of health, as the waters are famous for their healing properties.

For more than a month we lacked potatoes, relying for our supply of C-vitamins solely on half of an onion a day among all three. Fortunately, we had an abundance of canned milk and milk powder for the boy, but our steadily depleted stores were beginning to reveal very little else.

When, at length, after 45 days at sea, we made Taiohae, on the island of Nukuhiva, just one meal, a solitary tin of meat, stood between us and starvation—a sufficiently close shave! Never shall I forget the sweetness of that first orange, brought aboard by the quarantine doctor, the first human being seen by us for more than ten weeks.

Although extremely fertile, the Marquesas Islands are being rapidly depopu-

lated. Scarcely 1,200 natives can now be numbered, and within another 30 years, as the resident Commissioner informed me, the Marquesan race will in all probability have ceased to exist.*

During our stay I went pig-hunting in the Hapaa Valley, known from Herman Melville's great book, "Typee." Not so many years ago a village stood in the valley, a village of some 400 inhabitants. Within 12 months all but two had died, killed either by tuberculosis or by smallpox.

A variety of game abounds in the islands, including cattle, goats, pigs, and fowls, turned savage after the disappear-

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



Photograph by Mrs. Eling Tando

THE AUTHOR SHIFTS SHEEP ON PASTURE LAND NEAR HASTINGS

This part of New Zealand has long been a noted stock-raising district, but although wool and mutton are still important exports the dairy industry has driven sheep from some of its pleasant hills (see, also, text, page 687).

ance of the original owners and breeding freely in the dense bush.

OFF FOR TAHITI

From Nukuhiva we made straight for Tahiti, some 900 miles distant, and after three and a half days we arrived in the neighborhood of the Tuamotus, thus accomplishing the first half of the passage. I had expected to sight Takaroa, the most northerly of the atolls, in our course, but the day passed without revealing the coconut palms of that island and we found ourselves becalmed. About midnight, however, the wind came again from the east, bringing with it the unmistakable smell of burnt borao, a wood common in these islands. That sufficed for our bearings; we proceeded on our course, and with the first break of daylight made out the next chain of islands, groups of palms rising above the horizon—Arutua.

In thus determining our exact position we had overcome our chief nautical difficulties, but were still destined to experience some hardships. That same night, while tumbling about in a choppy sea, our forestays carried away, leaving the entire rigging swaying dangerously from side to

side, tearing away the mast collar, chewing the wedges to pulp, and threatening to break up the deck.

After toiling half the night, I managed to secure the stays and repair the rigging after a fashion; but when on the following day a hard southerly gale came our way, to keep us busy for two days, I feared the strain must prove too great and the rigging must give way.

Fortune favored us, however; the sky once more became serene, and on the morning of the tenth day after our departure from Nukuhiva we sailed into the pretty port of Papeete, the principal place of Tahiti.

A fine island, Tahiti, and full of friendly people. There we remained for three months, dreaming away the days under a continually blue sky.

A RACE WITH WATER AND DEATH

When at length I managed to rouse myself and proceed on our journey westward, it chanced that the day we left Papeete marked the anniversary of our eventful departure from Curaçao. Our former experiences were repeated. Outside, the trade wind blew with the force of a gale and the



Photograph by Ray Hansard

CAPE KIDNAPPERS MARKS THE SOUTHERN EXTREMITY OF HAWKES BAY.

The name is derived from the fact that here the Maoris tried to kidnap a native boy that Captain Cook had brought with him from Tahiti. A sanctuary for sea birds is now located on this cape.

sea was rough. The sun-dried boat drew water like a sieve, while she pushed along with full sails set.

I pumped; the water gained on me. Faster and still faster I pumped. It was very exhausting. The water, nevertheless, rose steadily above the cabin floor, inch by inch.

I realized that the deeper it came the faster our boat would sink, but what could I do but continue to pump for all I was worth? Then the pump carried away and I had no means of repairing it.

This was a race against time. We had to make Moorea or drown. So I set more sails on *Teddy*, although she had already more than was safe. Onward she flew like a bolting racehorse. I had not the time to log her speed, but I am convinced that she did eleven or more knots. Oh, she was grand! Can you wonder that I love her?

We made it! But when at last we came to anchor at the head of beautiful Papetoai Bay, we had at least five tons of water inside. The bow lay very low and the general draft was almost one foot more than usual. One-half hour longer at sea would have finished us. In future I shall eye suspiciously that historic date.

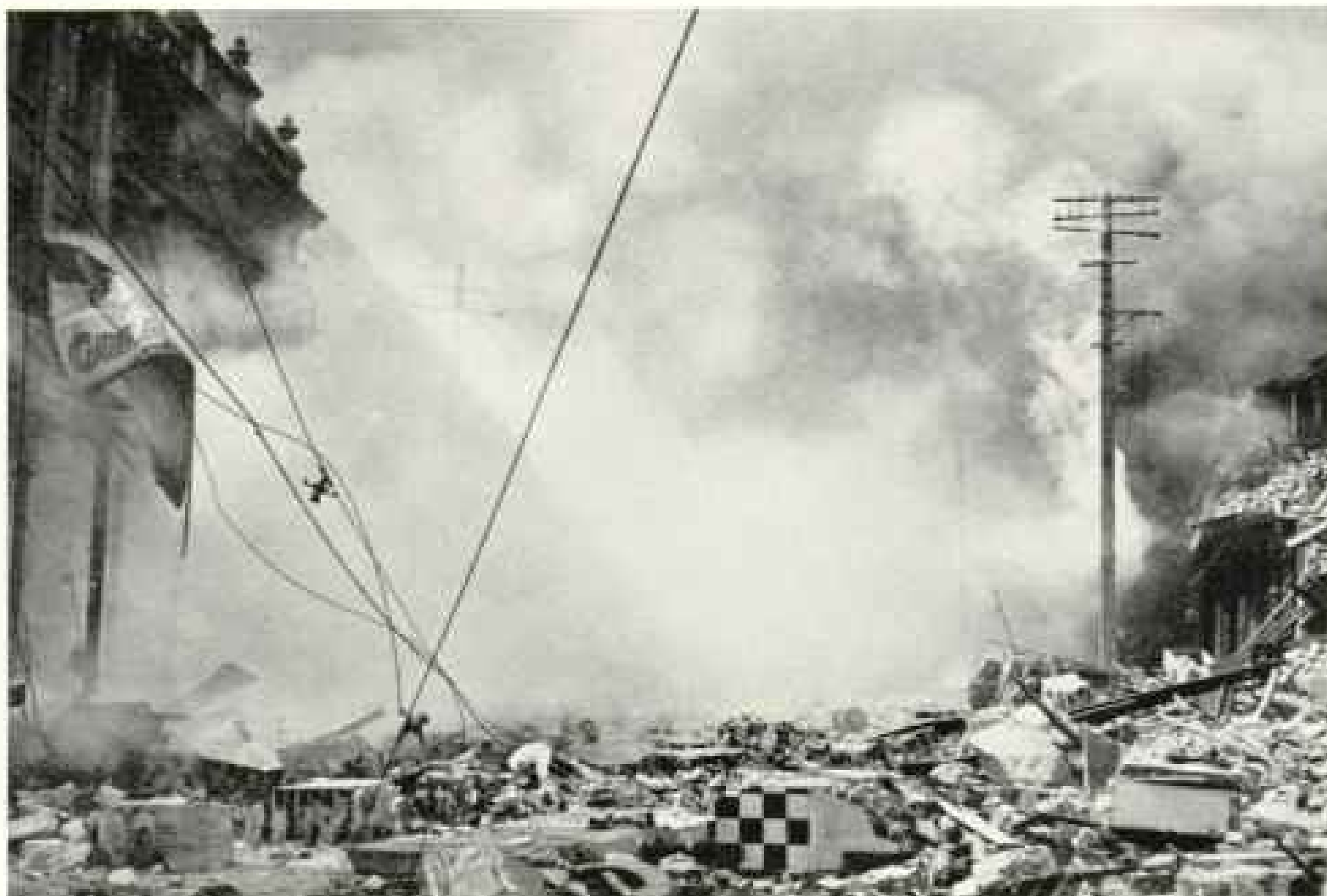
Although I was tempted to linger at Moorea, the most beautiful of all the islands, I realized the necessity of crossing the western Pacific before the approaching hurricane season rendered conditions too difficult; so five days later we were once more ready to get under way.

We next called at the island of Raiatea, then at Borabora, and thence we proceeded to Pago-Pago, on the island of Tutuila, American Samoa (see pages 670 to 674).

Our voyage to Samoa took us past Mau-piti at a cable's distance from the huge breakers, which render access to the pass extremely dangerous except in a calm sea. The necessity for haste prevented me from carrying out my original intention of calling there, and after seeing the entrance I felt no regrets at passing by.

Some 200 miles farther west we sailed between the atolls of Scilly and Bellingshausen without having sighted any of them, and from then onward our path was clear for a long while.

Meantime the weather had become misty and squally, and with a high and choppy sea running, the wear on our gear was heavy. The mast started to work again, and there was hardly a rope that was not



Photograph from Keling Tautou

THRIVING NAPIER CRUMBLLED TO SMOLDERING RUINS IN A FEW SECONDS

Shortly before 11 o'clock on the morning of February 3, 1931, the district about Napier and Hastings, on the North Island of New Zealand, was visited by a terrific earthquake. At Napier the sea front rose eight or ten feet. Hills behind the town crumbled away in clouds of dust. Walls of houses were torn violently away and great angry tongues of flame appeared, to burn for a day and a night, until little but smoking ruins remained of the once prosperous city.

badly chafed. I felt some uneasiness, for the season was so far advanced that bad weather might at any time be expected. As a matter of fact, we experienced on November 24 the tail end of a hurricane that a day or so before had raged in the Fijian and Tongan Islands.

A HEARTY WELCOME AT PAGO-PAGO

On November 26 we made Pago-Pago about noon, sweeping into port at a speed of nine knots, having taken 18 days to cover a distance of about 1,200 miles from Borabora. Checking up afterward on my navigation, I found that I must have sailed on the way practically across Rose Island, a tiny atoll. Thus good luck still held.

At Pago-Pago we received a hearty welcome from the officers and men of the Naval Station, the Governor himself paying a formal call to the *Teddy*. Two weeks we stayed in Samoa, restocking the mast and overhauling the rigging. Heavy rain and wind prevailed all the time. A Sa-

moan downpour is hard to imagine unless actually experienced; in Pago-Pago the average annual rainfall is about 200 inches, most of which falls, of course, in the rainy season.

We set sail in rough weather, and as we worked our way out into the open ocean the wind kept steadily increasing. Clearing Steps Point, the jib, just thoroughly mended in Pago-Pago, carried away again, our usual sign that it is time to shorten sails. I took in the mainsail and set the storm jib and the storm trysail, keeping the full forestaysail on her for speed. Lashing the tiller and bringing out a riding light finished the job. Then, drenched and exhausted, we all went below.

INFLUENZA STRIKES DOWN MASTER AND CREW

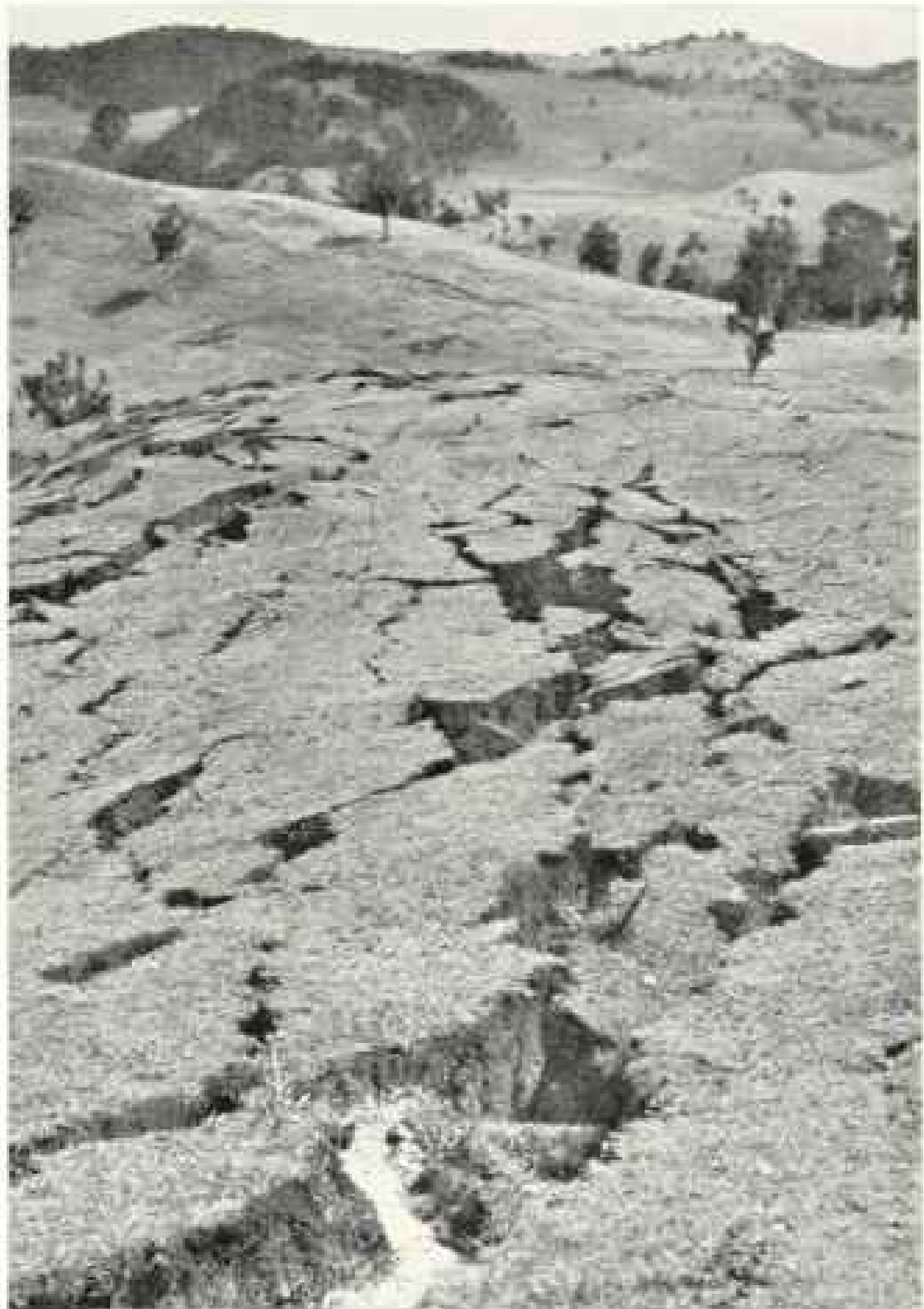
I soon realized the extent of my luck. It would have been impossible next day to manage the sails, for I fell sick with influenza, high fever, and an infected right

arm. Fortunately, this was the first and only time any member of the crew had been sick on our cruise.

For three weeks now sails and tiller remained practically untouched. As if guided by a higher power, the boat found her way among the islands, and even the wind seemed to change so as to accommodate our course. I lay helpless in my bunk, dragging myself out to take a noon altitude if the sun was shining, incapable of any further exertion. My wife and the boy also contracted influenza, but fortunately soon recovered. At last the sickness left me, and by the time we passed the Kermadecs I was well enough to take charge once more.

We did not actually sight the islands, but a southeasterly wind carried the sulphurous odors of two of these volcanic isles our way, thus giving us an approximate bearing. A few days later we set all sails, and benefiting from a strong north-westerly wind, made good time toward our destination, New Zealand, which we sighted on the eve of January 4, the 25th day of our voyage.

As in the case of our approach to Trinidad after crossing the Atlantic, so on approaching New Zealand, after sailing about 1,750 miles from Samoa, I relied on the vessels which I should probably meet near the coast to give me my correct position before making a landfall. In both cases I was disappointed, and I had to make out my whereabouts as best I could, relying on my usual good fortune. Nor did it fail me. On the morning of January 6, 1931, we arrived without misadventure at Auckland,



Photograph by Erling Tamba

REMINDEES OF THE EARTHQUAKE AT HAWKES BAY

The shocks which destroyed the cities of Napier and Hastings, New Zealand, last February also left their mark in the country. Great cracks and fissures extended all the way across many a field, as if some giant plow had worked them (see, also, illustration, opposite page).

in spite of the fact that I possessed neither charts of New Zealand nor a pilot book to guide me.

OVERWHELMING COURTESIES IN NEW ZEALAND

New Zealand gave us a heartier welcome than we had had anywhere else; it is one of the most hospitable countries in the world. Congratulations, flowers, invitations, and all sorts of courtesies were showered upon our undeserving persons. It kept me quite busy writing to all these kind people. After a fortnight, however,



Photograph from Erling Tamba

NEW ZEALAND'S YACHTING FRATERNITY EXTENDED THEIR NORSE VISITOR A HEARTY WELCOME

Maoriland boats accompanied the *Teddy* (center) as she rounded North Head, near Auckland. The sporting New Zealanders gave Captain Tamba every assistance in his preparations for the Trans-Tasman race, even to supplying a crew for his ship (see text, page 688).



STARTING ON THE RACE ACROSS THE TASMAN SEA

Nearly 1,500 miles of water separate Auckland, the starting point, on the North Island of New Zealand, and the finish, at Sydney, Australia. *Teddy*, with Captain Tams in command, won the cup (see text, page 688).

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Photograph by R. Moulin from Ewing Galloway

SUMMER CROWDS THROUGH THE SYDNEY BEACHES IN JANUARY AND FEBRUARY



Photograph by Erling Tambs

ALL DRESSED UP AND STRAINING AT THE ANCHOR

In this 40-foot sailboat the author and his family have traveled more than half around the world (see map, page 648). Through all kinds of weather and in the heaviest seas *Teddy* has proved her ability as a truly "seagoing" craft.

following an invitation from my New Zealand aunt, who owns a sheep farm in Hawkes Bay, the three of us took the service car to Napier, leaving the boat and the dog in Auckland, in the good care of some yachtsmen friends.

A STOP IN THE THERMAL REGION

On the way we stopped at Rotorua, the center of the wonderful Thermal Region.* We had been invited to come and stay with an old countryman of ours, old "Peter,"

* See, also, "Waimangu and the Hot-spring Country of New Zealand," by Joseph C. Grew, in the NATIONAL GEOGRAPHIC MAGAZINE for August, 1923.

proprietor of the Lake House Hotel.

The incessant volcanic activity, which crops out everywhere in this district, penetrating an obviously thin crust of earth in the form of geysers, boiling mud pools, hot springs, roaring steam holes, or fumaroles, is certainly a phenomenon that no visitor to New Zealand should miss; yet I would not like to live quite so near to the internal furnaces of the earth. There is something uncanny about the thought of being boiled alive, even if it be in the most beautiful surroundings (see illustration, page 679). After a few days' stay we proceeded to Hawkes Bay.

A RICH GRAZING COUNTRY

My aunt's farm was situated in the neighborhood of Hastings, in a pleasant, hilly country which feeds even up to six sheep to the acre. Hawkes Bay, however, is a district which occasionally suffers from long

droughts; and at the time of our arrival the country had been without rain for seven months. It did not look its best. The paddocks were brown and scorched and to me it was astonishing that the sheep could still keep in such good condition. However, gradually the farmers around had to send away stock to graze in other parts of the country, and even my aunt had to send some, although her place was better off in regard to water than most of the others.

Consequently there was a great deal of shifting stock to be done, at which work I naturally lent a hand, though, perhaps, I was not of very much use.

I soon found that riding up and down the hill-sides, chasing sheep and cattle, was great fun, and therefore took my share of it whenever opportunity arose (see illustration, page 680). My wife and the boy, in the meantime, spent a happy time about the place, where all were doing their best to spoil them.

EARTHQUAKES BRING CATASTROPHE

In this manner two pleasant weeks had passed when the great earthquake of February 3, 1931, put a sudden end to our gaiety.

I shall not dwell on the horrors of this terrible catastrophe, which so unexpectedly changed the fortunes and destinies of some 50,000 people and transformed the thrifty and pretty towns of Napier and Hastings into ruins (see illustrations, pages 682 and 683).

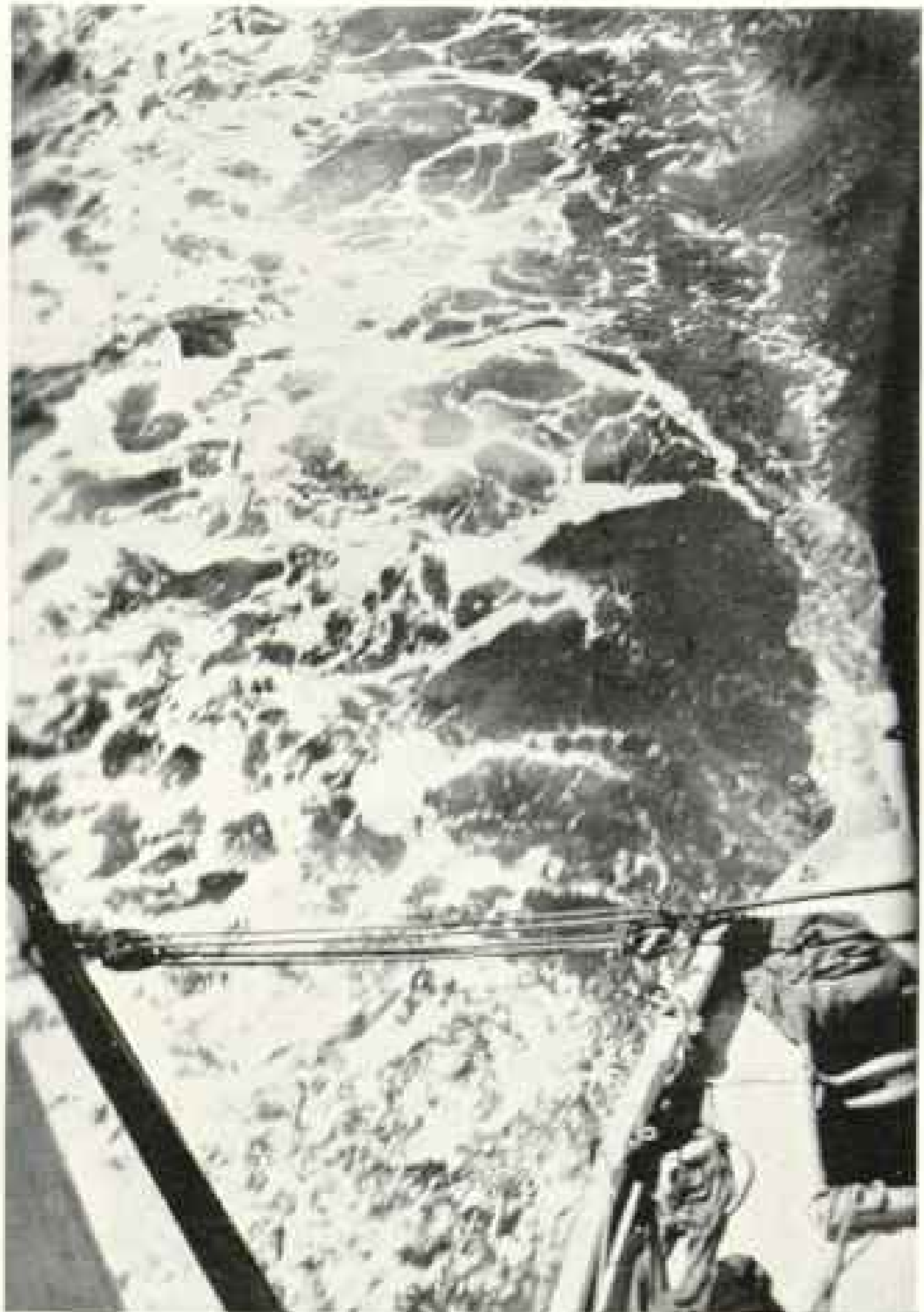
It all seemed so incongruous. It happened on a bright, sunny morning, when certainly no one thought of death and disaster.

My aunt's little nephew, who had left the night before to resume his schooling at Hastings, was buried under the falling walls of a big department store in that town.

On the farm no one was injured, thanks to the fact that the buildings were of wood, but even there the earthquake did great damage.

SHOCKS CONTINUE FOR DAYS

It had been our intention to leave in a few days, but, seeing that I could be of some service, we remained. Shocks and tremors were experienced every day, but they were not so violent as the first one, and gradually one became accustomed to them.



Photograph by Erling Tambs

"TEDDY'S" WAKE, SEEN FROM ALOFT

In spite of her age, the *Teddy* could show a good pair of heels, as she did in winning the Trans-Tasman yacht race (see text below). A comparison of the logs of the contestants, made at the end of the race, showed that the sturdy Norwegian vessel made the best day's run of 185 miles.

However, three weeks later I returned to Auckland to make my boat once more ready for sea. We had made up our minds to go to Sydney, Australia.

How it came about that I came to take part in an ocean race on this journey, instead of jogging peacefully along as usual, is a matter of no special interest. I think I did it because I could not resist the temptation to give the old boat a chance. She deserved it.

Let me add a final word. I am lying in my bunk listening to the surge of the water



Photograph by Erling Tambo

HE CARRIES INSURANCE AGAINST FALLING OVERBOARD

An ingenious home-made harness has made seagoing safe for the youngest member of the *Teddy's* crew until he gets his "sea legs" and learns to hang on.

rushing by as the *Teddy* sails on her way to Sydney. We are racing for the Trans-Tasman Cup. I have a full crew aboard this time—four good New Zealand yachtsmen, bright young fellows and keen as mustard.

Teddy, now more than 40 years old, has won the Trans-Tasman Cup, the trophy in the first proper ocean race of such length in the Southern Hemisphere. But she deserves it. She is a beauty in spite of her years. Good old *Teddy*!

My wife and the baby stayed behind in Auckland, where I shall return to pick them up. I am having an easy time of it, with all these youngsters to do my wonted work.

The soothing surge puts my mind at rest, while my thoughts are wandering contentedly along vain and beautiful paths.

I am happy; I know that I did the right thing when I bought this boat three years ago. It has been worth while.

I am my own master, lord of my actions, more free than a king. I have made friends, good friends, and friendship—the real thing—has ever been a rare and precious commodity. I have a good wife and a good boat. My heart is full of dear memories. Therefore I am rich.

Our boy has grown strong in the fresh sea breeze, while even my wife and I are making a good show in life's ever-futile battle against time.

What more has the world to give me?

I have returned to Auckland with my boat.

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

DINKELSBÜHL, ROMANTIC VISION FROM THE PAST

DINKELSBÜHL has paid small toll to the centuries. It remains to-day the perfect example of a fortified medieval town, little known to the outside world, and essentially unchanged during the 300 years which have passed since the varying fortunes of the Thirty Years' War brought the conquering Swedish armies of Gustavus Adolphus to its gates. Visitors to northern Bavaria have heeded the call of its larger sister communities—Nuremberg, Rothenburg, and Nördlingen—but have passed Dinkelsbühl by. As a consequence, it is devoid of self-consciousness.

Approaching from across the lovely valley through which the tiny Wörnitz carries its waters to the rushing Danube, we behold a living fairy-tale town—a vision from the long-gone Middle Ages. As we cross a bridge over the broad, lily-padded moat which was once the city's first line of defense and enter through one of the tower gates, it would occasion little surprise to be challenged brusquely by some ancient sentinel in helmet and coat of mail. However, once within the town, the traveler finds a fascinating picture of serenity.

The urge for speed has not reached Dinkelsbühl; streets still echo to the clatter and clump of horses and oxen. People live placidly, farming the fertile fields of the surrounding valley or conducting the same small enterprises which engaged the attention of generations of their forbears.

ALL SIGNS CONFORM TO SURROUNDINGS

There is no air of dilapidation about the place. Everything is incredibly old but extremely well preserved. Tradition is hallowed and kept alive here, and changes that would alter the medieval characteristics of the city are not tolerated. The Council sees to it that when repairs have to be made on the houses they are carried out in such a manner as to preserve the original form, and no shrieking signs may be displayed. A well-known coffee company wished to open a branch in Dinkelsbühl. Permission to do so was given only on condition that the firm's regular signs, in glaring red, should not be used; and of this concern's many branch stores in Germany, only the one in Dinkelsbühl has to get along without its usual device.

The main streets of the city radiate toward the cardinal points from a central plaza and are lined with shops and with fine old patrician houses. Time-mellowed buildings, gabled and timbered, rest cozily against each other, while occasionally an architectural giant rears its steep-sided roof above the others, proclaiming to all comers its sturdy old age.

Branching off from the main thoroughfares are narrow, winding lanes and side streets which abound in treasures of medieval artistry. Exquisite examples of frame and stucco building, intricate, hand-forged iron rails and gratings, and beautiful, secluded courts and gardens await the explorer of these enchanting byways.

In part, the various occupations are still confined to certain streets, as, for instance, the blacksmiths. In three so-called "smiths' streets" the masters stand at their forges and hammer out on gigantic anvils horse-shoes, wagon tires, scythes, and other implements. Rarely does one see an automobile in front of these shops. The principal clients are peasants, who come from the surrounding country, bringing their wagons, plows, and drags for repair.

Trades that are dying out in other places still exist in Dinkelsbühl. Coopers make barrels by hand in the open air. Copper-smiths hammer out pots and kettles, baking tins, and other utensils, for copper in the kitchen is still held in high esteem in the small cities and in country districts, and one of the few surviving pewter molders still plies his trade here.

Everywhere, hanging over the doorways, are wonderfully executed wrought-iron signs indicative of the activities carried on within. One might infer that at some time in Dinkelsbühl's history the guild of smiths was a power within the town. At any rate, the signs lend to the streets over which they swing a note of peculiar interest.

RAINBOW COLORS DECORATE DWELLINGS

As in so many South German towns, the houses are for the most part gaily painted. The color combinations are perhaps a bit startling, but they are always effective.

And flowers vie for color supremacy with the brightly tinted houses. No nook or cranny where a plant might grow has



Photograph by Burton Holmes from Galloway

YOUTHFUL HIKERS ENJOY THE SIGHTS OF A MEDIEVAL CITY

Hiking is a favorite sport among the young people of Germany. During school vacations they are to be seen all over the republic, learning their country's geography and history at first hand. Many old castles and other large buildings have been especially set aside for their use as hostelries, where they can stay for a nominal charge or, in some instances, without cost. On the Dinkelsbühl market square (see, also, opposite page).



Photograph by Friedrich Frölich

AN ANNUAL FESTIVAL PLAY DEPICTS THE SURRENDER OF DINKELSBÜHL TO
THE SWEDISH ARMY (SEE TEXT, PAGE 702)

The parts in this performance are nearly all taken by children, and the boy who impersonates the Swedish colonel recites the speech which that warrior made in 1632 to the suppliant children.



Photograph by Burton Holmes from Galloway

PIGS FOR SALE IN THE MARKET SQUARE

For centuries the commercial and civic activities of Dinkelsbühl have centered here.

been overlooked. Masses of vines cover the garden walls, while nearly every house has its window boxes filled with petunias, geraniums, and other gay blooms. Wells and fountains are ringed about with the same living colors.

DINKELSBÜHL WAS OLD WHEN THE BATTLE OF HASTINGS WAS FOUGHT

Overshadowing the market place, as indeed it overshadows everything else in the city, is the noble Church of Saint George, built during the latter part of the 15th century, when Dinkelsbühl was at the height of its influence. To the 5,000 inhabitants it represents something more than a place of worship. It is an expression of all the civic pride and aspirations of the sturdy old burghers who directed its erection.

And right well they succeeded, for Saint George's is perhaps the finest late Gothic church in southern Germany. The design and execution of the structure were placed in the able hands of the master architect Nikolaus Eseler von Alzey. At the same time that he received this commission the city fathers of near-by Nördlingen engaged him to build their cathedral. But Nördlingers had just reason to complain of their bargain, for they saw little of the great artist. His heart was in the work at Dinkelsbühl, and there he spent most of his time.

Saint George's was under construction for nearly half a century, and when the time came to build the great tower planned for it, funds were not available. The master's vision was never completely realized, but the stamp of his greatness abides in the interior with its soaring arched ceiling.

Dinkelsbühl was founded long before the Normans conquered England. More than a thousand years ago a group of Franconian peasant warriors had settled on an elevation in the Wörnitz Valley. There, when not engaged in fighting for their existence against raiding Franks or Magyars, they raised grain.

About the year 928, at the command of Emperor Heinrich the First, walls were erected around the tiny settlement, and there came into being a fortified city destined to withstand the strifes and intrigues of a millennium and to play an important rôle in the pageant of history which those ten centuries were to unfold.

There is division of opinion as to the origin of the city's name. Some authori-

ties claim the early Franconian settlement was on a low hill (bühel) belonging to a man named Dinko or Tinko. Thus Dinkelsbühl. Others assert that the chief crop of the locality gave the city its name, and that it means wheat (Dinkel) hill (bühel).

However the city came by its name, it prospered. The location was a favored one, easy of defense, and on a much-frequented route from the old Roman Empire into Germany. As a well fortified city, Dinkelsbühl offered safety for travelers and became a popular stopping place for those who traversed the Roman Road.

From the beginning it belonged to the Imperial Family, and its government passed by gift or grant or sale to various South German nobles. The famous Frederick Barbarossa intended at one time to give the city as a wedding present to his son Konrad, Duke of Rothenburg, but his plans miscarried, and nearly two centuries later, in 1351, Emperor Karl IV granted it as an hereditary feudal tenure to the Prince of Oettingen. That same year the citizens bought the nobleman's rights from him in perpetuity and Dinkelsbühl began its career as a "free city."

Many of the emperors of the Holy Roman Empire visited Dinkelsbühl, and whenever one came there was a ceremonious reception on the market square, at which the Council presented to the Emperor and his entourage the "customary" gifts. What these amounted to is shown by a record in the municipal archives dealing with a visit of Emperor Maximilian II on June 12, 1570. The gifts were:

To the Emperor: A valuable sideboard, 8 tubs of pike, 8 tubs of carp, 16 bags of oats, 7 pails of Rhine wine, and 7 pails of Neckar wine.

To the Empress: A sideboard worth 88½ gulden, 6 tubs of pike, 6 tubs of carp, 12 sacks of oats, and 7 pails of wine.

To the imperial family: 5 sacks of oats and 42 cans of wine.

To the vice-chancellor: A sideboard worth 61 gulden.

To the imperial secretary: 24 gulden, and 40 thaler to the rest of the entourage.

In addition to these gifts, the city also paid for the board and lodging of the imperial guests and their followers.

HOW THE DINKELSBÜHLERS CAME TO BE CALLED "BLUE COOKERS"

The Dinkelsbühlers have been known for centuries as "Die Blausieder," "the

DINKELSBÜHL, ROMANTIC VISION FROM THE PAST



© National Geographic Society

Natural Color Photograph by Hans Hildenbrand

ANCIENT GABLES THROW THEIR SHADOWS OVER A FAIRY TALE GARDEN

Tucked away in the courtyards of many Dinkelsbühl houses are lovely garden plots. The doors in the three upper stories of the steep-roofed building in the background were used to facilitate the storage of grain which was commonly kept above the living floors for use in times of siege.



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CITIZENS OF DINKELSHUHL DON THE COSTUMES OF LONG AGO TO REENACT SCENES FROM THEIR EVENTFUL PAST

The history of the city extends over more than a thousand years, but no event in all its procession of triumphs and defeats has left so lasting a mark as the occasion in 1632, when the town was saved from plunder at the hands of Swedish invaders by the pleas of its children. Ever since, the citizens have celebrated an annual children's festival in memory of this deliverance.



Natural Color Photographs by Hans Hildenbrand



© National Geographic Society

Natural Color Photograph by Hans Hildenbrand

FLOWERING TREES BLEND THEIR FRESH BEAUTY WITH THE MELLOW CHARM OF WEATHERED MASONRY.

The first walls were built around Dinkelsbühl about 928. The surviving fortifications were erected more than 300 years later. Time has taken small toll of them and the sections badly damaged during the city's numerous sieges have been replaced.



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ARBORS AND FLOWER BOXES BRIGHTEN CENTENARIAN
STREETS WITH LIVING COLOR



Natural Color Photographs by Hans Hilfenbrand
FRAGRANT BLOSSOMS OF A BAVARIAN SPRING LURE
FAIR STROLLERS TO THE CITY PARK



© National Geographic Society

Natural Color Photograph by Hans Hildenbrand

QUIET WATERS REFLECT A SCENE FROM GERMANY'S PAST

Dinkelsbühl, Rothenburg, Nördlingen, and Nuromberg constitute a unique group of medieval cities (see the National Geographic Magazine for February, 1926, and December, 1928). To visit them is to turn back the pages of history to the days of the Holy Roman Empire. Each of the four has some peculiar claim to distinction, but of them all, Dinkelsbühl is perhaps the least changed.



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Natural Color Photographs by Hans Hildenbrand

THREE CENTURIES HAVE WROUGHT SMALL CHANGE IN THE PEASANT FESTIVAL COSTUMES OF SOUTH GERMANY

The girls at the left are representative modern maidens who live in the country about Dinkelsbühl. The young lady at the right, who takes a leading part in the city's annual pageant, wears a costume popular in the 17th century.



© National Geographic Society

Natural Color Photograph by Hans Hildenbrand

THE OLD MILL AT DINKELSBÜHL WAS OPERATING BEFORE COLUMBUS SET OUT ON HIS MOMENTOUS VOYAGE OF DISCOVERY

In the turbulent Middle Ages this remarkable structure (left) served a dual purpose. Farmers who in peaceful times brought their wheat here to be ground into flour, came in times of strife to seek protection behind its fortified walls. According to local tradition, the mill, which was built about 1490, occupies the site of a much earlier one.



A FLOWER-DECKED WALK BESIDE THE CUPOLA-CAPPED SEGRINGER TOWER



© National Geographic Society

Natural Color Photographs by Hans Hildenbrand

SEGRINGER GATE HAS BORNE THE BRUNT OF MANY FIERCE ASSAULTS

Occupying the most exposed position of any of the entrances to Dinkelsbühl, this gate and the tower (see above) which rises over it, have frequently been the target of attacking artillery. So serious was the damage done by a Swedish cannonade in 1648 that the tower had to be almost completely rebuilt. Its name derives from the fact that the road which passes through the gate leads to the near-by village of Segringer.

blue cookers." A favorite method of serving carp, trout, and certain other fish in Germany is "blue cooked"—that is, boiled in water to which a little vinegar has been added. The process is called "blausieden," and those who do the "blue boiling" are "Blausieder."

In the early Middle Ages the authorities of Dinkelsbühl succeeded in catching a robber and murderer who had been carrying on his gruesome occupation for a long time. A special session of the Council was called on a hot summer afternoon to decide what punishment to mete out to him. One of the councilmen, who was a trifle deaf, went to sleep during the debate and dreamed that his cook was about to prepare a fine carp for him. When the time came for him to vote on the question before the Council, a fellow-member poked him in the ribs and asked:

"Hannes, what do you say we shall do with our robber?"

Hannes, rudely awakened from his dream, thought it was his cook asking about the carp.

"Blausieden!" (Boil him blue), he answered.

Since that day the Dinkelsbühl-ers have been known as "Die Blausieder."

Neither the robber nor anybody else has been boiled in Dinkelsbühl, but good food is still held in high esteem—and good drink not less. Following ancient custom, the men come together every Friday evening, at different inns, in turn for their "social evening." There, round the flowing bowl, they smoke their long pipes and discuss the burning questions of the day with great zeal.

At the dawn of the 16th century Dinkelsbühl's star had begun to wane. Strife from within and without hastened the decline. Luther's new doctrines found numerous adherents in the city, but nearly all of the aristocracy clung to their old beliefs, and bitter dissensions ensued.

During the Thirty Years' War, Dinkelsbühl was besieged and captured a number of times, losing two-thirds of its population and a vast treasure that had to be paid as ransom or indemnity.

Of all the events in the city's turbulent career, perhaps none has left so lasting an impress as the siege of 1632. Once each year its citizens turn back the pages of history and live again those unforgettable

days when Swedish armies thundered at their gates and the town was at the mercy of invaders from the north.

Despair gripped the hearts of the harassed people as darkness settled over their ancient city on May 10, 1632. Flickering lights of countless camp fires bespoke the presence of the veteran Swedish troops who waited determinedly outside the walls. Few shots broke the stillness of the late spring evening, for the war had been a long one and neither side had powder to waste. But those within knew that the morrow would bring with it a hail of iron death if resistance were continued. Months previously, the Council had declined an invitation to place the city under the "protection" of His Swedish Majesty, and more recently they had refused Colonel von Sperreuth's demand for surrender. Now no mercy might be expected.

A SCHOOL TEACHER TO THE RESCUE

Two messages had been received that day. One, boldly delivered and ominously brief, again demanded unconditional surrender. The other, surreptitiously smuggled through the besieging forces, brought word that an imperial army could not come to the rescue of the sorely pressed town.

As night wore on, the Council could arrive at no decision on the peremptory demand for surrender.

Worn by the strain of prolonged strife and weak with hunger, many of the townspeople would gladly have opened wide the gates and thrown themselves upon the mercy of the invaders. But not so the Council. A majority represented an old patrician element which chose rather to die than to surrender.

Bells tolled off the fleeting hours and, as dawn drew near and the time approached when an answer must be returned, the atmosphere of the Council chamber grew tense. The situation seemed hopeless, when a faint knock sounded on the door and a plainly dressed young woman, a tower warder's daughter, made her way timidly into the room. In some way she had learned that the Swedish commander had recently received word of the death of his five-year-old son, an only child, and she had come to beg the Council to allow her to take some of the city's children with her and go to plead with the bereaved warrior to spare them and their homes.



Photograph by Burton Holmes from Galloway

OXEN STILL FIND THEIR LEISURELY WAY THROUGH DINKELSBÜHL

Members of the Council were not impressed with this proposal, but no one had a better plan to offer, so they gave their consent and the young woman went out to prepare for her forlorn-hope mission.

Where stone walls, bullets, and swords had failed to save the city, a girl's wit and the pleadings of children succeeded. When the Swedish colonel approached the gates next day to receive the tokens of surrender, he suddenly found himself surrounded by a group of tiny suppliants. At first surprise and annoyance surged over his face. Then his eye fastened upon a blue-eyed, fair-haired boy in the crowd and his stern features relaxed, as he thought of the young son he had left in Sweden and whom he would never see again.

Reaching down from his saddle he lifted the little fellow into his arms and the victory of Dinkelsbühl's army of toddlers was complete. According to tradition, he turned to the Council members standing anxiously by and said:

"Just for these little angels' sakes shall
I now spare the town;
Your life be yours, remember, but theirs
be the deed's renown."

And theirs has been the deed's renown, for the grateful Dinkelsbühlers celebrate the occasion each summer with a history play and pageant known as the *Kinderszene*, or children's festival (see page 691).

SMOKE OVER ALABAMA

BY FREDERICK SIMPICH

AUTHOR OF "SO BIG TEXAS," "THIS GIANT THAT IS NEW YORK," "SECTARIES THROUGH LATIN AMERICA," ETC.,
ETC., IN THE NATIONAL GEOGRAPHIC MAGAZINE

With Illustrations from Photographs by Edwin L. Wisner, Staff Photographer

IMAGINE that you came to Alabama with Hernando de Soto, away back in 1540. In helmet and coat of mail, armed with crossbow or arquebus, think that you were one of his gay caballeros, living on game, or corn robbed from tribal cribs, with captive Indian women to make camp and cook for you.

In the same manner of fantasy, imagine that you galloped beside De Soto after he crossed the Coosa River to meet that giant Indian chief, Tuscaloosa, "lord of many territories and much people." Then, in youth's mad lust for excitement, you sent a cannon ball crashing through the forests to astonish the heathen warriors, and put your horse through all his fancy tricks to impress the shy maidens of this wonderful new world, where there was no law, no police, and you took what you wanted.

Then, old Tuscaloosa himself riding beside De Soto, on the first horse he had ever seen, you went to explore his capital, Mauvila, above the junction of the Alabama and Tombigbee rivers—and it was your turn to be astonished. For there was a walled city, built only of wood and mud, yet big enough to shelter 80,000 people—with portholes and towers and double palisades. Pagan chanting, drum beats, and nimble dancing girls greeted you within its great open square, until De Soto and Tuscaloosa quarreled and a nine-hour fight started, wherein several thousand Indians perished, their capital was burnt, and De Soto himself limped away with his shattered band.

Northwest he went, to visit the Chickasaws in Mississippi, and later west, to sleep forever in the Father of Waters. But you, still in the manner of fantasy, you lingered in Alabama, to see its changes rung.

About Mobile Bay and along the coastal plains then were red tribes kin to the Choctaws. Later, around where Huntsville now stands, appeared the Cherokees, from which tribe was to come famous Sequoyah, to devise an alphabet which gave his people

reading and writing, and finally to have the big California trees named sequoias in his honor.

And into north-central Alabama you also saw the Creeks, or Muskogees, come to form a great Indian confederacy, crossing rivers on log ferries pulled over with ropes of twisted grapevines. With an engineering eye for easy grades and good river crossings, they pushed their paths and trails for war, trade, or hunting all up and down Alabama until a strategic network lay over the State.

Widened later by white pioneers into "traces," or wagon roads, many of these original savage trails are still in use. Today, the railway from Montgomery to Pensacola follows closely the old Creek trail blazed for trade with the Seminoles,

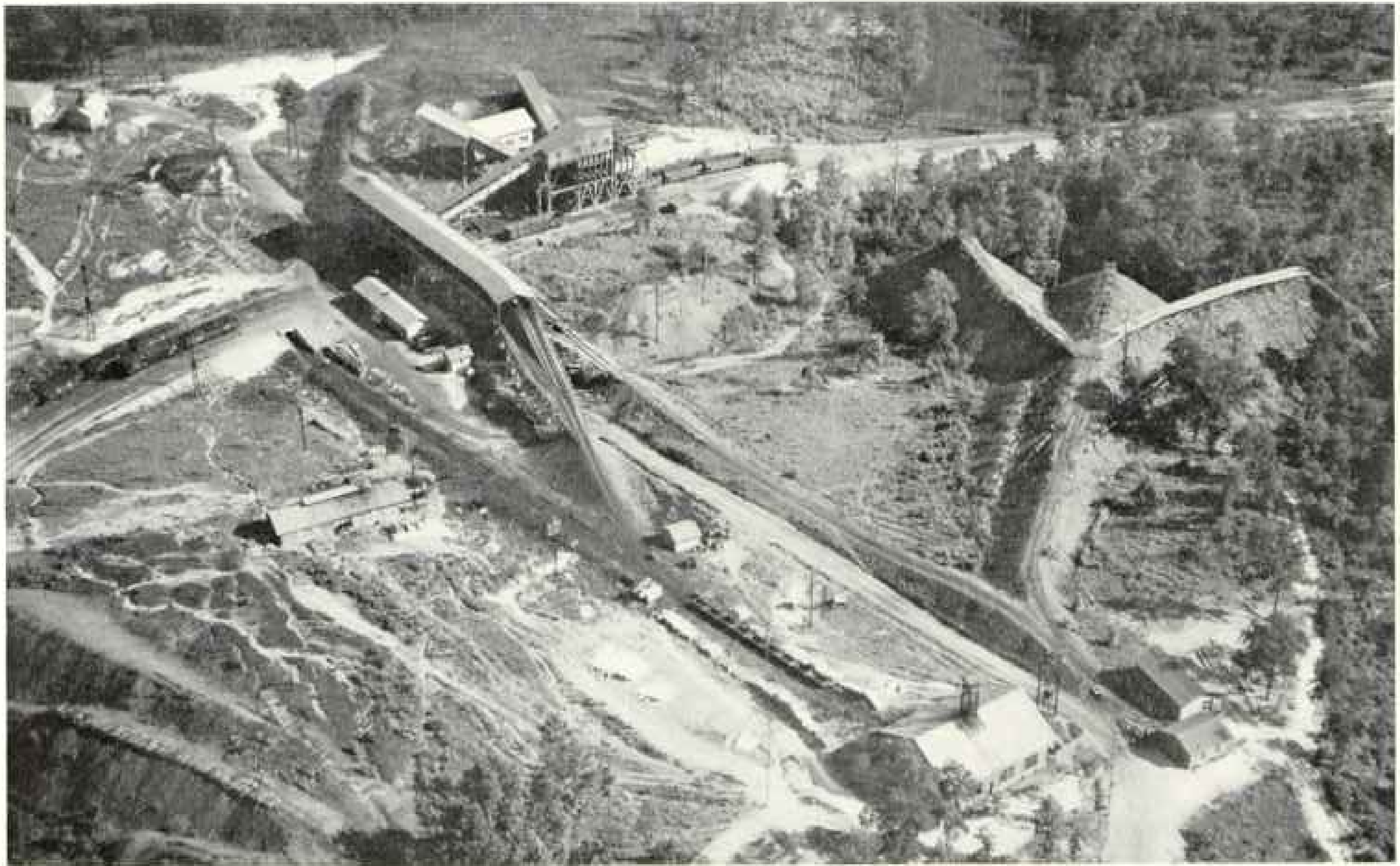
INDIANS RULED ALABAMA FOR 150 YEARS AFTER DE SOTO

As these early red Alabamians tilled the soil, made weapons, dishes, clothes, boats, and traps, built houses of a sort, traded with distant tribes, and often settled quarrels by diplomacy, you saw them well on their way to a civilization. From them you heard of De Narváez and his ill-fated expedition, wrecked on the Gulf coast years before De Soto came; of this band only Cabeza-de-Vaca survived, to wander seven years across North America to the west coast of Mexico. You may have heard, too, of Pineda; also of Tristán de Luna, who came to explore and colonize in Alabama twenty years after De Soto, only to fail so sadly. Thus, for nearly 150 years after De Soto's visit, Indians ruled Alabama.

Toward 1700 you and the Indians heard that Englishmen were multiplying along the Atlantic coast. Spaniards held Florida. But the real story of Alabama, as Christians record it, began when the French settled on Mobile Bay, about 1702. Yet for almost another century, except for occasional visits by wandering English

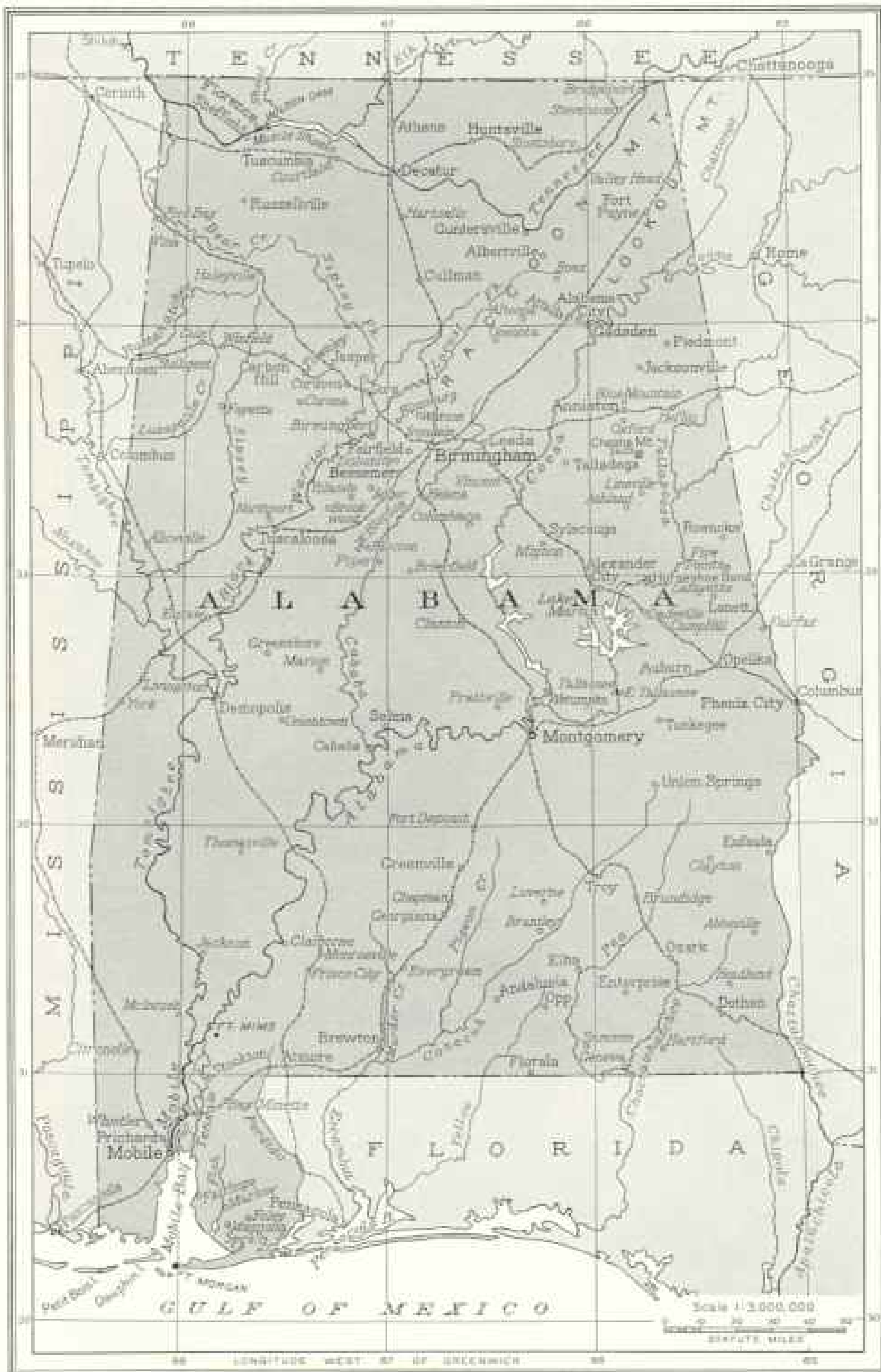


ONLY A FEW DECADES AGO COTTON FIELDS BLOSSOMED WHERE NOW ROARING BIRMINGHAM LIFTS ITS SMOKY HEAD. Two new railways, being laid, crossed at this point—and Birmingham was born. Now it is a young municipal giant, the South's leading industrial center, and enjoys water-borne trade with the Gulf of Mexico by way of the Black Warrior River.



AN AIR VIEW OF A COAL MINE NEAR BIRMINGHAM.

The great Warrior Coal Field, whose workable area covers some 2,600 square miles, lies near Birmingham. Near by, also, is the Cahaba Field. Thus abundant coal, with iron ores, and with dolomite for fluxing, makes Birmingham a natural center of the smelting trade (see text, page 754).



Drawn by James M. Darley

ALABAMA RANKS 28TH IN AREA AMONG THE STATES, 15TH IN POPULATION



THE ALABAMA STATE CAPITOL AT MONTGOMERY

Montgomery played a leading rôle in the early days of the Confederacy. Here the seceding States formed their government and here Jefferson Davis took the oath of office.

and Scottish traders from Savannah and Charleston, these French settlers at Mobile were the only permanent white residents in all Alabama. Even then, however, England claimed much of Alabama by virtue of the Carolina charters and later by the Georgia grant to Oglethorpe.

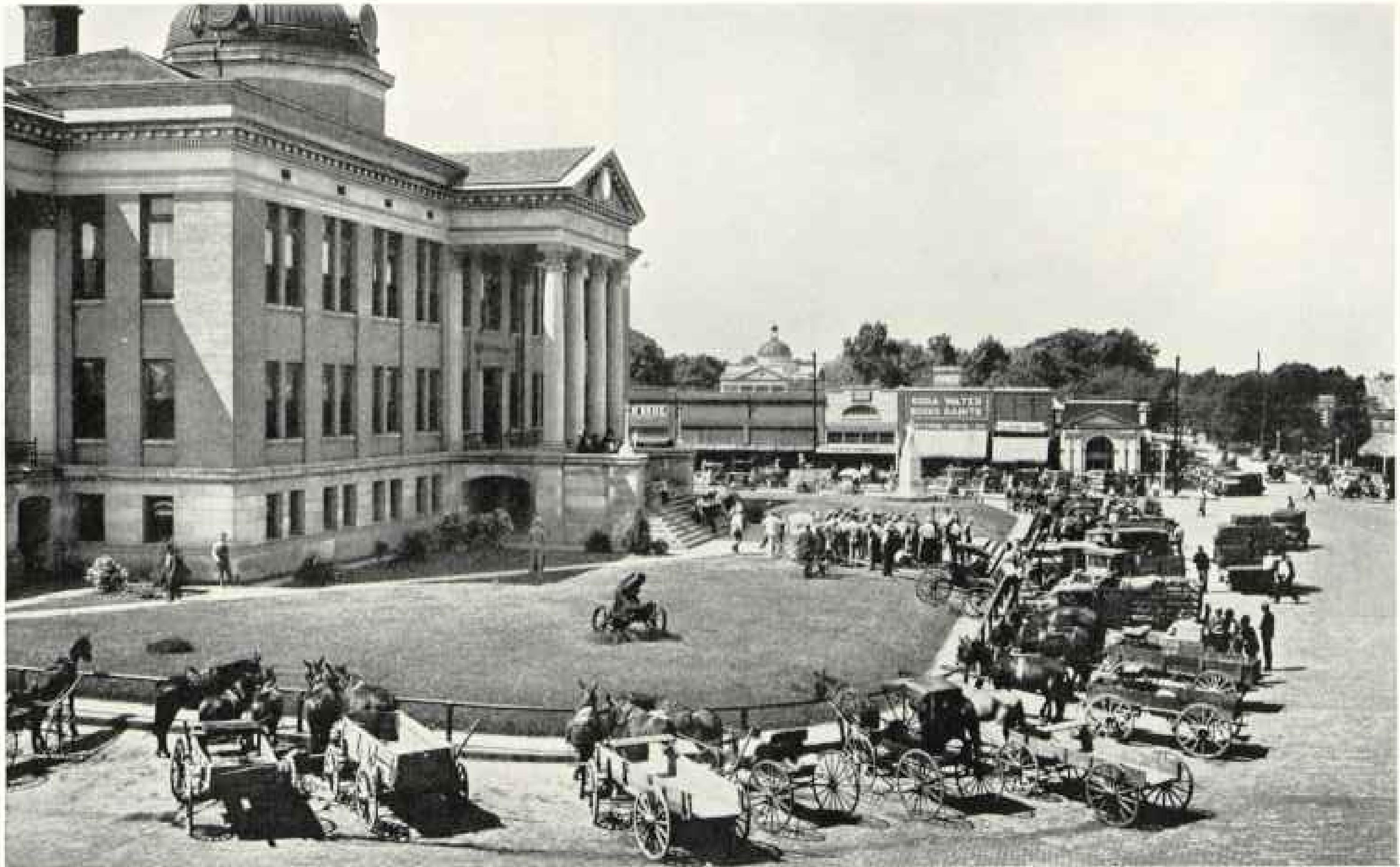
ALABAMA BECOMES A STATE

Spaniards from Florida disputed with the French; English pirates from Jamaica looted the French colony on Dauphin Island, in Mobile Bay. The American Revolution made confusion worse confused. Finally, Congress in 1812 annexed the Mobile district of West Florida to what was then the vague, vast "Mississippi Territory," and the whole of Alabama became American soil, made a State in 1819.

In the meantime, supposing yourself still a spectator, you would have seen here re-

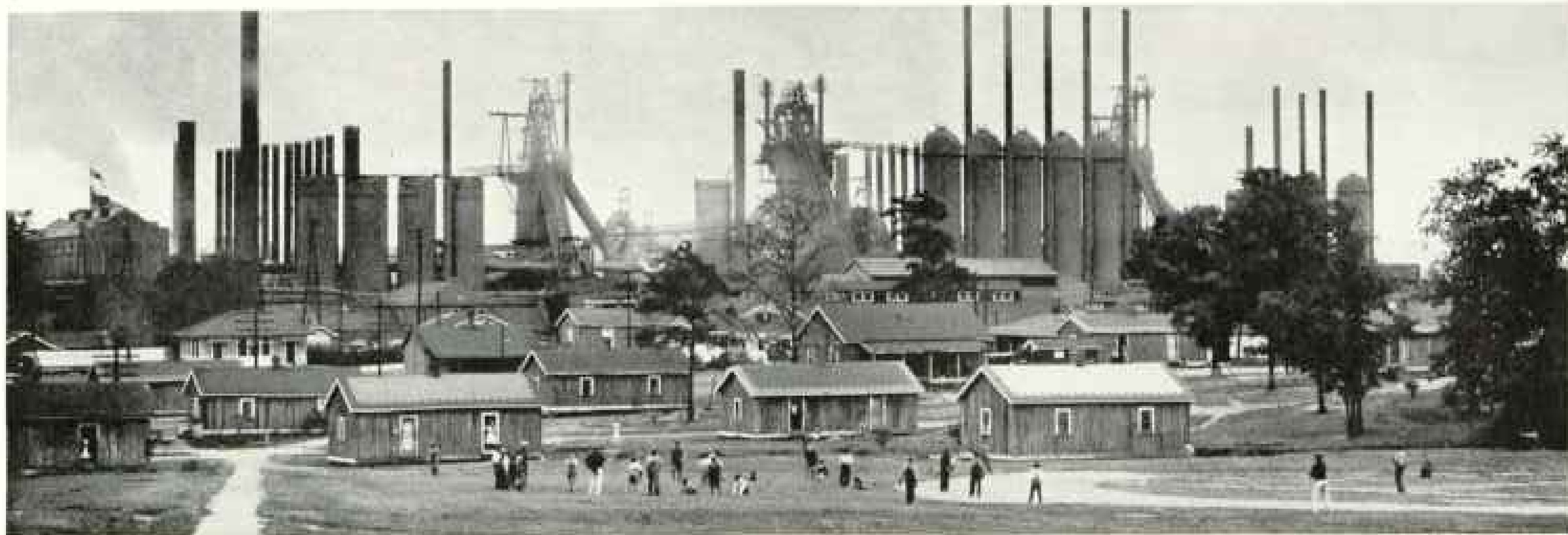
percussions of the War of 1812—when the Creeks allied with the British. Then Chief Tecumseh came to Alabama, urging the tribes here to resist white encroachment. You would have seen the appalling massacre of hundreds of white women and children who had taken refuge in Fort Mims. And that historic last stand of the half-breed Red Eagle and his Creek warriors at Horseshoe Bend, on the Tallapoosa, when Andrew Jackson crushed them.

And you would have seen this same impetuous Jackson leading his army south to smite Pakenham, the English general, who died before his redoubts in the Battle of New Orleans; and, listening, as Jackson marched back, you would have heard his army bands playing a new tune, "The Girl I Left Behind Me," the sheet music of which lively Scottish air they had



A BUSY SATURDAY AFTERNOON IN THE COURTHOUSE SQUARE AT ATHENS

The crowd on the lawn is listening to the town auctioneer trying to sell a buggy and hay rake. There is also a cow to be sold to the highest bidder. Much swapping of horses and mules likewise occurs here.



THE COTTAGES OF COLORED LABORERS NEAR A GREAT BIRMINGHAM IRON WORKS



Photograph by Overbey Studio

THE STATE DOCKS AT MOBILE, WITH AN OLD-TIME PACKET BOAT PUSHING ITS BARGES OF COTTON



STACKS OF PULPWOOD FOR PAPER-MAKING AT A MILL IN MOBILE



COTTON PICKERS AT WORK IN A FRANKLIN COUNTY FIELD



MANY MOBILE OAKS, NOW IVY-COVERED GIANTS, WERE PLANTED TWO OR MORE CENTURIES AGO BY FRENCH AND SPANISH COLONISTS.



A COTTON STEAMER AND BARGES AT SELMA, ON THE ALABAMA RIVER.

Like the trunk and limbs of a giant tree, the State's river system stretches north from Mobile Bay, affording easy water transport to a large portion of Alabama. The 3,000 bales of cotton in this cargo are bound for Mobile, and thence to export trade overseas (see, also, page 709).

taken from the Highlanders in battle, and which tune is still the official music of the Seventh United States Infantry.

THE HISTORIC RUSH OF HOME-SEEKERS BEGINS

Even while Washington, first President, struggled with a new Nation's many problems, and Paris still rocked from revolutionary disorders, you saw white pioneers from Virginia, the Carolinas, and Georgia begin to penetrate Alabama. Some were settling along the Tombigbee on land still claimed by both Spain and the United States. Some, as traders, founded crude posts that grew to towns; others, married to Indian women, took no part in the life of new white colonies. Occasionally, there was the renegade, or fugitive from Atlantic coast justice, as "Savannah Jack,"

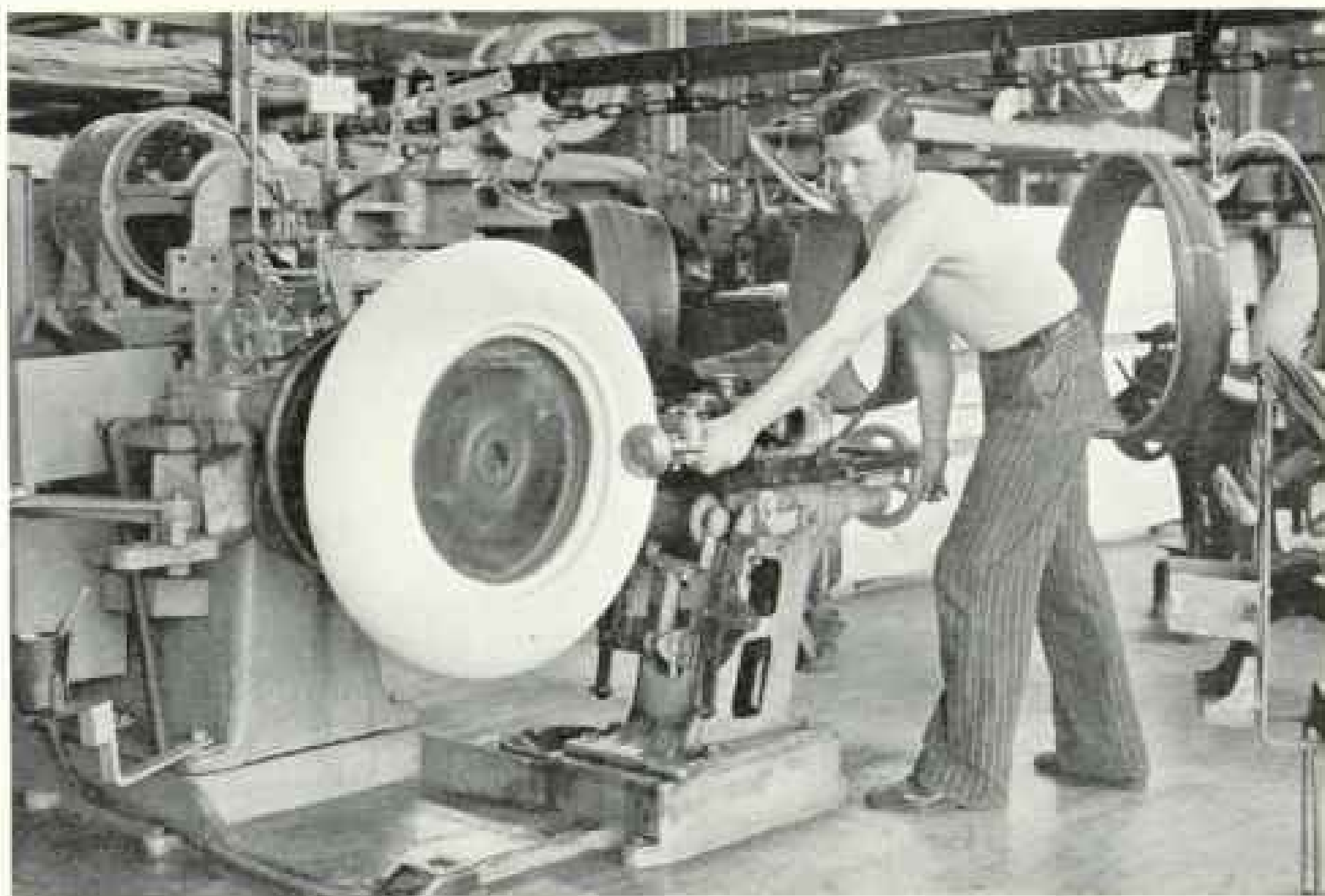
boasting he had slain so many men that he could "swim in their blood, were it collected in one pool."

But the historic rush of home-seekers, which was to put tens of thousands of whites on Alabama lands within a generation, did not begin till after 1800. When treaties with the Choctaws in 1802 and 1805 threw open rich lands for settlement, new routes of travel were opened; and the human tide moved into Alabama, along with other great migratory tides to the west. By 1808 thousands had staked out homes in the picturesque Tennessee Valley, which crosses northern Alabama.

And now you saw another marvel. Your Cherokee friends, too, copied white methods. They, too, grew cotton and owned cotton gins. They bought hundreds of slaves, much land and cattle. Becoming

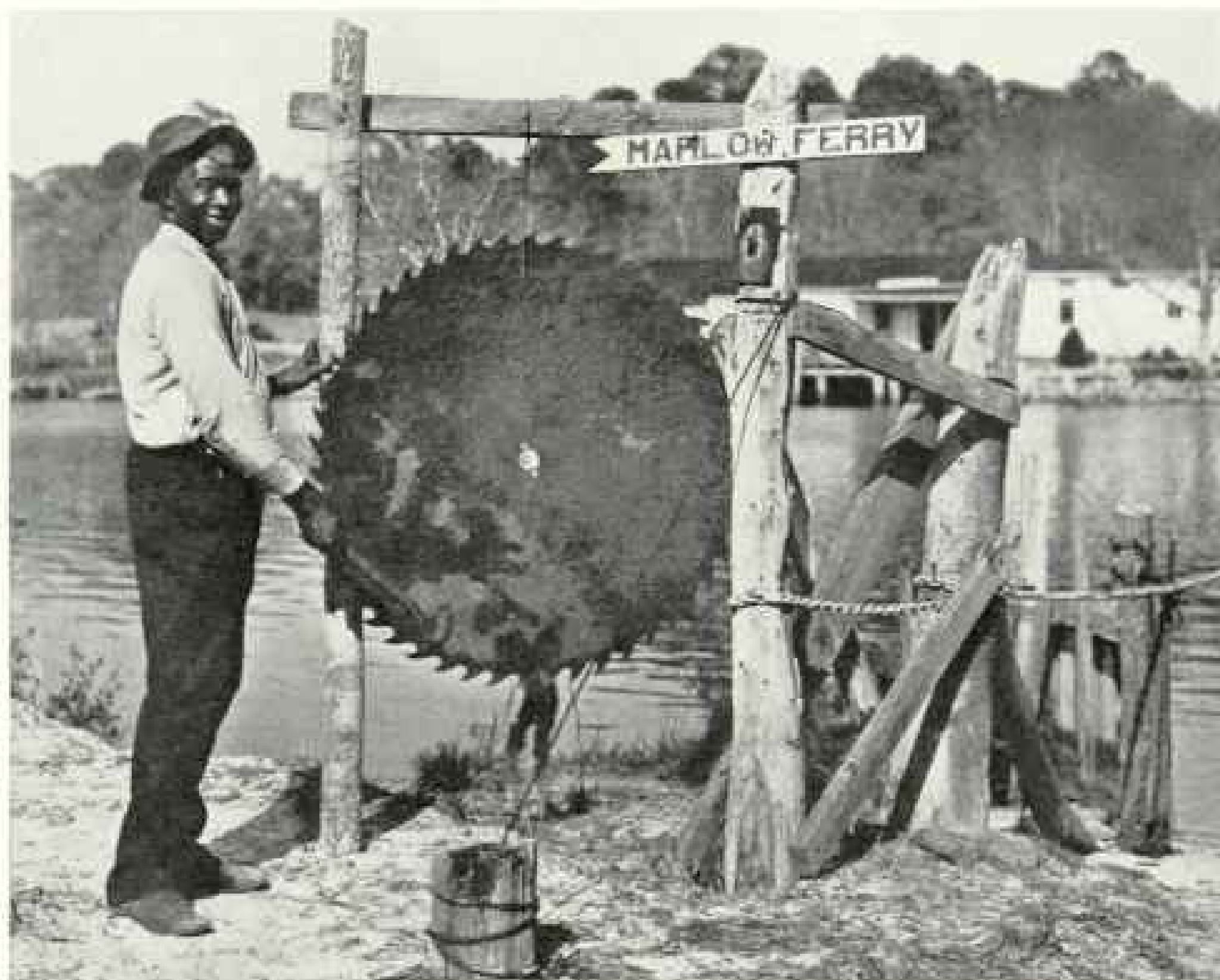


ROLLS OF KRAFT PAPER MADE FROM ALABAMA PINE AT A MOBILE MILL
 Converting wood into paper and rayon is among industry's many new tasks, as factory smoke thickens over Alabama.



ROLLING DOWN A PLY ON A BUS BALLOON TIRE AT GADSDEN

Slowly, steadily, northern industry invades the South. Climate, fuel, power, adequate labor, raw materials, and transportation are the factors. From Ohio a great tire-making company sent experts to found a branch at Gadsden (see text, page 752).



HE POUNDS A DISCARDED CIRCULAR SAW TO WARN TRAVELERS THAT THE FISH RIVER FERRYBOAT IS ABOUT TO START



CROSSING FISH RIVER BY A HAND-DRAWN FERRY AT MARLOW

The aged black propels his crude boat by hooking a notched stick over a guide cable swing across the river, and pulling it the length of the ferry. Five walks across the float takes the craft over the river.



Photograph by Clements Studio

BAPTIZING IN AN ALABAMA STREAM

After the minister has solemnly pronounced the baptismal formula, he places one hand under the shoulder of the candidate for admission to the church, immerses him, and quickly lifts him again.

good artisans, they made their own looms, farm implements, and many tools. Had they not been exiled to Oklahoma, you speculate, where might they be, by this time, in the social body of Alabama?

These rich Indian lands, given to whites, lured new settlers in an ever-rising tide. They crowded in like a great army on the march.

PIONEER IMMIGRANTS COME BY THOUSANDS

The old immigrant or "Federal Road" from Georgia west was to Alabama what the ancient Via Appia was to the country south of Rome. The trek and trudge over it was so continuous, says one early writer, that for days, journeying against the immigrant tide, he was always in sight of wagon trains, pack horses, and long files of tramping slaves. Whitney's new cotton gin helped start these men west and extended slavery. England, after her industrial revolution, was bidding for cotton, and rich, cheap cotton land was the lure. From Virginia, the Carolinas, and Georgia came planters, merchants, and artisans,

the well-to-do often in elegant carriages, broughes, or sulkies. Other thousands walked all the way.

It was like the later gold rush to California. In one of the 1819 issues of the *Augusta Chronicle* is recorded the fact that there passed through a "man, his wife, a son and his wife, with a cart but no horse. The man had a belt over his shoulders and drew the cart. The old woman was walking, carrying a rifle and driving a cow." Others had their goods "packed in a hogshead, with trunnions put in the ends and shafts attached." It is recorded that some families rolled their goods in this manner all the way from Carolina to Alabama. You can talk still to older Alabama residents who remember what their grandfathers told of this historic migration, when they came with it as young men.

"My grandfather brought his bees in hives," says a Birmingham lawyer. "If they swarmed, the whole wagon train turned out, drumming on pots and pans to make the bees 'settle' again. He brought garden seeds and young fruit trees. Even a strand of pussy willow, worn as a hatband,

he planted on the new land he chose—and it's still growing there.

"When my folks first settled, they had to ride a mule, by compass, 100 miles to the nearest blacksmith to get plow points sharpened. If their fire died out, they used to 'borrow fire.' There being no matches, a boy on a horse was sent to the nearest neighbor, to come galloping home with a burning piece of 'pine fat'."

WHEN EUROPEAN SOCIETY CAME TO THE CANEBRAKES

Unique in Alabama annals was the founding of Demopolis, on the Tombigbee. Certain distinguished Frenchmen, banished from Paris after Napoleon's sun had set, migrated here to start vineyards and olive groves. They were, says history, "men who had known Napoleon on intimate terms; who had had conspicuous part in the society, intrigues, and campaigns of the French Revolution—and voted to execute a French king—and ladies who had figured in the voluptuous drawing rooms of St. Cloud, and glittered in the smiles and favors of Josephine and Marie Antoinette."

First of all they were to bring books, guitars, parasols, dainty garments and the gay chatter of European society to the canebrakes and river forests. "A bridge now spans Frenchman's Creek," says one writer, "where the dashing Count Raoul, who covered the retreat from Elba, once ferried travelers, while his wife, former Marchioness of Sinibaldi and lady in waiting to the Queen of Italy, cooked flapjacks for them on shore!" This colony failed, but many of the French aristocrats remained, to become amalgamated with American pioneer families, and Demopolis town still flourishes, though not as a land of wine and olives.

Thus, through ante-bellum decades, you saw Alabama grow up. Politics bubbled. Towns, plantations, slaves—all multiplied. Paths and mere tracks on the ground turned to roads. Palatial steamers, with romantic names, and string bands, deck-hand quartettes, and steam calliopes to entertain the passengers, came to ply the rivers. Cotton was king; sometimes it was 30 cents a pound—and more. Real-estate companies abounded and the South saw its first land boom. Simps followed booms; but men talked always of slaves and cotton—and more cotton. Fortunes

grew. From New York to New Orleans—before 1840—the "Pony Express" was running. With 200 boy riders and 500 horses, relayed every 12 miles, the "fast mail" averaged 14 miles an hour!

Mounted on blooded saddle horses, attended by slave grooms and body servants, kid-gloved sons of the bluestockings sought culture at Tuscaloosa, where the new university was set.

A "railroad"—one of the first built in America—was the boast of Tusculumbia. Its tiny coaches ran on wooden rails, drawn by horses until its toy locomotive came in 1834. But much cotton still went by keel-boat over the winding Tennessee River up to the Ohio and down to the Mississippi, to New Orleans.

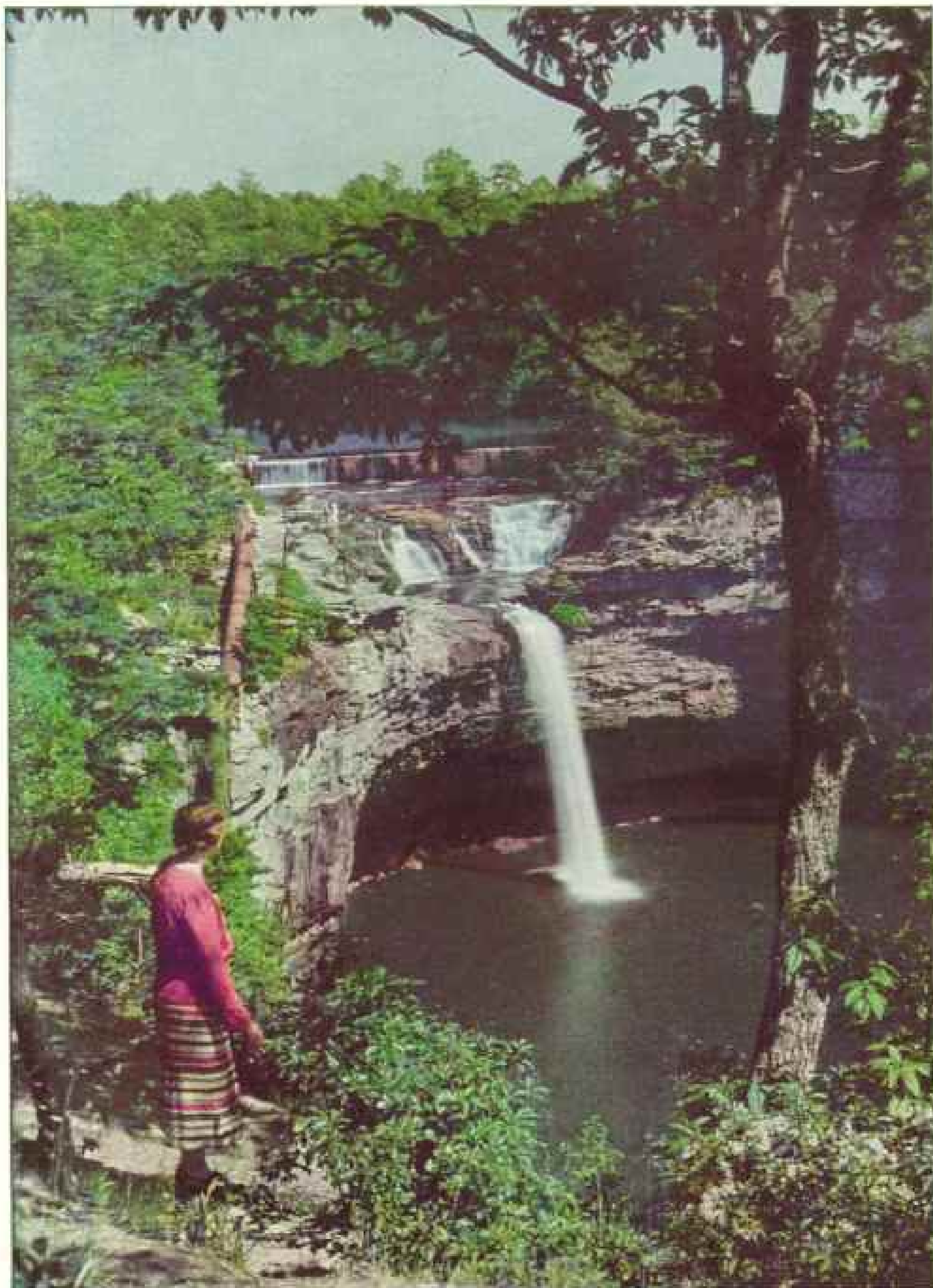
INDUSTRY CHALLENGES THE AGRARIAN TRADITION

After 1850, shops and mills increased. More men began to spin, weave, saw lumber, smelt iron ore, make shoes, plows, and furniture—everything from ax handles to steamboats. But only in a small way. Alabama was still a big buyer of northern-made things and essentially agrarian. These were "old plantation days"—that golden age of Alabama whose mere mention still arouses emotions in the born Southerner.

Then the guns of Sumter; the Confederacy. Years of war and ruin for Alabama, in which she learned one good lesson: that she could support herself, live within her own boundaries. Then that quiet Palm Sunday at Appomattox, when the great opponents, Grant and Lee, without parade, band music, swords, or cannon salutes, quietly made terms of surrender.

Peace, reconstruction. But tenant farmers now in place of slave work. Country stores and village bankers advancing food, clothes, and tools to run the tenant until harvest time—with liens on crops. Years of one-crop drudgery, debt and poverty; then the cures and compromises of time; the glimmers of scientific farming and crop rotation. Then, slowly, through the years, the growth of the coal industry; more railroads, lumber yards, canals, iron mines, steel mills, paper mills, tire factories, dairies, poultry farms. To-day smoke rises over Alabama, to challenge the ancient agrarian tradition.

Such is an index of the State's history, from De Soto to 1931.



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Finlay Photograph by Edwin L. Wheeler

DE SOTO FALLS, ON LOOKOUT MOUNTAIN IN NORTHEAST ALABAMA,
SOUTHERNMOST TIP OF THE APPALACHIAN RANGE

Summer homes are set here among rhododendrons and mountain laurel. About the rim of the steep cliffs appear the ruins of an ancient fort, with many man-made cave dwellings, their origin a mystery.



THE GARB AND MANNER OF A CENTURY AGO IN TUSCALOOSA

A scene from a pageant, staged in period costumes by students, celebrating the State University's hundredth birthday. Built prior to 1830, the residence is the home of the institution's president.



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Finlay Photographs by Edwin L. Wisland

RIVALRY IS KEEN AMONG MOBILE GARDEN LOVERS

The culture of azaleas arouses especially active competition. Many amateur gardeners have cultivated bushes of great size and age, some of which have sold at high prices.



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Finlay Photograph by Edwin L. Wislerd

ONE OF THE MANY ARTESIAN WELLS FOUND IN AND ABOUT THE CITY OF SELMA

Among Nature's numerous gifts to Alabama are these abundantly flowing wells, and many extraordinary springs. The excellent water supply of several communities comes entirely from such sources.



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Finlay Direct Color Photograph by Edwin L. Wisnerd

TEEBING OFF AT THE LUXURIOUS MOUNTAIN BROOK COUNTRY CLUB, NEAR BIRMINGHAM



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WHEN AZALEAS BLOOM, MOBILE IS IN A CRIMSON BLAZE, AS IF A GIANT'S TEN-MILE BRUSH HAD PAINTED THE WHOLE TOWN RED.
(SEE, ALSO, COLOR PLATES II AND XII)

Finlay Direct Color Photograph by Edwin L. Wisard



IN MONTGOMERY MANY ANTE-BELLUM HOMES RECALL THE GLORIES
OF AN EPOCH THAT IS GONE

These strongholds of plantation aristocracy give to the State Capital its unmistakable atmosphere of the Old South, of which not even its airports and broadcasting stations can rob it.



© National Geographic Society

Tulip Photographs by Edwin L. Woodard

A TULIP BED IN EXOTIC GARDENS OVERLOOKING BIRMINGHAM

Throughout the State, Birmingham is famed for its castled residential heights, known as Red Mountain, the superb homes which adorn it, and its extravagant landscaping and lovely floriculture.

WHERE THE NEW SOUTH CHALLENGES THE OLD



AN ART CLASS OF ALABAMA POLYTECHNIC INSTITUTE AT AUBURN
SKETCHING IN THE OPEN AIR

Langdon Hall, one of the oldest buildings on the campus, is seen in the background. During the Civil War it was used as a hospital, and now serves as the Institute's chapel.

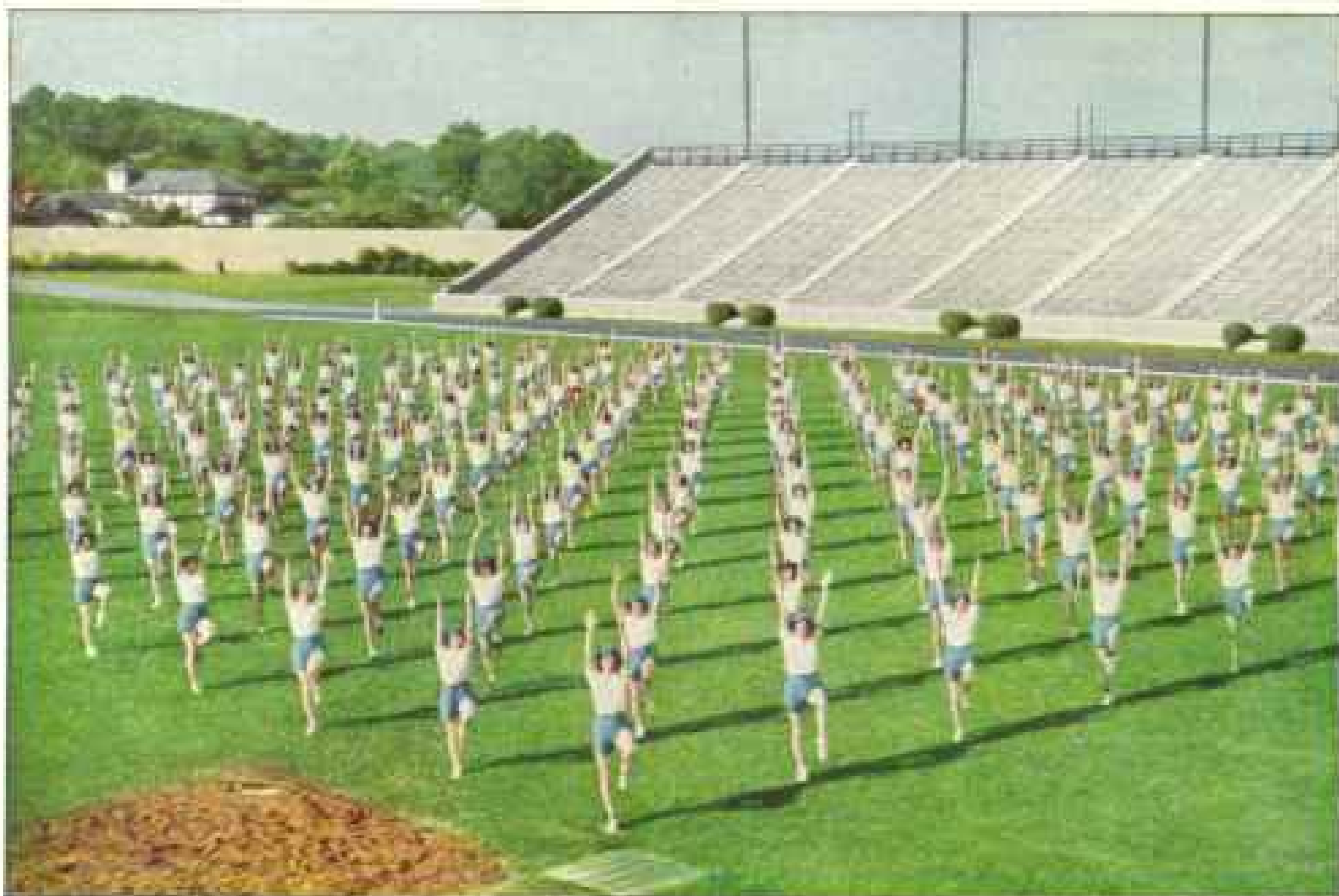


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Finley Photographs by Edwin L. Wisnerd

ONE OF THE STATE CAPITAL'S FINEST ESTATES

Although the seat of political power, Montgomery, with its press, pulpit, and schools, remains a distinct cultural center, where people long ago learned how to use leisure.



BODIES AS WELL AS MINDS ARE CAREFULLY TRAINED IN BIRMINGHAM HIGH SCHOOLS. This massed physical drill by girl students in trim track suits resembles the great open-air athletic meets seen in Prague, Berlin, and other European cultural centers.



© National Geographic Society

Friday Photographs by Edwin L. Wisford

OLD ENGLISH FOLK DANCES BY ALABAMA UNIVERSITY STUDENTS
IN THEIR CENTENNIAL PAGEANT

When this university was young, a century ago, college culture was thought the privilege of aristocracy alone. Then the elegant sons of planters came ahorse to the new school, attended by a groom and body servant. It is more democratic now (see, also, Color Plate II).

For more than a century cotton was the symbol of life. The poor renter, with one mule and one plow, like the rich planter with domain intact from slave times, depended on this one crop.

NOW FACTORY SMOKE FLOATS ACROSS THE COTTONFIELDS

But world conditions change. Some old customers overseas no longer must buy most of their cotton from us. More and more it is raised elsewhere—as in Africa, Asia. So now it grows harder for Alabama to sell cotton abroad at a fair price. But it has thought, talked, planted, picked, ginned, pressed, and sold cotton so long, and so fixed is this cotton-only habit that the State imports much butter, milk, potatoes, even hay.

Happily, escape is in sight. What with science, research, farm schools—and good example of the more alert farmers who prove Alabama can grow much besides cotton—you see dawning in the State a new, diversified agriculture.

But that is not all. From the North men have come with money and machines, starting mills, shops, smelters—many industries new to Alabama.

Its factories, scattered over the State, with workers to be fed, open a widening market for Alabama fruit, vegetable, poultry, and dairy farms. Swiftly, as the lives of States are measured, you see this clamorous, alien culture of smoke and steel being imposed on a proud, leisurely society, accustomed for generations to its vast cottonfields, plantation homes, and calm, well-ordered rural existence.

With her water power, coal, ores, lumber, raw cotton, surplus labor, and fine climate, Alabama is forced to bid her hand. And industrialism is trumps. Cotton she will grow, indefinitely. But more of other things, too—reaching finally a happier economic balance between town and country life.

AROUND THE BYWAYS OF ALABAMA

To see how one State differs from others, quit its cities, its crowded paved highways, and explore the lanes that wind to backwoods nooks and crannies.

In Birmingham a woman's club may meet in a half-million-dollar home on Red Mountain, to study the caste system of India. A few hours northeast, on lonely hill farms, are other women chewing snuff

sticks, working barefooted, splitting "cook wood," making soap, even washing old sacks to use the cloth for children's clothes.

Colleges dot the State; free county buses haul children many miles to consolidated schools, and far more teachers are graduated each year than the State can use. You need no rubber yardstick to measure education's march. It's marching faster here than in most Southern States. Yet many country children still cannot read.

Sumptuous motor cars purr in city streets. Varnished trains, glistening in the sun, roar through from New Orleans or Mobile for Chattanooga, Chicago, and New York. Lounging in observation cars, readers and bridge players do not even look out as they pass a pack of fox hounds in full cry.

Back on the winding red country roads you meet scores of people walking, some carrying bags of flour. Dilapidated farm wagons and 20-year-old top buggies have wheels so "dished" and wobbly they make a crooked track, like a snake. Saturday afternoons families drive miles to town, the women on chairs set in the back of wagon beds, and boys, riding bareback, race their mules and horses, often with only a rope halter.

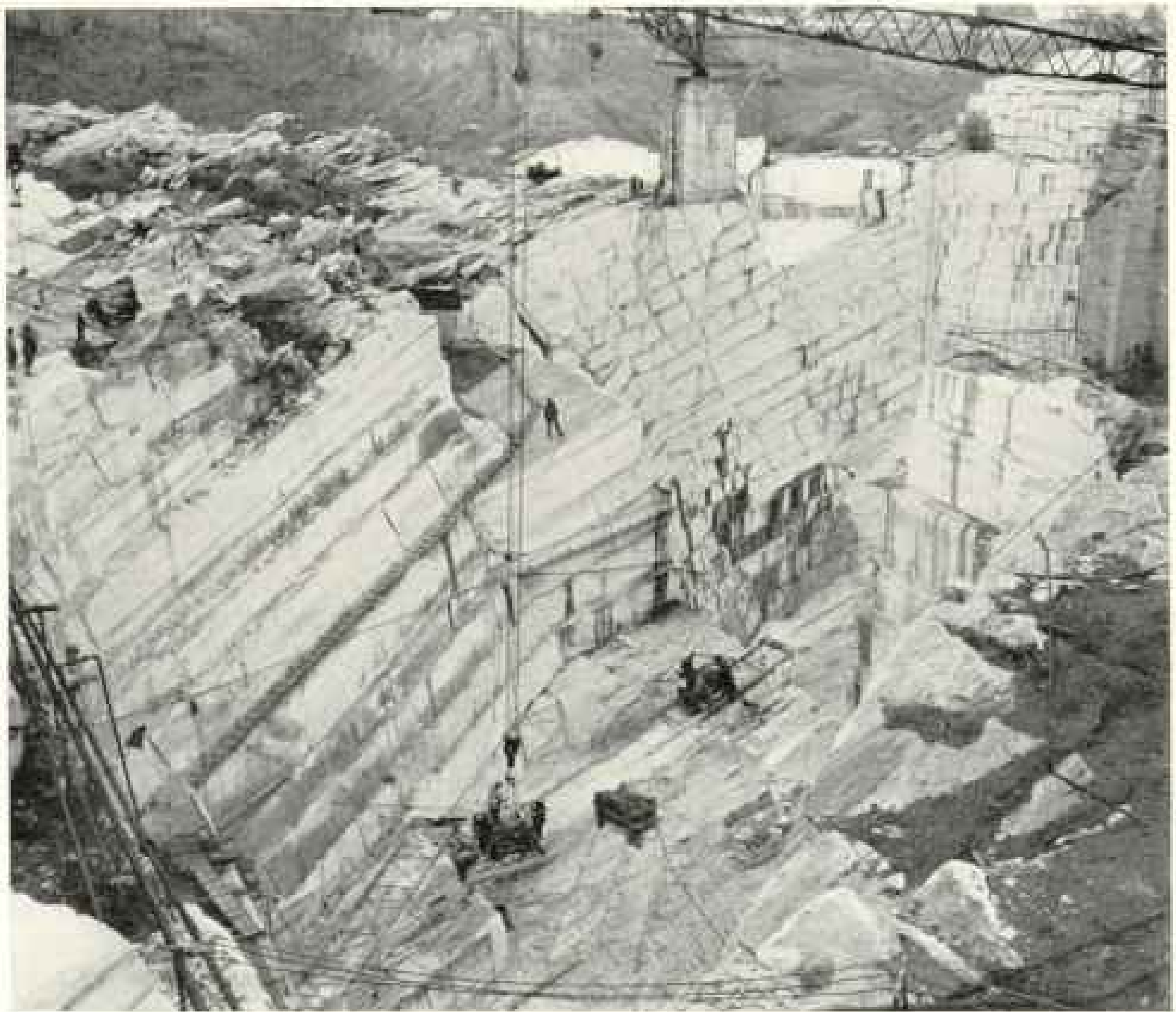
EAST OF MOBILE BAY

Coming at dusk to a Fish River ferry, in Baldwin County, you pound an old circular saw that hangs on a post to call the aged black who runs the ferry. Loudly the saw rings as you pound, and your iron din is answered from the woods by angry hoots of disturbed owls (see page 714).

On you ride—now on the high east shore of Mobile Bay—and wonder why the French didn't put their city here, on these shady, wooded bluffs. Through thick pine forest you go, where turpentine workers scar and tap the trees and hang up their tiny cups to catch the gum for making naval stores.

And on to Foley—named for a Chicago medicine man who brewed his remedies from pine-tree resin—where now many thrifty truck farmers from Northern States are settling. Vegetables go out by trainloads when the North is frost-bound. "We raise watermelons so big you can only cut 'em with a crosscut saw," boasts a Foley wit.

So on to Gulf Shores, where Mobile goes to swim, and back by Magnolia Springs,



A MARBLE QUARRY NEAR SYLACAUGA.

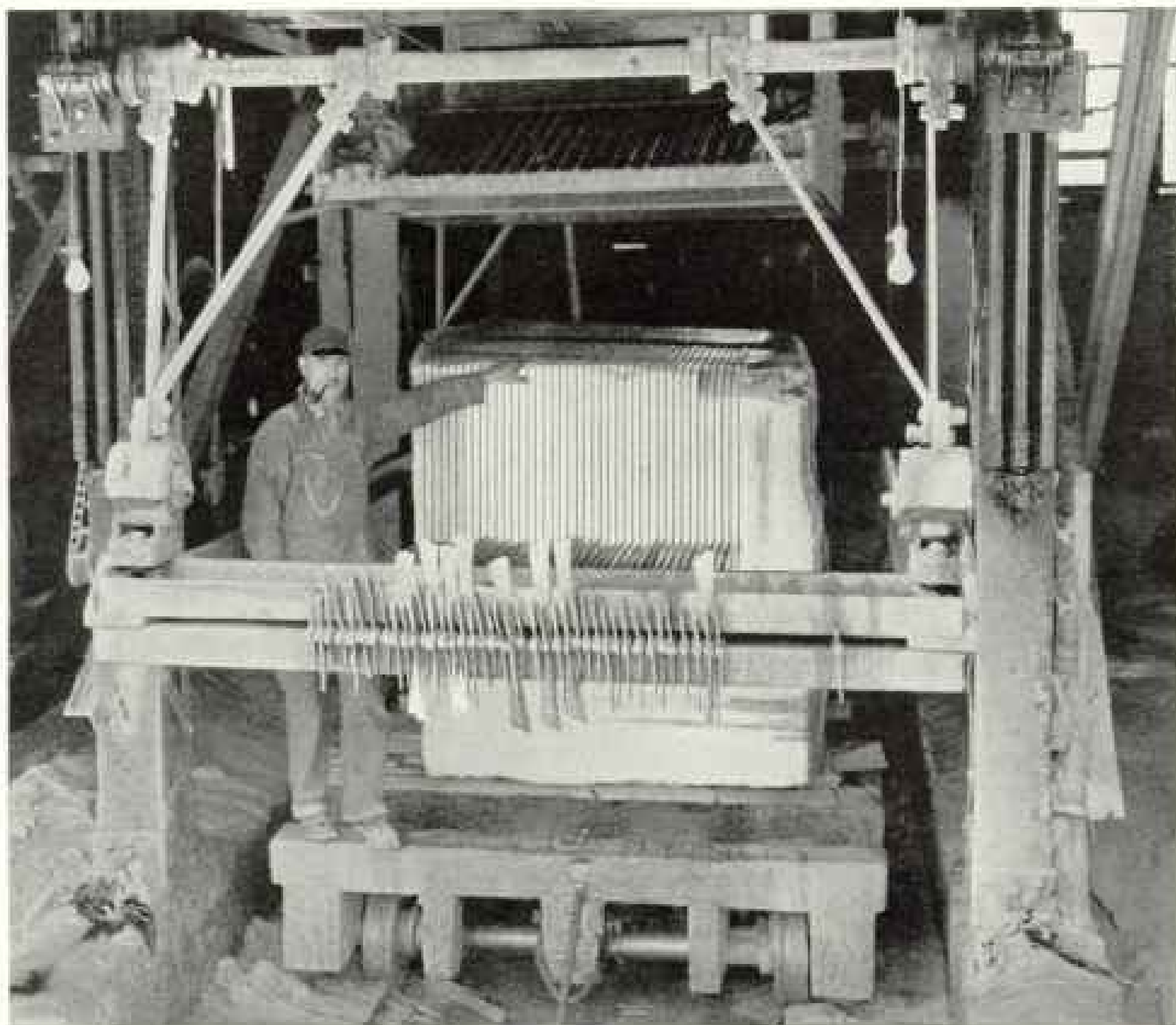
From this great pit has come building material for many handsome structures throughout the Union (see, also, illustration, opposite page).

where Cleveland and Chicago families winter and play with yachts. Planes from Pensacola roar overhead, and to rural mail boxes that dot the river banks you see a mailman making his rounds in a motor-boat!

"That patch of woods has been in my family 143 years," says "Tillie," your guide. He is descended from the last Spanish governor of Mobile. "The water in this bend is 60 feet deep. . . . When the red fish run, you'll see maybe a hundred skiffs crowded in here on a pretty Sunday. . . . I've shot lots of wild turkeys in these woods. Finally the wild cats got so thick they ate all the turkeys. Then they ate our lambs. We got hounds to kill the wild cats, but some of the ornery curs killed the lambs instead. I reckon, even to a hound, mutton is better than cat."

Near Atmore you scrape acquaintance with a delightful old doctor, polished and world-traveled, devoted to rural life. He takes you out to see his 500-dollar hounds chase a wild cat. "I import red foxes every year to make fun for me and my hounds. But, before many weeks, trappers catch most of them. . . . Yes, country life is good. . . . Since I left Johns Hopkins I've seen many changes here. In early days backwoods people paid the doctor in anything from pet owls to coon-skins, corn meal, molasses, even a swarm of bees."

When yellow fever struck it, a century ago, Fort Claiborne, on the Alabama River, boasted a population of 4,000 to 5,000. Now it has one store, which has been open for business more than 100 years. You believe this when you explore its loft and see the dusty goods of bygone



IT TAKES THREE DAYS AND NIGHTS TO SAW THIS MARBLE BLOCK INTO SLABS
Sand and water are continually played on the block from the hopper above, and as the steel blades are pulled back and forth the marble is cut.

days, even to brass-toed shoes! It still sells wild-animal traps, lanterns, 75-cent horse collars.

"What sells fastest?" you ask.

"Snuff and soft drinks." Rows of 5-cent snuff cans line its shelves. "More snuff is consumed in America now than ever before," says the storekeeper.

Turkeys are thrown from the tops of country stores at Valley Head in the annual "Turkey Trot." On one foot of each turkey is tied a tag with a number on it. The man who catches the turkey and comes back to the store with this tag gets the merchandise which it calls for free (see page 739). Greased pigs are also liberated and the man who catches a pig gets a prize. These bucolic revels draw big crowds.

That the North may decorate at yuletide, the town of Evergreen packs carloads

of mistletoe, smilax, dyed magnolia leaves, and holly for wreaths. Pine cones by the ton are flattened out and painted to look like asters, for winter bouquets.

URNS IN THE ROAD BRING SURPRISES

Under a wayside tree you see three men struggling with a colicky mule. Tossing his halter rope over a bough, two pull the mule's head high, then stick a long-necked bottle down his throat to "drench" him, while the third rubs the sick mule's back with turpentine. In another town men are clipping mules' tails and manes with an electric hair-cutter. They waggishly say they are running an "asinine beauty parlor."

Beyond McIntosh you see a sign, "Aaron Burr arrested in 1806 by Captain E. P. Gaines, U. S. A., at this place." Actually, he was arrested in 1807. Near by is the



PERSEPOLIS-LIKE PILLARS MARK THE SITE OF THE FORGOTTEN CITY OF CAHABA

In romantic ante-bellum days Cahaba, which stood a few miles southwest of Selma, was for a time the first State capital of Alabama. Now little more than ruined columns and chimneys, rising from the brush, recall its glories that were (see, also, text, page 731).



Photograph from Birmingham View Company

A MOUNTAIN OF CAST-IRON PIPE FITTINGS AT BIRMINGHAM

Pipe made here is exported by thousands of tons each month, and waterworks systems as far away as Brazil, Denmark, and Hawaii use this Alabama product.



Photograph by Frederick Simpich

HOUNDS HARASS A BOBCAT IN THE ALABAMA LOWLANDS

Because of fences and automobiles, riding to hounds is no longer so common as formerly; yet here and there certain planters still breed fine packs of expensive dogs and chases are frequent. One planter imported a shipment of foxes and turned them loose to breed on his lands, only to have many of them recaptured within a few months by local trappers. Between fox-hunting seasons, chasing the nimble bobcat affords the hounds their needed exercise.

old log church where his captors slept; and an old hunter who, his neighbors tell you, has killed 169 bears, "till now there ain't no more."

Around New Year's Day, wagons piled high with household goods dot the country roads. Sometimes women, holding babies, ride on top the load. This is moving day for tenant farmers. Then they swarm from farm to farm. Behind some wagons boys and girls drive a few head of loose animals to the family's new home.

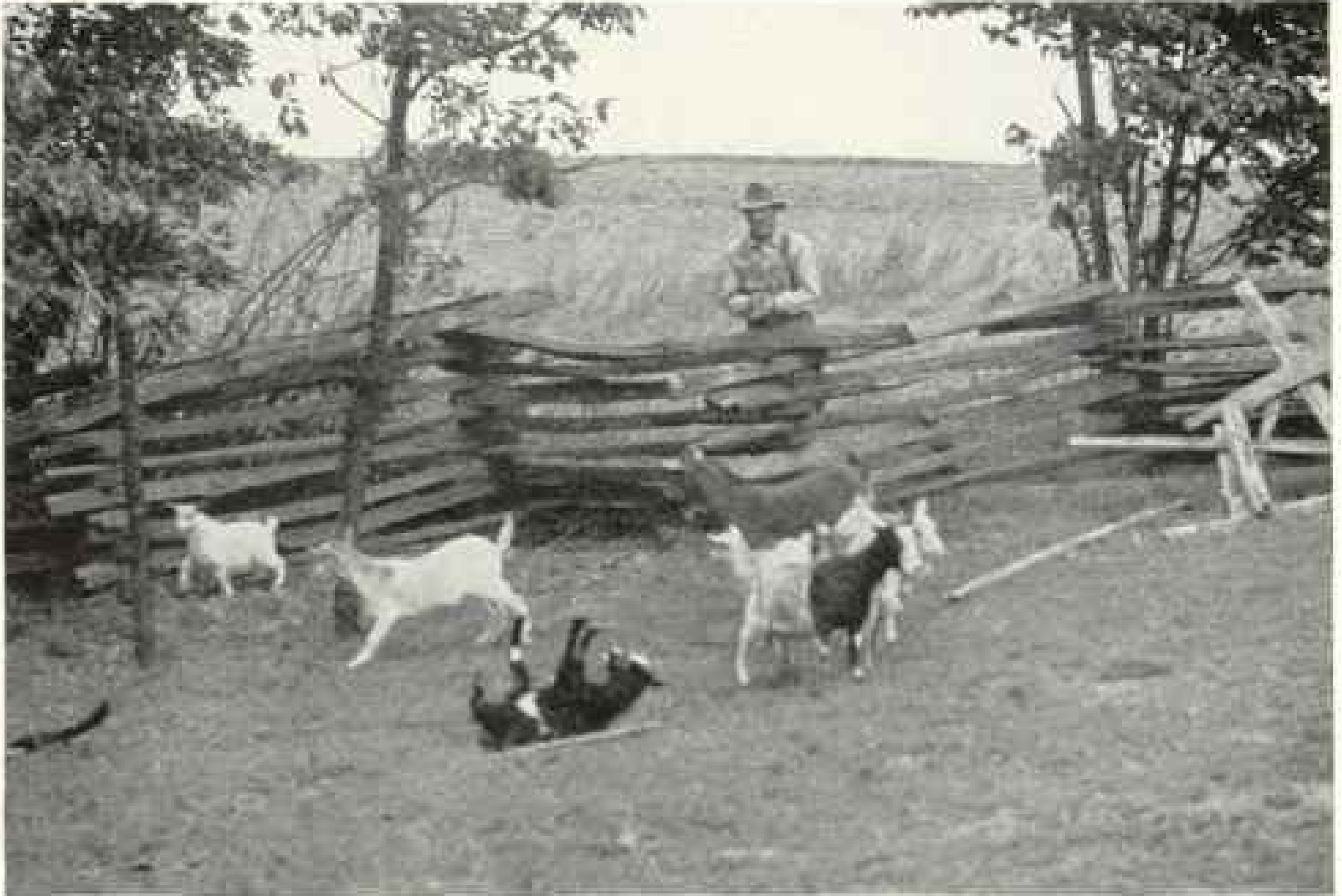
Those who own land are more static. In fact, you find many families sticking to the same neighborhood where their pioneer ancestors settled on free land. At Florence live two sets of children whose forbears were friends through four generations. In the shadow of Lookout Mountain, one descendant of pioneers may show you many faded old land-grant documents, beautifully written on sheepskin and parchment. Some were signed by Millard Fillmore, James K. Polk, and Franklin Pierce,

reciting that lands were given "for services in the Florida War" (see page 733).

WHEN DEER WERE MORE PLENTIFUL THAN PIGS

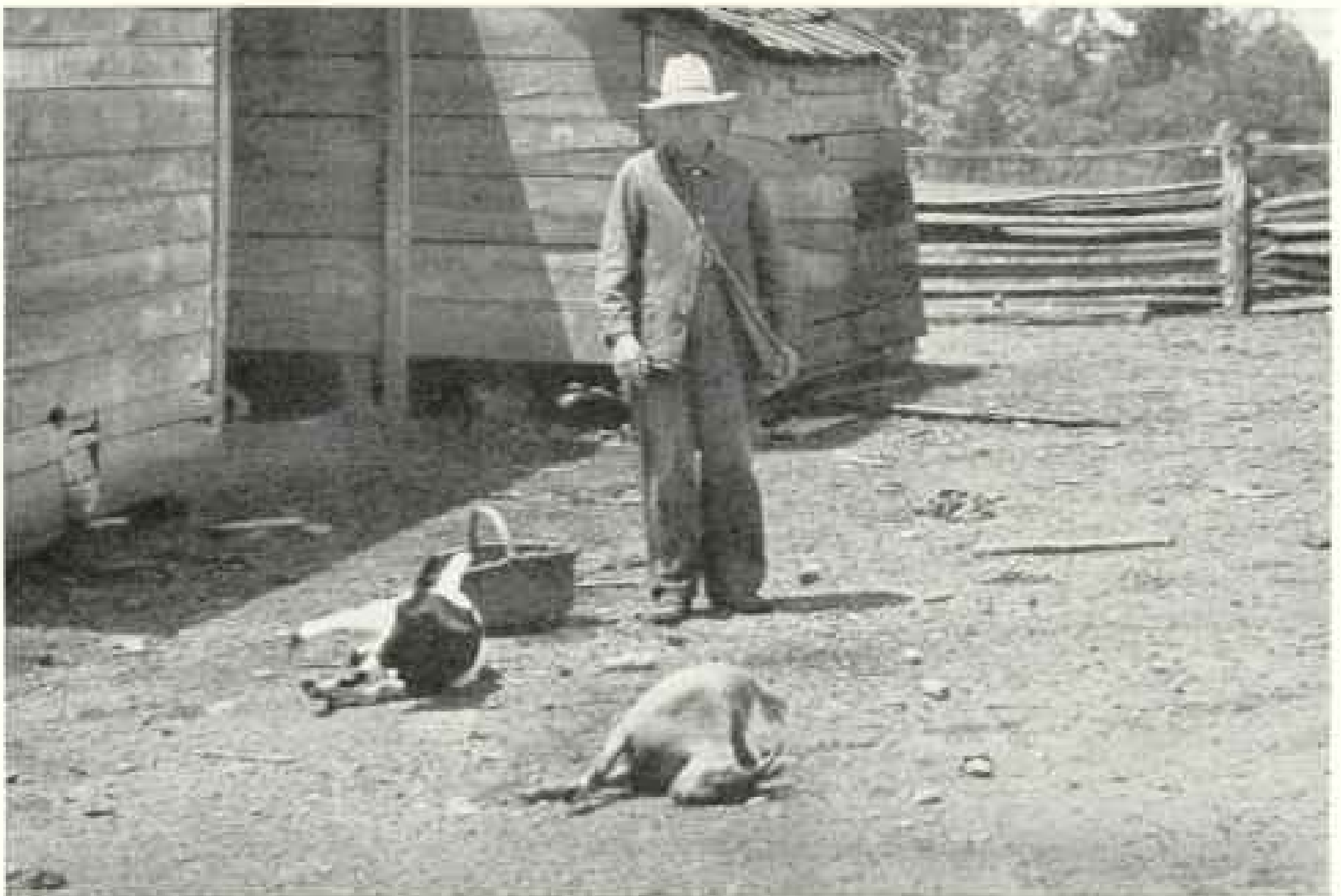
"In early days," said one farmer, "deer were more plentiful than pigs. We used to trade venison for sow bosom, pound for pound. One swindler traded me *goat hams* as venison. It took me thirty years to get even with him."

Riding through Athens on Saturday afternoon, you find the public square crowded with farm wagons, and with men buying and swapping mules and horses. So many loads of wood stand at the old-fashioned hitchrack that automobiles are crowded out. Electric bells on red and green stop-and-go signs rattle in futility at plodding mule teams moving barely four miles an hour. On the front of a corner store a giant signboard reads, "Great is the Power of Cash." "I've been a preacher and a lawyer," says your vis-à-vis at



THE COLLAPSIBLE GOAT IS A FARM PHENOMENON IN NORTHERN ALABAMA

The pathology of this nervous disorder is well known to experts in animal husbandry at Alabama farm schools. As the man by the fence jumped from hiding, the black goat fell stiff and helpless (see, also, illustration below).



TWO "NERVOUS GOATS" WHICH COLLAPSED WHEN SUDDENLY FRIGHTENED

The photographer waited near the goats, camera ready. Then the man in the white hat, by prearrangement, sprang suddenly from behind the shed, clapped his hands loudly, and the goats dropped (see text, page 733).



AN ITINERANT GROCER NEAR DOTHAN CALLS FROM FARM TO FARM WITH HIS STORE ON WHEELS

table in a country hotel. "And now I write for the *Birmingham Age-Herald*. So I can marry you, divorce you—and then keep it out of the papers."

Shut your eyes after six weeks of motoring through Alabama byways, and two pictures stick in memory. The first, of course, is that of one man, with one mule, slowly plowing. The other is of a lone stone chimney rising bleakly far out in the fields. Literally hundreds of these dot the landscape across the State. Like monuments to the pioneers, they show where once a cabin stood. At old Cahaba, near Selma, is a forest of such chimneys, rising among artesian wells. They are tombstones to one of Alabama's former capitals (see page 728).

Beside tumbling streams, old grist mills are rumbling. "Water-ground" meal, the people say, is better than corn ground by steam or electricity. At Tusculumbia, where Helen Keller was born, I saw a miller taking his ancient toll of one-eighth from all corn brought in by farmers to be ground on shares.

Sassafras tea is drunk in the spring to "thin the blood." Sometimes neighborhood families kill a beef, each in turn, and divide the meat. In the back yards of endless unpainted farmhouses, near the omnipresent woodpile, you see a big black kettle in which water is boiled for washing and fat is "tried out" at hog-killing time. More rarely now, you find an old-time ash hopper, where lye is made from



THE KING AND QUEEN OF THE COTTON BALL AT BIRMINGHAM

Pageants, fiestas, and mass spectacles are popular with the people of Alabama. Besides Mardi Gras at Mobile and the cotton ball at Birmingham, various folk festivals are held each year in other cities.

wood ashes and then used for making soap and hominy (see page 736). On a smoke-house door "varmint" skins are tacked to dry, and a freckled boy wears a squirrel tail in his hat.

WILD LIFE IS STILL ABUNDANT IN ALABAMA

Like an old Bible picture in the parable of the sower, you see a tall man marching across his field, carrying a bag of seed, swinging his long arms in rhythm with each step, sowing oats broadcast. A nine-year-old boy drives a big mule team to a harrow, doing a man's work. A storm blows up, and you see him and other work-

ers unlatch their teams hurriedly, mount, and dash for shelter, galloping bareback, humped over like Indians.

Birds do not sing man's tunes. Yet at midnight, on the east shore of Mobile Bay, a mocking bird caroled *figaro! figaro! figaro!* so plainly that, half asleep, I fancied he was a mechanical bird, leaping up from a music box to play his Italian tune. All the State echoes with feathered life; besides its natives, endless flocks of foreign birds migrate to and from its shores, fields, and forests. More than 200 species occur there; so many, in fact, that the U. S. Biological Survey chose Alabama as a special field for bird study.

UNCLE ISRAEL HAS STAYED ON ONE PLANTATION 95 YEARS

In the cold mists of early dawn, along the thickly wooded banks of the winding Alabama River, I explored country rich in game, guided by Uncle Israel, a black man born in slavery 95 years ago on this same plantation, beyond which in his whole long life he has never ventured.

Far through the forest depths carried the loud, hoarse hoot of the great horned owl. "Now de wild gobbler goin' to answer," whispered Uncle Israel. And, sure enough, there was hurled back to the hooting owls the noisy challenge of what sounded like a whole treeful of turkey gobblers. In a minute or two the forest fairly rang with this angry dialogue.

"Will the owls go after them—try to kill the gobblers?" I asked.

"No, dey takes it all in fussin'," said Uncle Israel. "Dey fusses like dat ebry maw-nin'."

It grew lighter now; and, with Indian woodcraft genius, Uncle Israel read every sign of wild life, no matter how faint. With one glance at a deer or bobcat track, he would tell you how long since the animal had passed that way. Crouching motionless behind a bush, he imitated the cry of a wild turkey hen so cleverly that a wary gobbler approached to within a few feet of us, strutting proudly, his great tail fanned out and his bronze wings scraping in the dead leaves on the ground, only to wheel and crash into the woods with strides two yards long when he had finally discovered Uncle Israel and me behind the bushes.

"Bobcats is smart, too," said Israel. "Dey gits wild gobblers jess like we do. Dey make a sound like de hen, and stay hid, and when de gobbler comes, dey jump on him."

Packs of hounds are plentiful in Alabama. Much of the State is still thinly settled and rich in wild life. Fox hunting—even if the "riders" do go by motor, merely to sit on a hill and hear the running hounds howl—is still a popular sport. And the State revels in animal stories.

NERVOUS GOATS FALL WHEN FRIGHTENED

Ten years ago, over in Berlin, I met an Alabama planter. Singing the marvels of his home State, he told us an astounding tale of certain goats near Florence, Alabama, which, when suddenly frightened, would fall rigid and helpless.



Photograph courtesy of John N. Winston

AN ORIGINAL LAND GRANT SIGNED BY PRESIDENT PIERCE

This deed conveyed property in Valley Head, Alabama, to Col. William Overton Winston, great-great-grandfather of the little girl shown here. The land designated in the document is still owned by descendants of those to whom it was originally granted (see text, page 729).

"These odd goats are so nervous," he added, "that they can't even climb to high places, or graze about steep cliffs, like normal goats; if they try it, they get dizzy and fall. If you sneak up to a flock and jump suddenly at them, throw your hat or fire a gun, often the whole herd will collapse and lie helpless on the ground."

Jeers of derision greeted this recital, and the planter, then and there nicknamed "Baron Munchausen von Florence, Alabama," protested in vain that these nervous goats were well known in the animal husbandry of his State. So it happened that on this study of Alabama I sought out



THE SIDNEY LANIER HIGH SCHOOL, AT MONTGOMERY

Motoring through Alabama, the visitor is struck by the number and modern type of public-school buildings. By free country bus (see Color Plate XII) children often ride many miles to the consolidated schools.

the "Baron" and that hysterical herd. And there they were—not only on farms about Florence, but in other sections of northern Alabama.

This phenomenon is even more astonishing than he had said. Slip stealthily up to where these goats are feeding or resting, keeping behind brush or any convenient fence or barn; jump suddenly out, and the timid animals *do* actually sink to the ground, stiff and trembling (see page 730). Though they soon revive, their legs are for a few seconds so stiff that they can hardly walk. The malady has been diagnosed by State veterinarians as a form of epilepsy.

THE SPEECH OF CHAUCER AND SPENSER

Pure old-style English is heard in the Appalachian chain, whose south end breaks off in Alabama.

"Thanks, I've been well holped," said a girl when offered more pie.

"Can you finish that statement by noon?" I heard a man ask his clerk. "I might could," was the answer. You hear a keg called a "kag"; of a teacher who "whupped" a child because he was "fling-

ing" rocks. And your country host "allowed you all would be late," meaning he assumed you would be late. A light lunch is a "snack," a woodpecker is often called a "peckerwood." A new fence post, set out of line, is "catawampus" or "wapper-jawed"; boys are told to "carry the mules to water."

You hear old names for furniture, too, as "love chair," "tilt-table," and "whatnot."

Old English ballads survive. Northeast Alabama, like parts of South Carolina, is still a rich repository for early folk songs and half-forgotten tunes. Old-time fiddlers are coaxed in from the hills, now and then, to play over the local radio circuits, and to drone their mournful ditties. You may hear

"Soldier, soldier, won't you marry me,
With your musket, fife, and drum?
Oh, how could I marry such a pretty girl as you
When I've got a wife at home!"

Or even a ballad with a moral to it, as

"Young ladies, all attention give,
You that in wicked pleasures live
One of your sex the other day
Was called by death's cold hand away."



ONE OF MANY OAK-SHADED ANTE-BELLUM HOMES IN MOBILE.



HOLLOW, STEAM-HEATED, ALUMINUM FEET, USED FOR IRONING AND DRYING SOCKS. The newly knitted socks and anklets are washed and then stretched over these models. A hosiery mill in Anniston (see, also, Color Plate X).



ONE OF THE FEW SURVIVING ASH HOPPERS IN THE SOUTH

Into this crude device, on a farm near Florence, wood ashes from stoves and fireplaces are stored; then rain water is poured in to make lye, and the lye is used in making soap and hominy.



Photograph courtesy Alabama Polytechnic Institute

"DON'T JERK—TURN IT STEADY!"

In pioneer days, grinding the family axes, knives, scythes, and sickles was a never-ending task. This old couple, near Courtland, Alabama, performs a homely task in the old way.



THE LAST SURVIVOR OF THE LAST CARGO OF AFRICAN SLAVES

Uncle Cudjo was brought from Dahomey to Mobile Bay more than 70 years ago (see text, page 740). The vessel which brought him was the last "slaver" to land in the South.



HILL CHILDREN OF SAND MOUNTAIN, NEAR GADSDEN

In recent years the State has made extraordinary progress in the extension and improvement of its rural schools, county farm and domestic science instruction, and child-welfare work.



THE "GOURD MARTIN TREE" IS OFTEN SEEN IN ALABAMA.

Holes are cut in the gourds, seeds removed, and when hard and dry they are hung on trees or cross-arm poles as homes for the birds, which are useful in driving away hawks that threaten the chickens.

In old-fashioned hymns, too, Alabama still expresses much of its religion. Even at "speakings" by candidates for office, the "rally" is sometimes opened with emotional hymns, such as "When the Roll is Called Up Yonder."

SINGERS OF THE SACRED HARP

What is perhaps the world's largest singing society exists here. Known as the "United Sacred Harp Musical Association," its members, who number more than 25,000, are styled "Singers of the Sacred Harp." Formed in Georgia in 1844, it writes its music with "shaped notes"—notes that are round, square, triangular,

and diamond-shaped. In the preface of its hymn book you read that the aim of this volume is to get as far as possible from "secular, operatic, rag-time, and jig melodies. . . . In these compositions there are but few of the twisted rills and frills of the unnatural suaking of the voice . . . which have in the last decade so demoralized and disturbed the church music. . . ."

"On Jordan's Stormy Banks I Stand," "The Rock That is Higher Than I," "Watchman, Tell Us of the Night," "There is Rest for the Weary," and "The Old Ship of Zion" are prime favorites at the all-day singings.

Vast throngs attend the public song festivals, which may last two or three days. Hence the occasional description, "All-Day Singers." The State convention meets at Birmingham each August. This organization has spread to

Texas and is very strong there.

Prof. Carl L. Carner, late of the faculty of the University of Alabama, writes in the *Yale Review*: "It is not an unusual occurrence at the University of Alabama for an aspirant to membership in the Glee Club to announce that he can sing only by shaped notes. . . ."

"Recently Americans have flocked to theaters and concert halls to hear folk music sung by Russian choruses and by negro singers of spirituals, work songs, and blues. But here is a distinctly national music by whites of which little is known. . . . When it is sung by a multitude the result is indescribable."

On our maps, only red marks keep States apart. Rub out these boundary lines, and it would seem that we should all be alike. But this is not so. Parts of Alabama are as far even from Birmingham as the Congo is from Chicago—and strangely like the Congo. And the black "conjure man," with his trick-bag of human hair, asafetida, coins, and other charms, is as far from a Tuskegee student as a Sioux medicine man is from a Gorgas or a Hippocrates.

STRANGE SIGNS AND SUPERSTITIONS

For years, Peter A. Brannon, Curator of the Alabama Department of Archives and History, has delved into folklore, signs, and superstitions. His study of cases shows that, while conjuring is less common than formerly, a conjurer is still found in most black communities, and is held in awe or reverence. Though usually a man of very ordinary mental ability, he often lives by his black art. He not only is paid to cure diseases, but is sometimes sought by maids and widows who wish to charm a favorite male. Others hire the conjure man to bring bad luck on an enemy. In Montgomery, a bill collector tried in vain to secure from a woman creditor a payment of \$10 which she owed. Knowing the power of superstition, the collector made a mysterious cross-mark on the sidewalk before the woman's house, spat on it, and started away. She ran after him, to pay the \$10, if he would "spoil out the conjure"—which he did, rubbing out the imaginary cross with his shoe-toe.



Photograph from Valley Head Drug Company

A TURKEY TROT AT VALLEY HEAD, ALABAMA

On autumn Saturday afternoons merchants here throw turkeys from the roofs of stores and liberate greased pigs to be chased and caught by men and boys, who thus win prizes. This draws customers.

Extreme fear of ghosts prevails among blacks and is shared by some whites. Besides figures in sheets, walking skeletons, and voices in the wind, ghosts often take the form of wild animals. Dread of graveyards at night is common and it is no disgrace to feel creepy and to hurry a bit in passing a "haunted house."

If a man would raise a good crop, have his cattle reproduce, or even have his wife bear a child, he must throw butterbean hulls into the road or path that leads past his house.

Owls, black cats, crowing hens, spilt salt, broken mirrors, putting a new plank in an old porch, sweeping under a sick

man's bed, manicuring the nails or sweeping after dark—all these have power for evil. So has the rabbit. In Russell County, if a rabbit crosses your path, you must stop, take off your hat and put it on backwards, or run your chances with bad luck. In Macon County it is customary to take off the hat and repeat the words, "Good morning, Mr. Rabbit."

It is bad luck to bring ivy into a house or set three lamps in a row. You can cure a sore throat by "tying up the palate," that is, knotting a string about a bunch of hair on top of the head. This "holds the palate off the tongue" and lets the throat get well. When bad luck looms, because an owl keeps crying, stick a shovel or poker in the fire. As it gets red hot, you break the owl spell.

Water from a hole in an old stump will cure warts. So will a string—with a knot for each wart—if you hang it under the eaves where water drips on it.

If your dog is prone to follow strangers, clip some hair from his tail and bury it under the door step. That cures him.

AGED BLACK REMEMBERS TRIBAL LIFE IN AFRICA

Do not be astonished if, in some Alabama African burying grounds, you see graves decorated with lamps, talcum powder cans, pickle bottles, tobacco tins, cold-cream jars, cuspidors, candlesticks, salt and pepper shakers, syrup pitchers, ice-cream saucers, vinegar cruets, electric-light bulbs, and whiskey bottles. In a Lee County negro cemetery, 23 lamps were seen. Many still held some of the same oil which gave light in the death chamber.

Mobile knows well the strange tale of Uncle Cudjo. He lives alone, in a cabin on its outskirts. Writers seek him, and one artist came from New York to make his picture. For he is the last survivor of the last cargo of slaves captured in Africa and sold here.

In the same guttural speech his Dahomey tribe used when he was a boy running naked in the jungles, he counted up to ten for me, and gave me the names of objects about his cabin as I pointed them out.

In broken English he told me with dramatic gestures how enemies of his tribe had captured him at 19 years of age, when he had just had his teeth filed sharp, and

sold him, with many other men and women of Dahomey, to an illicit white slave trader.

Irons on his wrists and lashed to a long rope in single file, he told how, with other captives, he was marched for days along jungle paths, till he came to the sea, which he had never seen.

Then he held a stick up straight, like a mast, and waved it slowly, to show how the slave ship, lying near shore, rolled in the swells.

Slave trade was outlawed at the time, and once on the Atlantic a cruiser chased the "blackbirder." Creeping into Mobile Bay one night and slipping up a bayou, the slaves were landed.

For years the only friendly familiar thing Cudjo saw remindful of his boyhood home was a herd of elephants walking cross-country with an old-time circus. Working in a near-by field with other Dahomey tribesmen, they all yelled with glee and wanted to run after the animals, when they heard the elephants trumpeting. For days afterward, he said, the Dahomey people were greatly excited. They thought the elephants had walked from some land near by where friendly tribes might be!

Cudjo is now in his nineties. All the other Dahomey folk caught and enslaved with him are dead. "I got nobody talk with," he says. "I forget Dahomey talk."

INDIANS SCATTERED THEIR PLACE NAMES OVER THE STATE

Finding Indians dwelling along the many, many creeks in Alabama, pioneers named these redmen "Creeks." And they adapted the Indian names for scores of places. Thus Wetumpka, where the Alabama tumbles over the rocks, is from two Indian words meaning "water" and "makes noise."

There is Chunneruggee Ridge, a famous camp-meeting ground near Union Springs. Augusta Evans Wilson, the Mobile novelist, whose "St. Elmo" and other books went into many foreign tongues, used an old house here, in "At the Mercy of Tiberius," as the site of the lightning stroke that etched a hero's face on a pane of glass as he looked out on a storm. To this spot, collectors come from all over the civilized world for the astonishing fossils of insects, fish, and snails found here by the thousands.

WHERE THE NEW SOUTH CHALLENGES THE OLD



© National Geographic Society

Finlay Photograph by Edwin L. Wisner

RED SNAPPERS CAUGHT IN THE GULF OF MEXICO EIGHT MILES FROM MOBILE.

Many fishing boats from our Gulf ports go as far as the coast of Yucatan for snappers. In addition to its importance as a market source of fish, shrimp, and oysters, Mobile Bay is frequented by many devotees of hook and line. Each August Alabamians gather here for a big-fish contest known locally as the "Deep Sea Rodeo."



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 PRODUCTS OF AN ANNISTON TEXTILE MILL.



Finlay Direct Color Photographs by Edwin L. Wisland
 FEATHER-CRAFT IS A DEVELOPING HOME INDUSTRY



© National Geographic Society
EVEN THE HUMBLE CORN SHUCK WINS A PLACE IN TRADE

Torn into roughly uniform strips, the tough, fibrous shuck is woven into door mats and rugs, into horse and mule collars. Examining the products of a country worker near Auburn.



Finlay Direct Color Photographs by Edwin L. Wisbeck
BEACH ROBES MADE IN ANNISTON

From raw cotton the State for years enjoyed its chief income. But, gradually, as mills multiply, Alabama turns more and more of its raw products into finished goods.



ONE OF A LARGE FLEET OF MOBILE COUNTY SCHOOL BUSES



© National Geographic Society

Finlay Photographs by Edwin L. Wisnerd

IN A CORNER OF THE BELLINGRATH GARDENS

Tourists from far and near come to see the famous azalea exhibit of southern Alabama. In this bowl are 30 varieties of japonicas and 22 different kinds of azaleas.

WHERE THE NEW SOUTH CHALLENGES THE OLD



GRACEFUL POTTERY FROM THE EASTERN SHORE OF MOBILE BAY

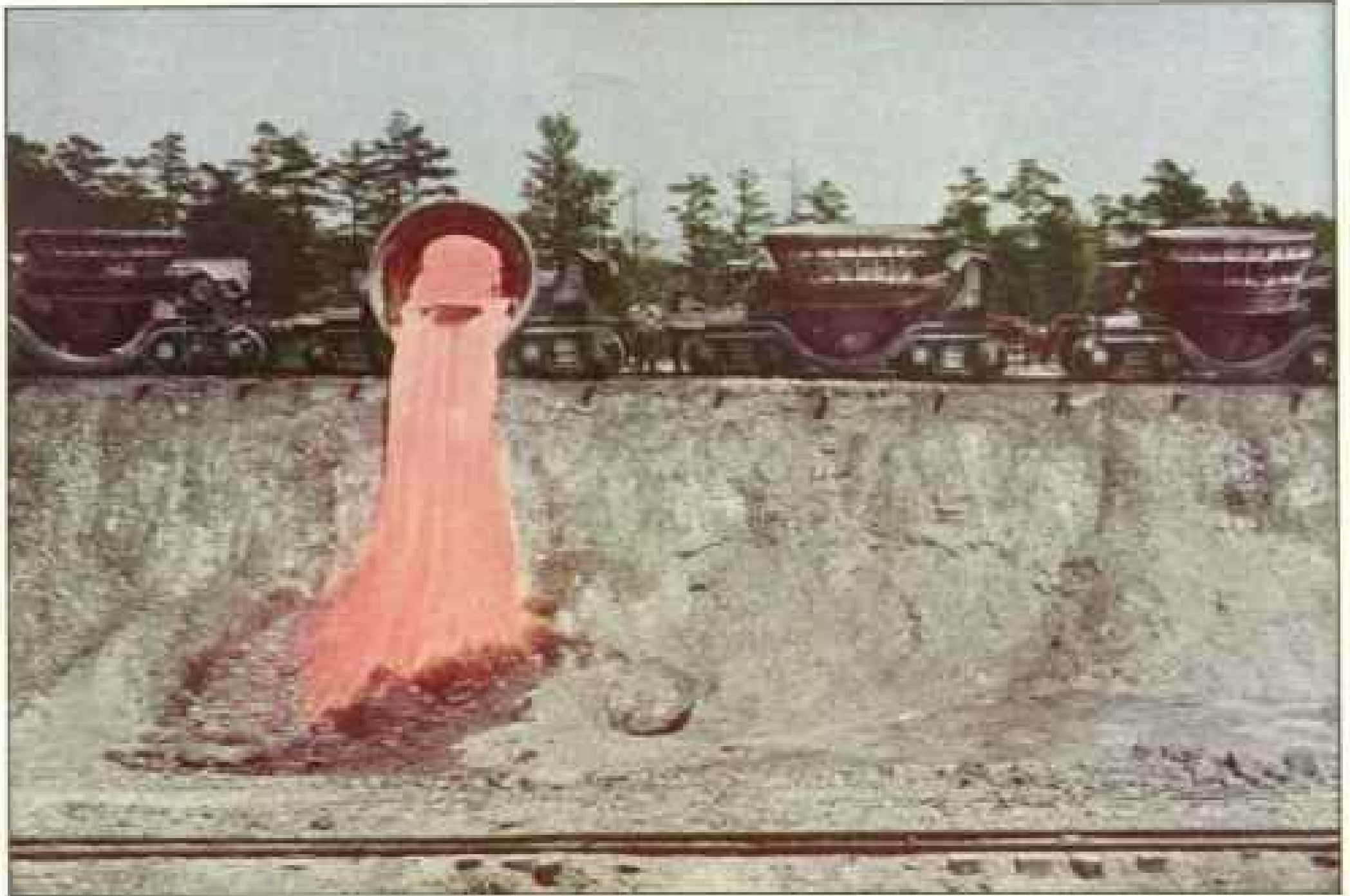


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Finlay Photographs by Edwin L. Wisnerd.

ART STUDENTS SHOW THEIR SKILL WITH THE BRUSH

Birmingham derives her power and wealth from mines, from fire and smoke, the rattle and roar of furnaces and mills. Her spirit is aptly revealed in the works of these young artists.



A GREAT CUP TIPS AND ITS RED-HOT SLAG HISSES DOWN THE DUMP

This is the molten residue of rock, discarded and hauled away from the furnace after the valuable ore has been extracted. Such dumps near Birmingham are being converted into material for road-making and other uses.



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Finlay Photographs by Edwin L. Wheeler

LONG-LEAF PINE NEEDLES AND CONES APPEAR IN ALABAMA ARTS

On baskets and candlesticks the symmetrical burrs lend themselves to decorative work. An exhibit, near Ashland, of home-made wares produced after instruction by the county demonstration agent.

WHERE THE NEW SOUTH CHALLENGES THE OLD



"HAVE YOU GOT 'TARZAN' OR 'ROBINSON CRUSOE'?"

Book wagons with outside shelves carry free reading matter throughout the countryside. Books lent on one trip are picked up on the next. This splendid method of stimulating an interest in good books is spreading throughout the country.



© National Geographic Society

Finlay Photographs by Edwin L. Wisnerd

KNEE-DEEP IN CABBAGE ON A GREEN TRUCK FARM NEAR MOBILE

A veritable sea, with 10,000 heads to the acre, the big brittle cabbage leaves rattle and pop like paper as men wade knee-deep among the plants. What a lot of corned beef this calls for!



© National Geographic Society

Finlay Photograph by Edwin L. Wisherd

A GIANT WISTARIA VINE IN RIOTOS BLOOM NEAR PRATTVILLE

Named for Caspar Wistar, an American anatomist born in the 18th century, the wistaria, with its lilac-purple and violet-blue flowers, has become popular for decorative use on walls, verandas, and porches in many parts of the world.

West of Montgomery, on the highway marked "U. S. No. 80," you pass near a mound which some archeologists say is the site of Talisi, an Indian town visited by De Soto. In the bend of the river to the north many graceful burial urns have been excavated. Incidentally, on the Steele plantation hereabouts, camels were used as work animals before the war between the States.

Tuscaloosa, one-time State capital, is named for the great chief who fought De Soto. Coosa, now a river's name, was also an Indian town on that stream. Here De Soto's horses, descendants of Yemen Arab sires, got fat on Alabama grass, while the Spaniards rested and visited the Indians. "Chief Tuscaloosa," wrote the scribes, "wore a fur coat which gave off a sharp odor." This was probably the first use of skunk in high society.

The mere sound of these Indian names makes State geography a musical study. Tuscumbia and Tombigbee are so much more euphonious than Podunk and Smithville. Tuscaloosa, Tallapoosa, Opelika and Talladega; Okatuppa and Eufaula, Cahaba and Pushmataha, Tuskegee and Sylacauga, Conecuh and Chickasaw—how the school-boy can "rattle these off"!

On the Tombigbee your guide, part Indian, leads you to where men are cutting a bee tree, and you learn about wild bees and how they act when robbed.

In April of each year thousands of bees hatched in Alabama are sent to northern States. Many go even to Canada. Last year the State sent out 100,000 queens and 45,000 pounds of "package bees." The common laborer bee is shipped in pound and two-pound packages, and to each package is attached a tiny cage housing one queen. Many thousands of queens are also sent separately, for use by Northern apiaries in "requeening" or building up weak colonies.

THE MODERN STEEL BARGE IS SUPPLANTING THE OLD STERN-WHEELER

That bee tree robbed, you put off in a launch, to idle down the tree-lined river, where yard-long Spanish moss hangs from ancient boughs—moss so straight and untangled that you can fancy some fairy hair-dresser comes each dawn to comb it.

The old stern-wheel packet boat, with hoarse, echoing whistle, puffing exhausts,

and jangling bells, its decks piled with cotton bales and barges hugging its sides like half-grown pigs beside a sow, is still seen on Alabama rivers (see illustrations, pages 709 and 712). But of course the modern steel barge, drawn in fleets of half a dozen by a powerful tug, now carries most of the freight.

Alabama's important river system is shaped like a tree. Hold up a map of the State (see page 706) and think of Mobile Bay as a tree's roots. North from it extends a thick, fat "river-tree" trunk, from which watery limbs and boughs curve off to tap all the rich mine, farm, and factory sections of the State. The landing places are the fruit of the tree. Engineers say no other river system in America has its channels so conveniently laid out, to serve adjoining regions.

WATER-BORNE TRAFFIC INCREASES ENORMOUSLY

Pioneers used these streams in pre-railway times to move crops to market and bring back supplies. But, being then without locks, transport was possible only during winter freshets. Low water in summer tied up the boats. When railroads came, they cut rates in times of high water, to draw freight from the boats, then doubled their rates in times of low water. This ruined river traffic. It was only during the World War, after Congress had set up a corporation to improve inland waterways and relieve railway congestion, that Alabama's rivers again came widely into use.

From Mobile Bay, root of the river tree, you see the river system extend inland, made up of the Mobile, Tombigbee, Alabama, Black Warrior, and Coosa. For 419 miles, or to Birmingham, the Tombigbee-Warrior route is improved, so that not only the Government-owned Mississippi-Warrior barge line, but also many private boats carry freight here.

Crossing the State diagonally, and reaching as far as Rome, Georgia, is the Alabama-Coosa route, with all its hydroelectric wealth. Across north Alabama flows the Tennessee, with an authorized project adopted by Congress for improving its navigation for 650 miles from Knoxville, Tennessee, down through north Alabama and back up to Paducah, Kentucky, on the Ohio. Besides, the great



CO-EDS OF THE ALABAMA POLYTECHNIC INSTITUTE RETURNING FROM A TRAINING PERIOD IN HORSEMANSHIP

The building, dedicated in 1930, is the new Ross Chemical Laboratory. Founded in 1872 at Auburn, the college has a student body of 1,800 and has educated many of the South's leading citizens.



THE AMELIA GORGAS MEMORIAL LIBRARY AND THE SCHOOL OF COMMERCE, UNIVERSITY OF ALABAMA

The building is named in honor of the wife of Gen. Josiah Gorgas, at one time President of the University of Alabama. Mrs. Gorgas was the mother of the late Surg. Gen. William Crawford Gorgas, famous for his successful efforts in stamping out yellow fever in Panama during the construction of the Panama Canal.



SHE STUDIES POULTRY RAISING AT THE ALABAMA POLYTECHNIC INSTITUTE AT AUBURN

Federal intra-coastal canal project, partly built, runs along the coast of Alabama, on its winding way from Florida to Texas.

The astonishing growth in water-borne trade on the Warrior and Tombigbee rivers has become of tremendous value to Alabama and has saved much money for the whole South. Steel and iron, rails, pipe, fence wire, oil mill supplies, coke and coal are all hauled out this way. Some cargo, in seagoing barges, is sent to Texas and Florida. Other loads are put on ships at Mobile to go overseas.

Imports, upstream through 17 locks, may be manganese from Brazil, other ores from Mount Sinai, from Spain, and crude oil and sulphur from Texas. Sugar from Porto Rico and Cuba reaches people in

Tennessee, Kentucky, west Georgia, and Alabama by this route at a saving of many dollars a car in freight. At Tuscaloosa and Selma thousands of bales of cotton, coming in by trucks over paved roads from far away, are loaded on barges for export at Mobile. Coal, limestone, cement, and similar bulky things which can afford to travel slowly are often sold from Alabama in competitive outside markets only because of low freights down the Warrior.

This canalized river system is nearly 30 times as busy now as it was when Alabama was first voting for Grover Cleveland.

"The subject of the economic value of inland waterways," said a prominent Birmingham engineer, "is a controversial one, but Alabama can enter the claim that no State is in a more favorable position than she to

enjoy to the fullest extent all of the benefits which may accrue from this form of transportation. In fact, it may be the proving ground upon which the economics of canalized waterways are established."

HOW ALABAMA RUNS BY ELECTRICITY

Next to schools, electric power is the prime factor in Alabama's growth. It has worked miracles here. Men dammed the streams and blazed wide avenues through the woods for rows of steel towers that carry wires to all parts of the State. Wherever raw materials exist, there power is sent.

Factories rise. From Akron, Ohio, a great rubber company sent agents to build a tire factory at Gadsden. Chunks of raw

rubber and cotton go in at one end, to roll out as shiny new tires, beautifully molded, at the other. But the human interest is that hill girls and boys, skillful now from good training, earn good wages! A free vocational school is here, training boys to run repair shops. You see girls in neat blue uniforms, silk stockings, beads, and wrist-watches deftly doing light tasks—independent. Many from the country own small cars, driving home each night.

Copper wire, hosiery, silk, condensed milk, steel freight cars, braid and ribbons, electro-chemical products, all these and more, are now manufactured in the State. Down at Geneva is a "dude" mill that makes athletic underwear. It has the spirit of an old Swiss guild. Nearly a third of its hand-picked women workers are high-school graduates. A few are ex-teachers, earning more than in the classroom—more than their fathers. Citizens say its lively example and fat payroll have emphasized the dignity of labor in a once over-leisurely community, and have helped build scores of new homes.

But power from wires not only lights and speeds up the towns. Slowly, but surely, it lifts drudgery from the farms. Out of 67 counties in the State, 64 use power on the farms, though many backwoods regions are yet untouched.

Moths come at night, in a certain month, and leave their progeny to devour acres of gardens. Ingeniously, an electric trap was rigged. Lights were strung on poles—



Photograph courtesy Alabama Polytechnic Institute.

MAN MUST FOREVER FIGHT INSECTS THAT MENACE HIS USEFUL PLANTS

This boy in Franklin County, Alabama, is dusting poison on cotton plants to conquer army worms.

a pan half-full of oil under each lamp globe. Now, when the moths come, the bright lights over the field are switched on. About the lamps flutter the moths, only to fall into the oily "electric chair," and the crop is saved.

Pumps, washing, sewing, sweeping, and milking machines, churns, saws, gins, animal shears, fans—all are run by motor. "We saved our farm women 1,500,000 hours of drudgery last year," said an electrician. "All they've got to do now is turn a switch to hear music, hatch chicks in the incubator, or freeze an old rooster in the electric box and save him till some



ORNAMENTAL IRON GRILL WORK SURVIVES ON MANY MOBILE HOMES

In its narrow streets, its gardens, old cemeteries, and in much of its architecture, Alabama's seaport still reflects the spirit of Colonial days, when French, English, and Spanish governors in turn held sway.

preacher comes." And over the wires, too, the daily radio voice of Alabama, singing, joking, and coaxing.

NATURE GAVE ALABAMA MANY USEFUL THINGS WITH WHICH TO WORK

"If you keep fire and hogs out of your forest, it will grow up in spite of you," Alabama says. Two-thirds of the State is in trees or cut-over land returning to woods.

Pines grow here like weeds. The speed at which an abandoned cotton field will become a forest of eight- to twelve-inch pines is astonishing. That's one reason why paper mills follow the textile mills to the

South. Water power, sunshine, and cellulose—you see the trilogy at work in kraft pulp, wrapping paper, bags, and paperboard products.

From a cotton crop of around 1,300,000 bales, some goes abroad, much to cotton mills, and some, competing with wood, into rayon, 70 per cent of which is now made below the Mason and Dixon line.

HERE ARE CITIES OLD AND NEW

With lavish hand, too, Nature dumped iron ore, limestone, graphite, and marble into Alabama—and coal enough to last some 2,000 years. Birmingham is one of these rare map spots where coal, ore, and fluxing material for iron-making lie side by side. These give rise to Birmingham's assertion that it is the largest city of its age in the United States. And Alabama's cast-iron pipe trade plays a major rôle (p. 728).

You cannot weigh Birmingham and Mobile in the same scales. Wild cats were chasing rabbits through cotton fields where Birmingham now stands when Mobile was already old and cultured.

Adventurous French founded Mobile. Cadillac, who settled Detroit, was one of its governors. Mobile was born of exploration, gold hunger, conquest, and sheer love of peril and chance—in the days when America was young. Gallantly Mobile wooed the *filles de cassette*, and married the plain along with the pretty. So named because each maid carried her things in a tiny box, these now historic girls came from France, chaperoned by nuns, to be-

come the wives of colonists here.

Prosaic and humble Birmingham began. Two new railroads, crossing in a strategic part of Alabama, spawned a few pine shanties and a new "railroad center" was born. Surveyors' chains, not cow paths, laid it out. That was only 60 years ago. When Chicago was burning, Birmingham was barely a cross-roads village. Now it is the mightiest industrial city in the South.

Moss-grown epitaphs in French, 18th-century houses, ancient live oaks planted by aristocrats who knew Louis XIV; lasting memories of gallant French, English, and Spanish governors—all these blend in the romantic history of Mobile, tolerant, courteous, ripe in culture.

Peace and good times, it is often said, do not make history. So Birmingham has no history of the kind that fills most history books. Starting from zero—rising in the Reconstruction Era—she swiftly built giant industries that touch the world's ends and change the whole economic structure of Alabama.

Pirates, yellow fever, hurricanes, siege guns—all these tried the soul of Mobile.

Bernardo de Gálvez, who later finished the building of Chapultepec Castle, near Mexico City, once took Mobile from the English; and American soldiers took it from the Dons. Its past is the very essence of drama, of which roaring, rich, powerful new Birmingham wots not.

The battles of Mobile Bay, Shiloh, and Lookout Mountain were all in printed history years before the town-name Birmingham got into the news.



EVEN HISTORIC BIENVILLE SQUARE, AT MOBILE, YIELDS TO SKYSCRAPER SHADOWS

Montgomery has a dual personality. Lee and Stonewall Jackson are her heroes. She proudly shows you the chamber in the State Capitol where the Confederacy was formed—and there is the composer's original draft of "Dixie." A metal star set in the Capitol steps shows where Jefferson Davis stood when he took the oath of office. His Montgomery home is preserved as a museum.

You hear of this and that ancestral home where Lafayette, on his famous tour—partly by sulky—stayed all night. "Our old place is famous, too," says one sprightly lady. "It's the only old home extant where he *didn't* stay all night."

Then there is Montgomery's other side. Two youths discuss television—leaning



FURNACES AT ANNISTON FOR SMELTING BAUXITE AND MAKING ALUMINOUS ABRASIVE MATERIAL.

The huge circular posts hanging downward are the electrodes. Alabama's mines, smelters, and foundries reveal all that science has achieved in the extraction and treatment of ores.

against a life-sized wooden horse before a harness shop. (Herds of these saddlers' dummies once dotted America—now they are as rare as cigar-store Indians.) Busy airports, big hotels, movies, the conventions of fertilizer salesmen; State-owned radio stations playing "Turkey in the Straw" as a prelude to talks on how to ship bees, grow cabbages, wean calves, or build a chickencoop; State highway engineers, agronomists, cotton statisticians, legislators crowding the old Exchange House lobby, the roaring presses of the *Advertiser*, printers chewing tobacco, planning a fishing trip, telling fishing stories.

Greensboro, Florence—laid out by an Italian and hence so named—and Huntsville, with its giant spring that lured pioneers to settle here by thousands, more than a century ago, are rich in tradition. Gadsden, like Anniston, forgets its past. To the new god Industry they bend the knee. Yet stiffly, at times. There was Mrs. X, an aged lady of charm and quality, poor but proud—and particular. To live, as her income shrank, this embattled aristocrat let it be known that a long-cherished

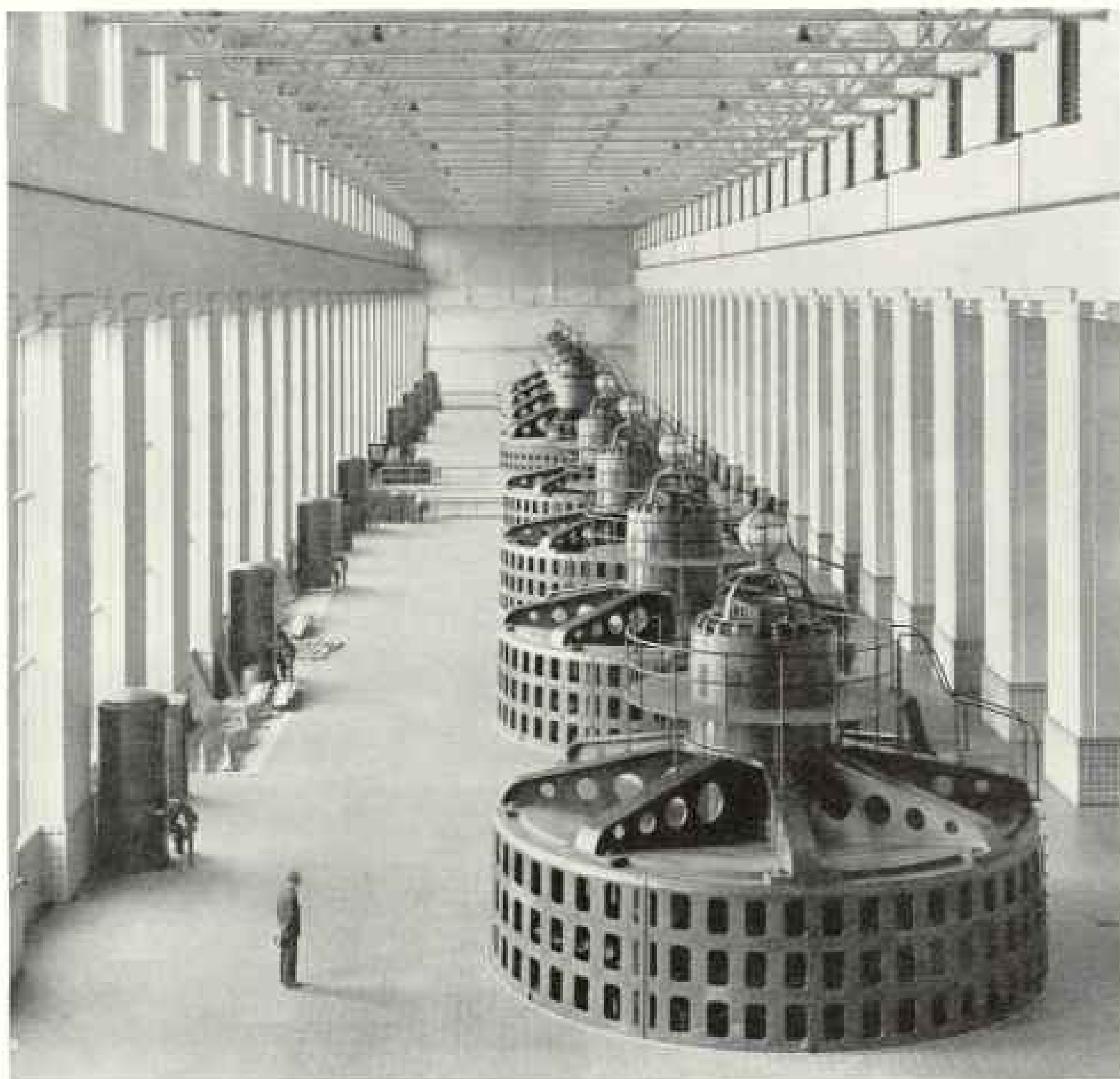
piece of silver had to be sacrificed. . . . And so there came a *nouveau riche*, boldly sounding the old brass knocker.

"Tell that woman," said Mrs. X to her one and only maid, "that I may have to sell my silver, but I don't have to see her. Send her around to the side door—and hand it out to her!"

SCHOOLS AND THE QUALITY OF FUTURE CITIZENS

Veritable armies of boys and girls, from all classes of society, batter at college gates. Democracy teaches equal opportunity for all. So, in State-supported schools, all are admitted, with the result that the same percentage flounder and fail, here as in other States. Meantime, Alabama gropes in vain, again like other States, for some means of timely selection; some method or device by which it may early identify those capable of achieving education along higher levels, and determine which other groups should take farming, commercial or mechanical training.

Tuskegee is, of course, the South's most successful school for students of African



GIANT GENERATORS AT WILSON DAM, NEAR FLORENCE

begun during the World War, this enormous plant, built and still owned by the United States Government, was designed chiefly for producing nitrates. For years debates have waged in and out of Congress as to whether the Government should operate, sell, or lease the plant, which, in the meantime, is idle.

descent. An inscription on the memorial to Booker T. Washington, founder of the Institute, reads:

"We shall prosper in proportion as we learn to dignify and glorify labor and put brains and skill into the common occupations of life."

"We can find a place for every trained artisan Tuskegee turns out." I heard this again and again from captains of industry through the South.

SECTIONALISM IS DISAPPEARING

To some conservative old families a newcomer from another State, whom they

chance to like, is still "a gentleman born away from home." But sectionalism is passing. Alabama boys go north to school; northern girls come here in flocks, to be finished with a southern drawl and a dash of ante-bellum atmosphere. Professors, coaches, ideas are exchanged with schools in other States; intellectual fellowship with them increases. You see 2,000 teachers pack a hot hall to hear Ethel Barrymore, or to listen to a lecture on India.

So, material for a new creative chapter in American history is in the making. Look at all the late books, poems, plays, essays, social welfare and economic stud-



CHIEF TUSCALOOSA GIVES DE SOTO THE SIGN OF PEACE

During a pageant celebrating the one hundredth anniversary of the University of Alabama, students in appropriate costumes reenacted the meeting in 1540 between the Spanish explorers and the historic Indian chief (see text, page 703).

ies being printed now about the "New South." It is not new at all, Alabama says; it is just "new" to a North awake at last to its charms as a place in which to live and to go into business.

It is new to the ever-increasing tourist hordes, who motor across it now from Chicago and Cincinnati for Florida, for Biloxi, or for the new playground of fishermen, hunters, and yachtsmen about old Fort Morgan and Dauphin Island, in Mobile Bay (see Color Plate IX). And no longer is its climate thought unsuited to athletics. Ask those "alien" college football teams who have succumbed to Alabama!

At Birmingham—as at Prague, Berlin, or Stockholm—you watch 3,000 college and public-school athletes in amazing mass drills, in costumed folk and esthetic dances (see Color Plate VIII). You see 500 girls of 12 to 16, in blue gingham rompers, doing a soft-shoe dance to "Suwannee River" played in waltz-time, and 100 or more youngsters 10 or 12, in acrobatics worthy of Ringling's paid tumblers—all a part of public-school hygiene and body

training, stimulating anew your faith in Young America.

Birmingham, Gadsden, Huntsville, Anniston, Selma, even conservative Montgomery and stiff, aloof, leisurely Mobile, all speak the new language of industrial revolution, and are "anxious about many things"—chemistry, steel, the tariff, golf, backgammon, when to try for tarpon in Mobile Bay. Old fox horns and fiddles are drowned out by whistles and the rattle of mill wheels. Members of the younger generation seldom even mention the Civil War; when they say "the war," they mean the World War.

Now factory chimneys form Alabama's cloud of smoke by day and pillar of fire by night. She is no longer at peace with Nature. Big powder blasts rock the ancient hills. Tanned youths in khaki and horn-rimmed glasses sight through transit levels, or peck at mineral rocks with slim hammers; and files of behemoth roadmaking machines growl over hilly highways.

All of this you would have seen had you come with De Soto and—in the manner of fantasy—lived here 391 years.

WINTER SKY ROADS TO ISLE ROYAL

BY BEN EAST

IN UPPER Lake Superior, fifty miles north of the tip of the Keweenaw Peninsula, northernmost point on the mainland of Michigan, lies a long finger of rocky and rugged land that lifts from the gray waters of the lake in a series of towering ridges and long, steep-walled valleys.

Narrow, fjordlike bays and channels indent its coast, winding back for miles like rivers between the timbered ridges. Bright lakes, flanked with dark forests of spruce and fir, lie cradled in the valleys. Jutting headlands and frowning cliffs guard the harbors, and countless small islets and reefs lie around it like sentinels around a rocky fortress.

This narrow finger of land, fifty miles long and a tenth as wide—its shape has been likened to that of a giant schooner set forever on a northeast course—is Isle Royal, the site of the newest authorized unit in our system of national parks.

SOME OF THE FIRST LAKE SUPERIOR COPPER MINES WERE OPENED HERE

The island is historically interesting, for here some of the first copper mines to be opened by white men in the Lake Superior region were put into operation about the middle of the last century.

Homes were built for the miners, villages established, and for a time man was near to breaking this wild island to his fashioning. But Isle Royal fought back at the intruders with isolation and cruel winters and the lashing gales of Lake Superior, and some thirty years later the mines were abandoned as no longer profitable. For the most part, the cabins and mine buildings have fallen or burned and the forest is gradually creeping over the rock dumps, the wilderness reclaiming its own.

Long before the white miners came, perhaps centuries before white men touched the shores of North America, aboriginal people were crossing Lake Superior to take copper from the rocks of Isle Royal. This island was the source of much of the copper used by primitive man in this part of the globe, and science has yet to unravel the secret of the race that hollowed out the

first open pits where the red metal outcropped from the rock.

Whoever they were, however, those ancient miners left indelible and dramatic record of their labors. They built fires on the ridges and cracked the heated rock with water. Then, with crude stone mallets brought from the distant mainland—there is no stone of that type on Isle Royal—they battered the broken rock away and took the nuggets of native copper, ready for fashioning into various objects.

At the bottom of those open pits the rude stone hammers are still lying, their battered ends bespeaking the use to which they were put by hands that have been dust these long centuries.

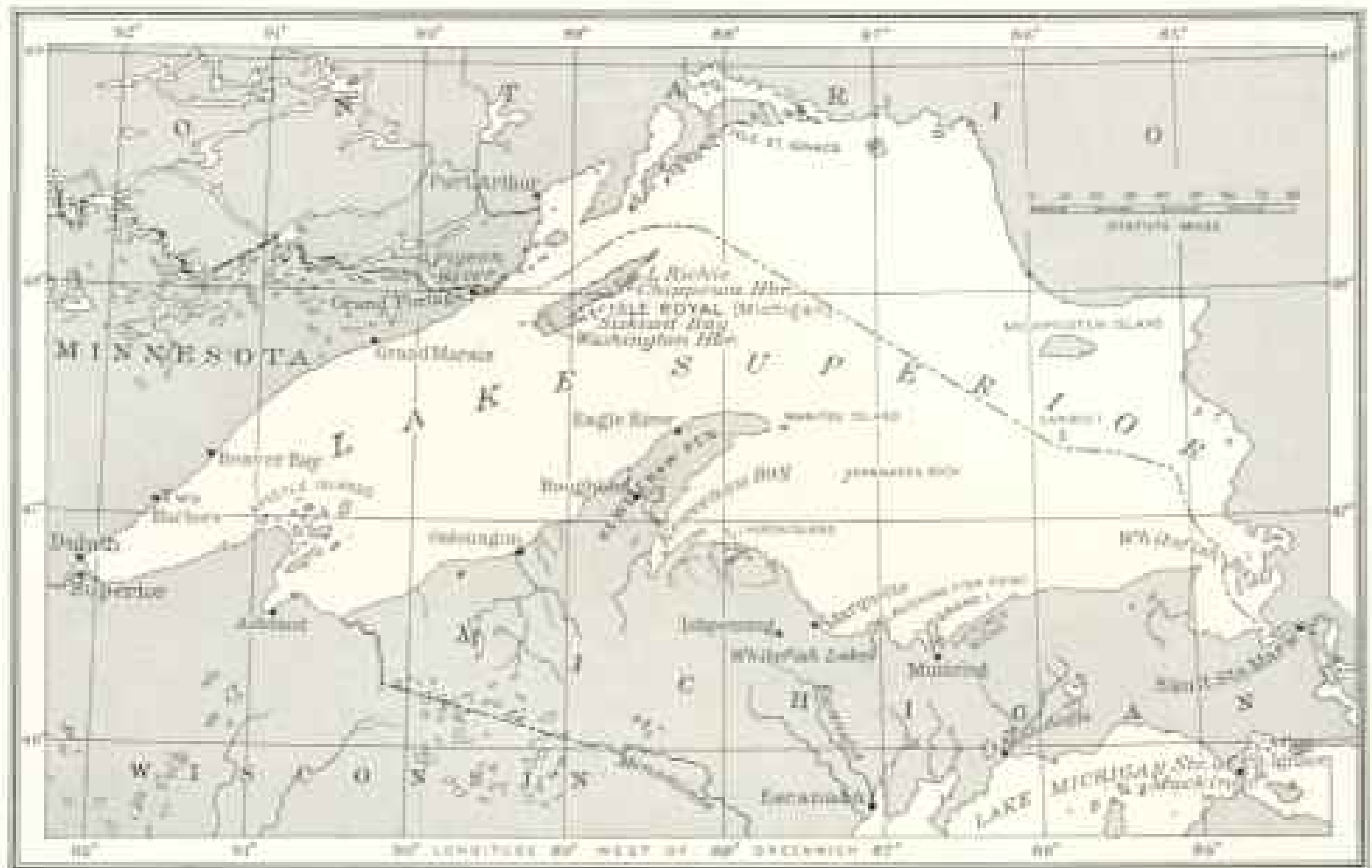
To-day Isle Royal is the home, in summer, of a scattered handful of commercial fishermen who come out in spring from the north shore of Lake Superior. Their homes, built usually of logs, stand on the sheltered harbors, nestling at the foot of towering cliffs that give refuge from the battering gales of the lake.

The fisherfolk remain through the summer, getting their mail three times a week from Duluth, nearly two hundred miles to the west and south, shipping their catch back by the boat that brings the mail. They have no other contact with the outside world, but live contentedly and happily on their isolated, lake-girt frontier.

In addition to the homes of the fisherfolk, there are four resort hotels, built on the shore of Isle Royal, which operate in summer. There is nowhere a clearing or a home in the interior.

AN ISLAND LEFT TO THE STORMS OF WINTER

Early in the fall the hotels close for the year. A little later the fisherfolk lift the last of their nets from the water, hang them in the fish houses to dry, and make ready to leave for the mainland. As the autumn gales roar down over Lake Superior and the harbors begin to skim with ice, they depart, either in their own tugs or aboard the Duluth boat, leaving an unpeopled island to the brooding silence, interrupted only by the screaming storms of winter.



Drawn by A. H. Bumstead

ISLE ROYAL, MICHIGAN'S FARTHEST NORTH

A narrow finger of land, fifty miles long, in Lake Superior, "has been likened to a giant schooner set forever on a northeast course" (see text, page 759).

Occasionally a fishing family, more hardy than the average or with a warmer strain of pioneer blood in its veins, lays in a stock of food supplies and remains over winter on the island. The isolation of such a family is complete and unbreakable. Not once in a decade are the restless waters of Lake Superior likely to freeze solidly enough to permit crossing from the Canadian shore by dog team; and, of course, once winter has come and the harbors are sealed, the lake filled with drifting ice packs that pile in grinding fields off the rocky shores, it is out of the question to reach Isle Royal or leave it by boat.

There are no telegraphic or cable phone communications between the island and the mainland. The family that decides to winter there settles down some time in November to a quiet daily routine, knowing that it cannot be broken until the ice goes out, probably in May; that no escape from this ice-fettered bastille is possible, come what may.

A WINTER EXPEDITION ORGANIZED

It was to bring back the first pictures ever taken of Isle Royal in its winter isolation, and to learn something of the condi-

tion of the island moose herd at that season, that an expedition was organized by the Booth newspapers of Michigan, in February of 1931, to reach this lonely spot by air. Our party was a small one, consisting only of Walter Hastings, staff photographer of the Michigan Conservation Department; George Austgen, pilot, and myself.

We left our home airport at Grand Rapids on the morning of February 2 in a six-passenger, cabin monoplane, carrying a heavy load of cameras, film, sleeping bags, snowshoes, and food supplies. It was our plan to stay on the island ten or twelve days, living in one of the empty houses of fishing families.

Of the more than thirty inland lakes in the island wilderness, several are large enough to serve as landing fields. In addition to these, we expected to be able to land on the frozen harbors; so there would be no trouble on that score.

We had decided to fly from Grand Rapids to Duluth by way of Chicago and diagonally across Wisconsin. From Duluth we would follow the north shore of Lake Superior toward Port Arthur, Ontario, to a point directly opposite Isle Royal.



Photograph by Frank M. Warren

VISITORS TO ISLE ROYAL MAY STUDY MOOSE IN THEIR NATIVE HAUNTS

Here the big animals are safe from hunters. Their only natural enemies are wolves, which come to the island over the ice during severe winters.



Photograph courtesy The Detroit News

A MOOSE CALF WADING ASHORE

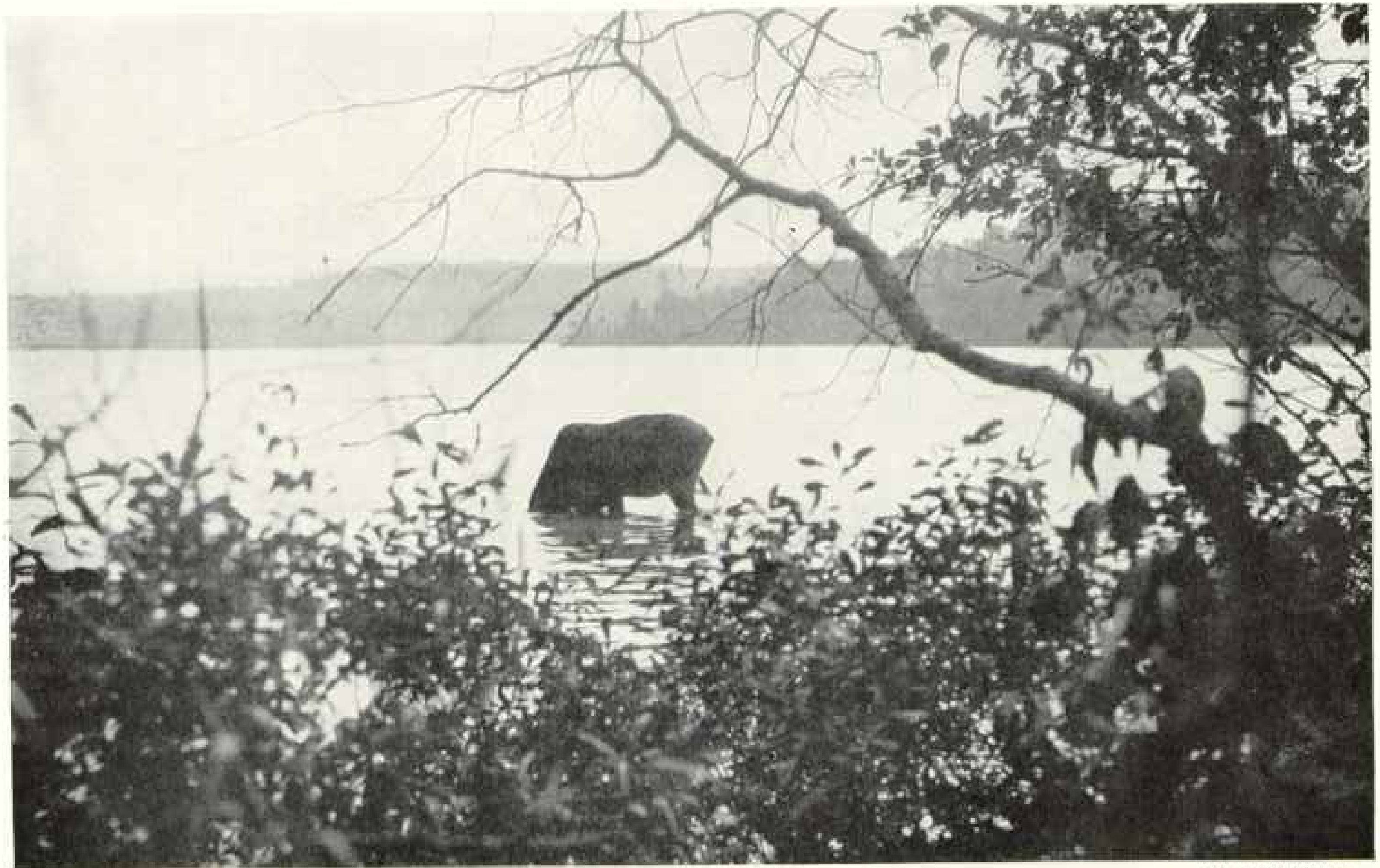
The moose were in danger of extermination in this country until stringent protective measures were adopted by the States in which these giant deer ranged. At present they may not be hunted legally anywhere in the continental United States. At several places, notably on Isle Royal, vigorous herds are developing.



Photograph courtesy The Detroit News

HERRING GULLS ARE MUCH IN EVIDENCE ON ISLE ROYAL.

They are attracted by the excellent fishing afforded in the cold waters of Lake Superior and in the small lakes on the island. But they are by no means the only feathered residents. Bird life there is varied and abundant, one observer having noted 86 different varieties in less than a month.



© Frank M. Warren

A COW MOOSE GRAZING IN ONE OF THE INLAND LAKES OF ISLE ROYAL, MICHIGAN

There are probably more moose on the island than in any equal area of the United States. They have been protected here for a number of years. The great beasts are particularly fond of succulent plants which grow on the lake bottoms.



Photograph from Ben East

AFTER LANDING ON THE TREACHEROUS SNOWY SURFACE OF LAKE RICHIE, THE WHEELS OF THE PLANE WERE REPLACED WITH SKIS (SEE PAGE 774)

The original plan had been to utilize a frozen harbor of Lake Superior for the landing, but the mild winter made this impracticable. There are more than 30 lakes in the Isle Royal wilderness and Richie is one of several large enough to serve as a landing field.

Then we should have only fourteen miles of water flying, for Isle Royal lies less than a third as far from the Canadian shore as from the nearest point on the Michigan mainland.

We encountered clouds within a few minutes of leaving the Duluth airport, but they were only a fleecy white field that lay over Lake Superior like a great woolen coverlet, breaking up and dissolving as they drifted in over the shore. For a hundred miles or more we winged a thousand feet above the edge of that cloud field, in bright winter sunshine, looking down upon beauty as breath-taking as human eyes could wish to see.

To the north the Minnesota and Canadian wilderness stretched away to the distant horizon, a wild succession of snow-mantled ridges and timbered valleys, dotted here and there with lakes.

To the south we could look across Lake Superior nearly to the Michigan shore, and as far as the eye could reach the lake lay hidden beneath its soft, billowy blanket

of mist. And just at the edge of the cloud field, beneath our left wing, a glorious span of rainbow kept pace with us over most of that hundred-mile flight.

We crossed without incident the fourteen-mile channel that separates Isle Royal from the Canadian mainland, circled about for a half hour or more, and finally chose for our landing place Lake Richie, lying about a third of the way down from the eastern end of the island.

The nearest fisherman's home was the cabin of Holger Johnson, on Chippewa Harbor, about five miles away. I had spent two nights there the summer before, while hunting moose with camera on the big Lake Richie wallow, and I knew we could find comfortable quarters and probably some reserve food supplies at the Johnson place.

A TENSE MOMENT

Halfway down the length of Lake Richie was a small island, and Austgen headed the plane toward it, as likely to

afford, along its shores, a clear lane of ice free of deep snow.

That was rather a tense minute, as we dropped down toward the level white mat of the frozen lake, watching the wheels out of the windows of the plane and wondering what would happen when they touched the snow. We had no way of guessing how deep that snow was, nor how hard-packed by the winds.

We had information to the effect that eighteen inches of ice covered the lakes of Ontario. That was much more than we needed for a safe landing, if the Isle Royal lakes were frozen equally thick and if slush under the snow had not prevented the formation of good, firm ice. At least, if we did break through, we were near enough to the shore to stand an excellent chance of getting to land safely.

It seemed a long time after we came over the end of the lake until our wheels touched the ice with a soft bump and rolled to a stop as easily as on an airport runway. We had landed in not more than eight inches of light, dry snow.

We flung open the doors of the monoplane and stepped down. Fifty feet beyond the tip of our right wing snow lay drifted waist-deep. We had not been able to discern the drifts from the air, and a landing fifty feet nearer shore doubtless would have meant trouble.

THE ONLY HARDSHIP OF THE TRIP

We were to experience the only hardship of the entire trip, in getting our equip-



Photograph from Ben East

HITTING THE SNOWSHOE TRAIL

The author, pack aback, starts on the five-mile trek from his plane to the cabin, where he and his fellow adventurers were to stay during their sojourn on Isle Royal. This packing over snow-covered forest trails was the hardest experience of their trip.

ment and supplies from the landing place down to the Johnson cabin, and we were given a sharp taste of what lay ahead of us on that first trip.

We carried a total of 350 pounds of supplies, food, cameras, and equipment, and we made four trips from the ship to camp, getting the stuff down. Then, when it was time to come away, we made three more trips to get it back to the ship again, five miles each way, a total of 70 miles on snowshoes. And the trail from Lake Richie down to Chippewa Harbor, where the Johnson home stands, does not deserve the name.



Photograph from Ben East

EXPEDITION HEADQUARTERS AT CHIPPEWA HARBOR

This picture and the one on the opposite page give a panoramic view.

Even in summer it is only a well-worn moose runway, following the course of the lake's outlet down a steep-walled valley. It runs through a dense forest of spruce and fir; it dips down at times into the alders along the stream; it climbs steeply up to circle rock or windfall. Fallen timber lies across it everywhere. A moose will not turn aside for a fallen log if he can step over it, and there is considerable difference between the stepping ability of a man and a moose.

We were to find that in winter, when the ups and downs of the trail must be negotiated on snowshoes, the tangles of brush underfoot carefully avoided, and the shoes lifted laboriously over each fallen log, the trail was even worse.

THE SILENCE OF THE NORTH

The sky had grown overcast during the late afternoon, the wind had fallen away, and the breathless hush of the northern

wilderness lay over the Isle Royal forest as we trudged along through the timber on our way down to Chippewa Harbor.

It is a strange quality, that silence of the north. It is more than lack of sound, more than the absence of any moving, living thing in all the white, frozen world. It is an intangible something that can be felt, a weight that presses down upon one. It is loneliness, solitude, and desolation, belittling and awing. It is the brooding stillness of death, in which no wind whispers, no branch stirs, no bird calls, no flake of snow eddies down from the gray sky.

Darkness was deepening over the island wilderness when we came out onto the ice at the end of Chippewa Harbor, with still a mile to go to the Johnson cabin. Just at the edge of the ice a cow moose trotted out of the alders before us, stared at us for a brief minute, as if doubting her own uncertain eyes, and then wheeled and went racing away, up the side of the timbered



Photograph from Ben East

A FISHING WHARF AND RACKS FOR DRYING NETS ON ISLE ROYAL

Nearly two tons of salt herring were found stored in one of these cabins (see text, page 773).

ridge. She was the first of Isle Royal's winter residents to greet us, a welcome reception committee. We had come in high hopes of making winter pictures of the island moose herd. The outlook seemed most rosy just then.

Minutes later a second member of the reception committee spoke to us from far away, on the steep hills beyond Lake Whittlesey. A lonely brush wolf, that howled a long, dismal wail, waited a brief minute for an answer, and called again, beginning in a short, sharp outburst of barking that broke quickly into a mournful howl once more.

The wilderness has no sound more stirring, savage, and weird than that. We were to hear it many times during our stay on Isle Royal; and even sitting beside a brisk fire, within the four sturdy walls of a cabin, it sent a chill along the spine.

Not that one need fear wolves on Isle Royal any more than elsewhere in the

northern wilderness; but, for all that, the wolf howl, even the weird calling of the brush wolf, touches some primitive chord and thins the blood.

At sunrise one morning we heard the distant howl of a wolf far off to the southwest of our camp. Almost before the echoes of his wild song had died away a gray brother answered him from the hills to the north, miles away; and then three others chimed in at points between the first two, and for minutes the snow-hung forest rang to such a dawn chorus as seldom comes to human ears.

WILD LIFE AROUND THE CABIN

We reached the Johnson cabin after full darkness had fallen that night, our legs aching from the unfamiliar work on snowshoes, our shoulders sore beneath the weight of our packs, and I doubt if a shelter has ever been more welcome to three tired and hungry men.



CONVERTING FOREST INTO FUEL.

The aerial invaders of Isle Royal's winter solitude cut and trimmed firewood on a near-by ridge and dragged the logs down to their cabin to be sawed into usable lengths.



Photographs by Ben East

A FRIENDLY GAME BY CANDLELIGHT

The Holger Johnson cabin (see illustration, page 766) proved cozy quarters for the author and his two companions. It was comfortably furnished, equipped with a good stove, and well stocked with food reserves.

Johnson's place is a cozy log house of three rooms and a loft, perched almost at the water's edge, near the entrance to Chippewa Harbor, protected from the lashing of Lake Superior gales by the lofty ridges of that steep-walled bay.

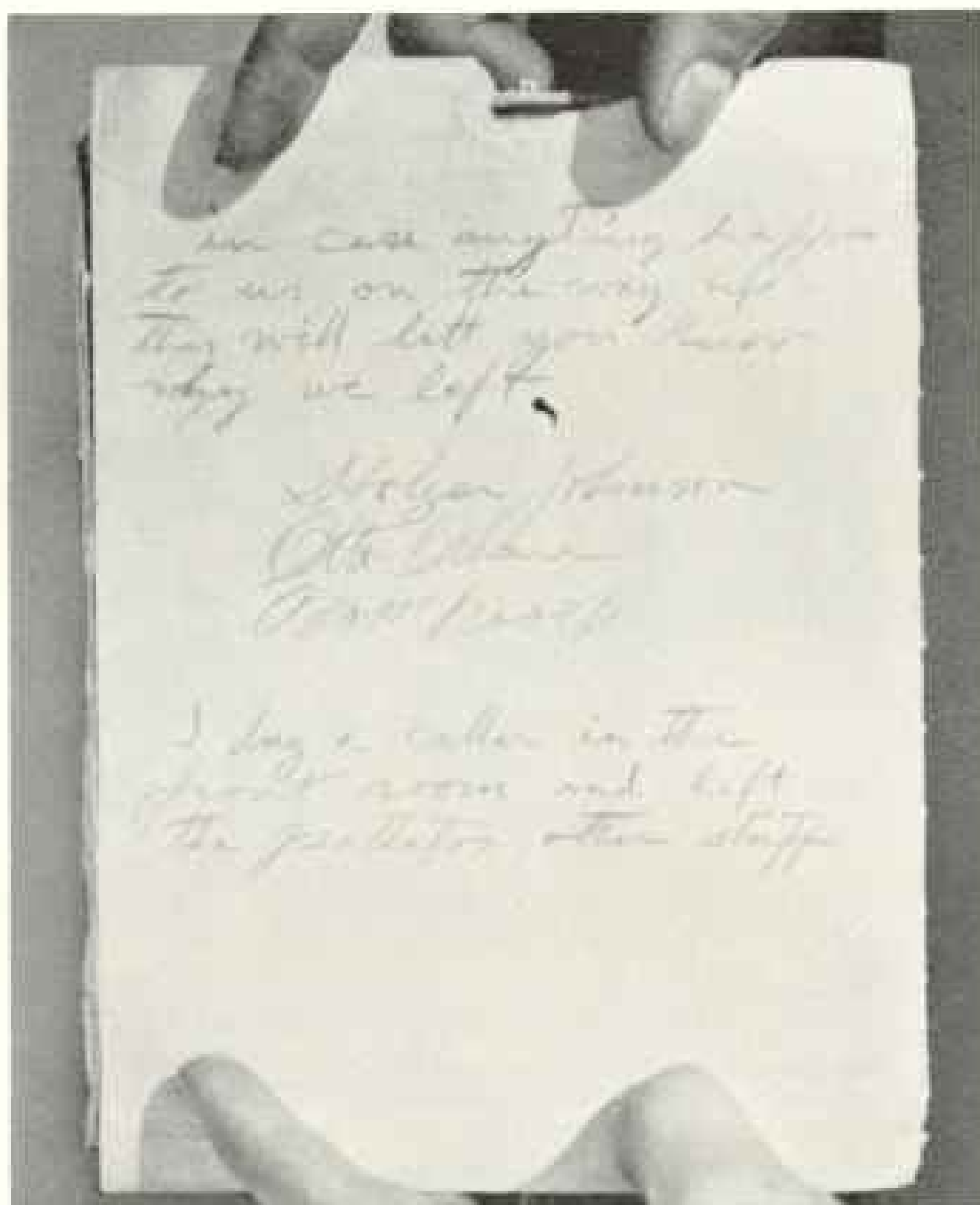
Like the homes of all Isle Royal fisher-folk, it stands with its feet literally braced on the rocky shore and its back against cliff and ridge, and the unbroken forest of spruce, fir, and birch comes down to the very door.

Moose came to the woodpile behind the cabin almost nightly during the eleven days we stayed there. They even followed the snowshoe-beaten path we made from the cabin to the fish house, some twenty rods distant along the shore, stepping in our snowshoe tracks for the sake of easier walking.

We cut our firewood on the ridge above the cabin, dragging the logs down the slope, and a pair of moose fed each night on the buds of the birch tops where we did our cutting. One day they even bedded down in the snow on the slope of the ridge less than a hundred yards above our door, and lay there until we disturbed them by climbing the hill after wood.

Gray, or Canada, jays, the "moose bird," "camp robber," or "whiskey jack" of the north country, were our constant neighbors—modest, unassuming little chaps, that waited quietly but eagerly in the spruce trees behind the house for the offerings of food we put out for them.

They came to us even on days when Isle Royal was in the grip of savage winds, when dry, hard-driven snow blew across Chippewa Harbor in a white smother. On such days they darted down to our feeding



Photograph from Ben East

THIS NOTE RECORDS A NEAR TRAGEDY

It was written by a party of trappers who, having come to Isle Royal and lost one of their number, braved the stormy waters of Lake Superior in a frail, open boat to obtain help (see text below).

station from the shelter of the spruce trees, clung for a few seconds, and retreated hastily to the cover of the forest with whatever scraps of food they could carry off.

THE SEARCH FOR A LOST TRAPPER

It was to the Holger Johnson cabin that four Grand Marais trappers had come earlier in the winter, and it was from here that three of them carried on a fruitless search for the fourth after he wandered away from the camp into the island wilderness.

We found the record of the search in two terse notes, one pinned to the wall of the cabin (see illustration above), the other written on the end of a cracker box and left on the table.

Notice: To let you know we are leaving to-morrow, the 17th. Iver [referring to Iver



Photograph from Ben East

PHOTOGRAPHING LAKE SUPERIOR'S WINTER WAVES

Storms begin on Isle Royal late in September and by December first the island is *incommunicado* save by airplane. The author's party were fortunate to experience a very mild winter. Most years Lake Superior is frozen over near the shores.



Photograph by Frank M. Warren

MAKING FRIENDS WITH A BABY LOON

The chick was only about 12 hours old when the photograph was taken, but it was caught well out on the lake and at least half a mile from the place where it was hatched. The mother loon stayed with it until the captors were within 18 feet of her.



Photograph courtesy The Detroit News

YOUNG HERRING GULLS MAKE NO EFFORT TO FIGHT.

Although they will sometimes try to evade capture, once caught they are entirely docile. The babies seem to be unable to distinguish between their parents and strange birds, with the result that they frequently beg food of the wrong gull, with dire results.



Photograph by Frank M. Warren

LOON'S EGGS ARE ALWAYS LAID CLOSE TO THE WATER.

The bird, which is the very personification of grace afloat, is a clumsy and awkward traveler on shore, and its nest is usually so located that it can spring directly into the lake. The two eggs, about the size of goose eggs, are greenish brown and spotted.



Photograph by Frank M. Warren

A BIRCH-BORDERED TRAIL THROUGH THE WILDERNESS

Half a century ago a mining settlement was established on Isle Royal, and this road led from the head of Siskiwit Bay up to the copper workings. The trees are second-growth white birch.

Anderson] went out and got lost Sunday, the 11th, and we can't find him.

We got here the 9th and the 10th we cut wood. The 11th Iver said he was sick so we went out looking at our wolf trappes. When we got home Iver was gone, we don't know where. Ben looking for him four days and can't find a sine of him. It snowed all night and all next day. We are leaving for Grand Marais to report. In case anything happens to us on the way up this will let you know why we left. HOLTEN JOHNSON, OTTO OLSON, ADAM ROACH.

In that last sentence was contained all the laconic drama of life along those inhospitable northern shores. It does not require much imagination to picture the three men, setting out to dare the wrath of

Lake Superior in their frail, open boat. Their way lay around the eastern end of Isle Royal, down the north shore, and across fourteen miles of some of the stormiest inland sea in the world, to the Canadian shore.

They left not knowing whether they would encounter a sudden winter gale or whether their boat would take on a cargo of ice and be swamped, but realizing full well they could expect no rescue party to come in search of them, for they were supposed to remain on Isle Royal until the spring break-up. Small wonder they left that brief note to tell their families where they had gone, in case they never reached the mainland.

The second note, written days later, recorded the visit of the Coast Guard cutter *Crawford* to Chipewewa Harbor. It read as follows:

H. F. Johnson, Otto Olson and coast guard crew from Grand Marais were here January 20 with searching party. Looked all over island for Iver Anderson. Went to McCargoe cove, Lakes Richie, Lesage, Chickenbone and boat went to Siskiwit Bay January 21. No trace of him can be found. Leaving for Grand Marais to-day, January 22.

But Anderson saved himself. He made his way afoot thirty-odd miles, across the island, after he became separated from his companions. At a fisherman's home on Washington Harbor, at the western end of Isle Royal, he found a small skiff, dragged it down to the water, and rowed the 14 miles safely across Lake Superior to the mainland, while the *Crawford* still carried on the search for him.

We had faced the possibility of going on short rations in the event we damaged our plane in landing, or were unable to start the motor after ten or twelve days' exposure to winter winds on the open ice of the lake and were obliged to wait for a rescue party to attempt to take us off.

We carried exactly 100 pounds of food. The weight of our cameras and equipment and the need for keeping our total load down to a fixed limit, in the event we used skis in the take-off, prevented the addition of extra food supplies.

FEAR OF SHORT RATIONS FADES

All worries of a food shortage faded when we took stock of the supplies left at the Johnson cabin by the party of trappers. We found flour, oatmeal, sugar, coffee, tea, butter, lard, dried fruit, and other staples in abundance. In a little cache under the floor was a quantity of canned corn, canned milk, and three or four bushels of potatoes, all safe from frost.

A keg in the cabin held 100 pounds of salt pork. Hastings insisted that no Isle Royal fisherman's home would be without a stock of salt herring, and we found them the first morning, nearly two tons, stored in kegs in the fish house.

MOOSE HERDS DISAPPOINT

It had been our hope to make pictures of the island moose herd, never photographed in winter. In that hope we failed dismally.

No one knows how many moose there



Photograph from Ben East

AN ISLE ROYALER AND HIS CHIPPEWA WIFE

The summer inhabitants of Isle Royal are mostly fisherfolk and those who make a living by looking after the needs of campers and the visitors at the several resort hotels. Most of the "natives" spend their winters on the Minnesota mainland.

are on Isle Royal. Estimates range from a few hundred to three thousand. It seems safe to say, however, that the 225 square miles of wilderness comprising the island do not support any such number as the latter figure. A conservative guess would fix the moose population at four to six hundred, but it would be only a guess.

At any rate, there are plenty of moose on Isle Royal and in summer they are easily photographed. At that season they congregate around lakes and wallows to feed and to rid themselves of insects. It is not unusual to see a dozen or more in a single afternoon.



Photograph by Frank M. Warren

IN SUMMER A SMALL STEAMER PLIES BETWEEN ISLE ROYAL AND FORT ARTHUR

We found winter photography of the moose a far different matter, however. The animals had not yet yarded, doubtless due to the mild winter and the fact that snow was less than two feet deep in the island forests. That meant that we must hunt the moose down, one at a time, stalking them on their daytime bedding places, and each time we saw them thick timber prevented the use of the cameras.

We spent hours of effort, trudging on snowshoes through dense swamps and over open ridges. We saw moose repeatedly; we tried to drive them within camera range; we even cut balsam and other trees for bait in the hope of luring them to a feeding ground, and we finished with a single moose picture, the result of a lucky accident, and none too satisfactory at that.

That picture was made on the ridge behind the cabin, early one morning. I had started up the ridge with the camera, hoping to surprise a snowshoe rabbit feeding on the birch tops from our firewood cutting. Two moose had fed there during the night, and one of them floundered to her feet from beside the trail, affording me a hurried snap shot, as she trotted away up the ridge.

It was with mixed feelings of satisfaction and regret that we watched our stay on Isle Royal draw to a close.

Two days before we were to leave we went out to Lake Richie and replaced the wheels of our ship with skis.

We planned to leave Friday, February 13, one day ahead of schedule, partially to save needless anxiety at home in case Saturday brought bad flying weather and partially for the novelty of flying on Friday, the 13th. Friday saw us storm-bound on the island, however, with a blizzard raging, and our take-off was delayed a day.

A few interesting experiences still lay ahead of us, including a battle with head winds over Lake Superior, a forced landing at Port Arthur, Ontario, when our fuel ran low, and a final landing on skis on the nearly bare airport at Duluth, where we ground-looped the heavy monoplane and damaged the undercarriage so severely that the flight home was delayed several days.

Those things, however, were not part of our adventure on Isle Royal. When our skis left the ice of Lake Richie, that adventure was done.

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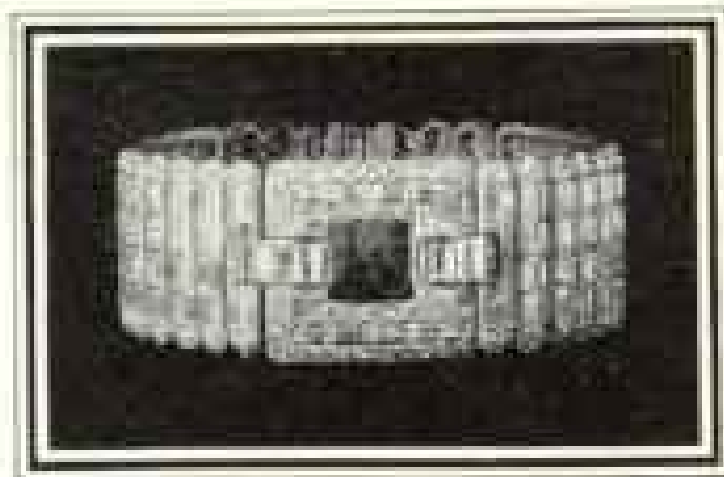
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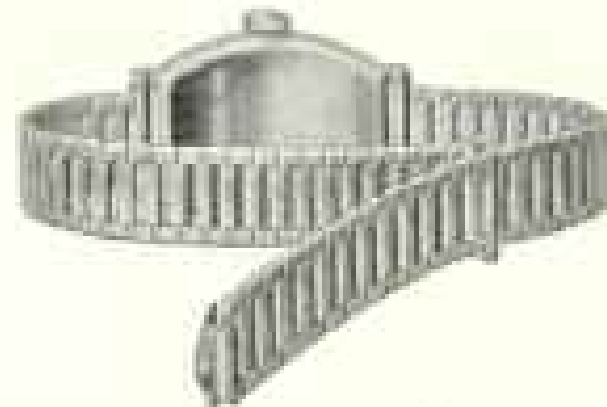
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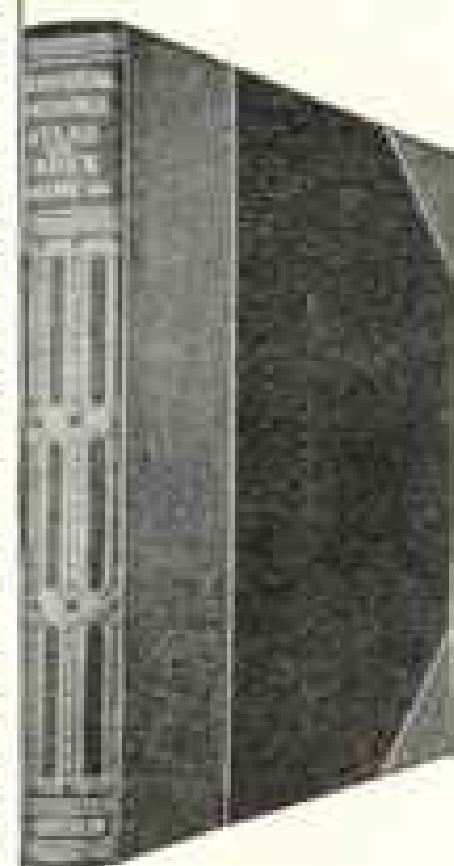
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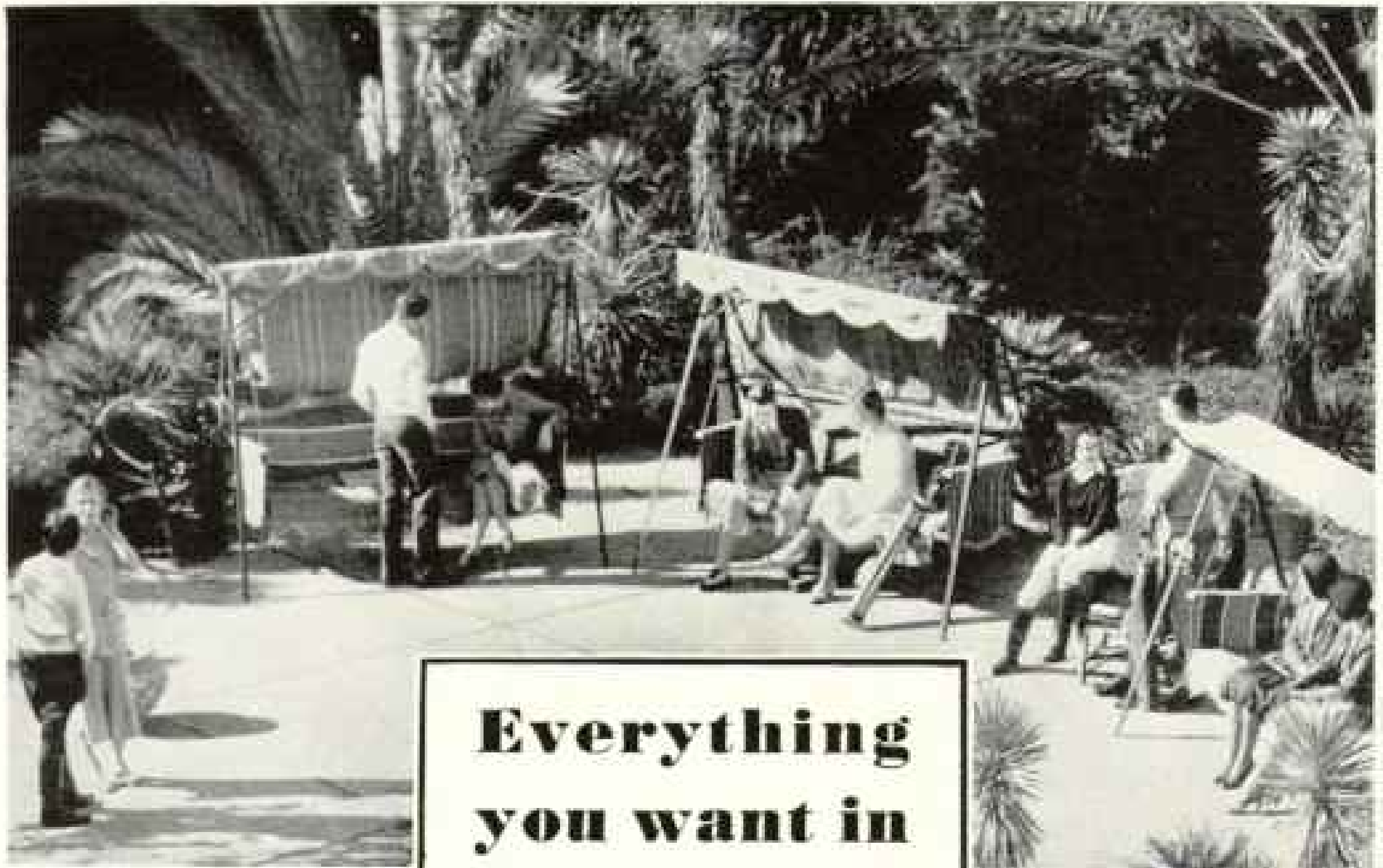
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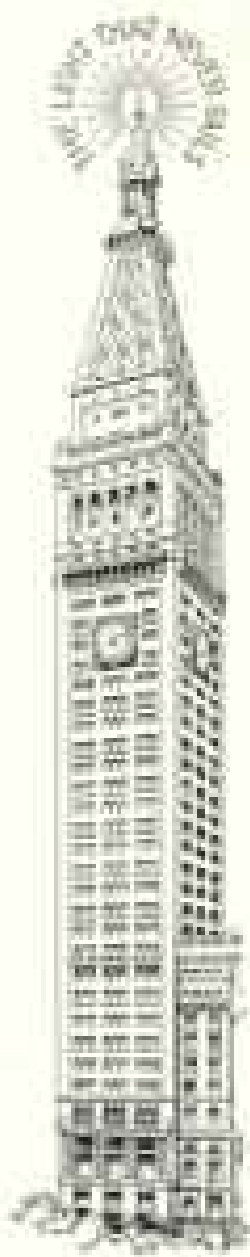
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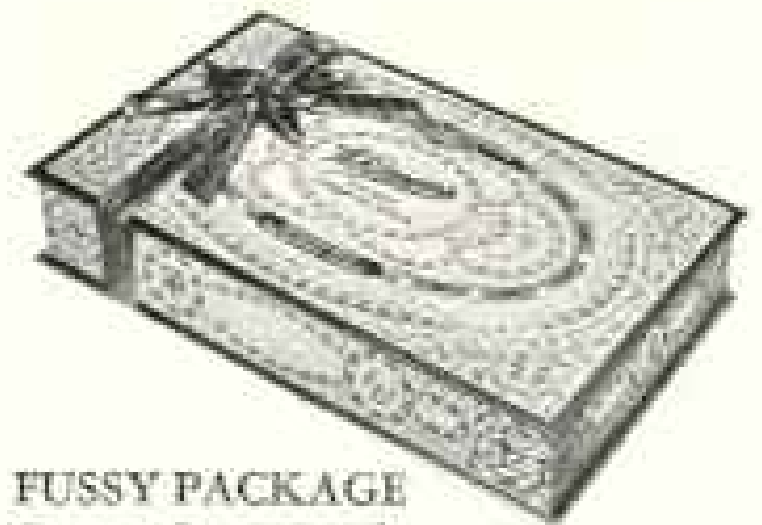
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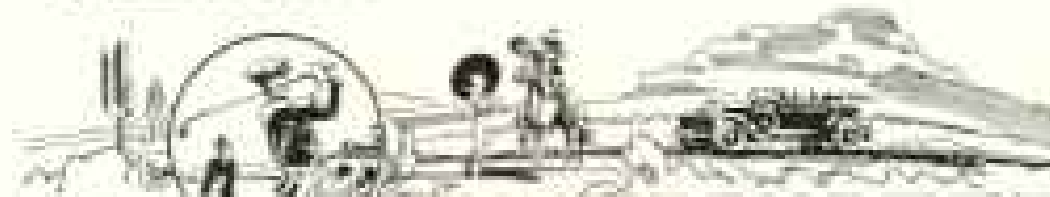
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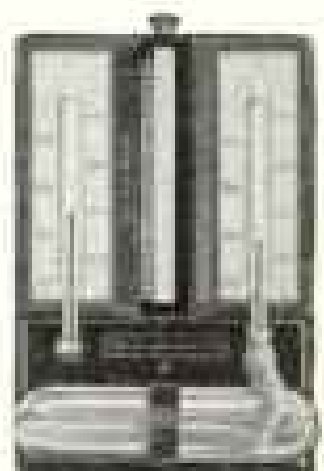
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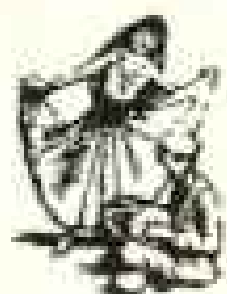
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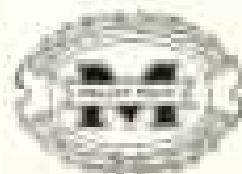
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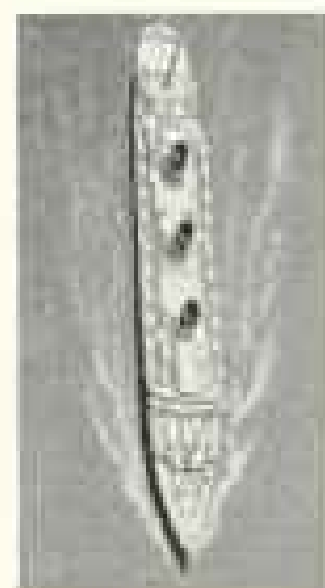
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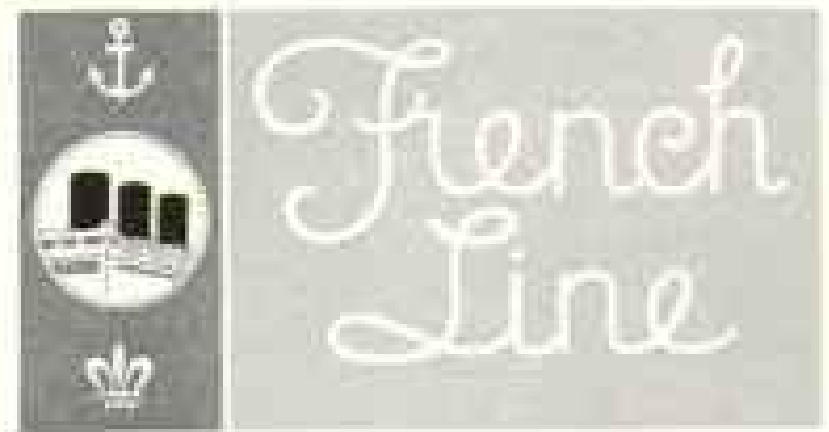


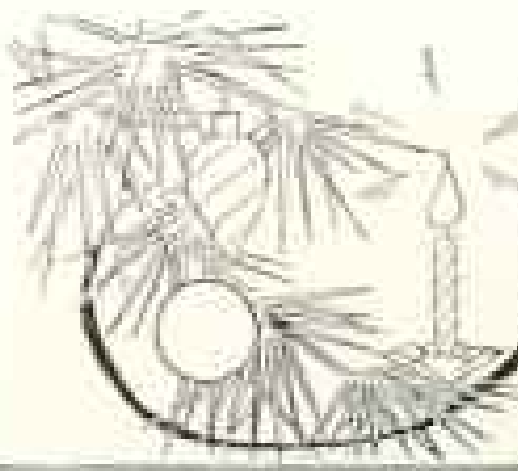
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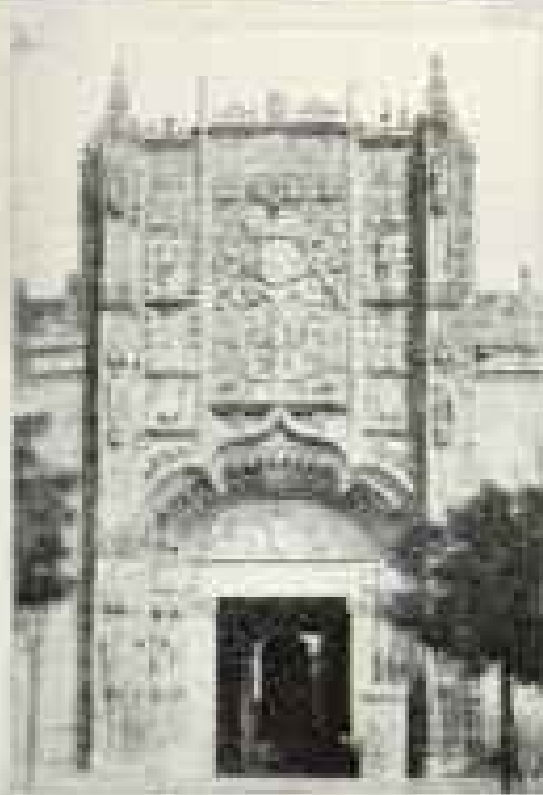
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