

VOLUME LXXII

NUMBER SIX

# THE NATIONAL GEOGRAPHIC MAGAZINE

DECEMBER, 1937

## Map Supplement of South America

Landscaped Kwangsi, China's Pictorial Province

With 34 Illustrations

G. WEIDMAN GROFF

and T. C. LAU

China's Wonderland—Yen Tang Shan

8 Camera Paintings

Changing Canton

20 Illustrations

Lake Geneva: Cradle of Conferences

With 13 Illustrations

F. BARROWS COLTON

Inside Cape Horn

With 29 Illustrations and Map

AMOS BURG

Land of the Horn, America's Tiptoe

10 Natural Color Photographs

Bonds Between the Americas

With 22 Illustrations

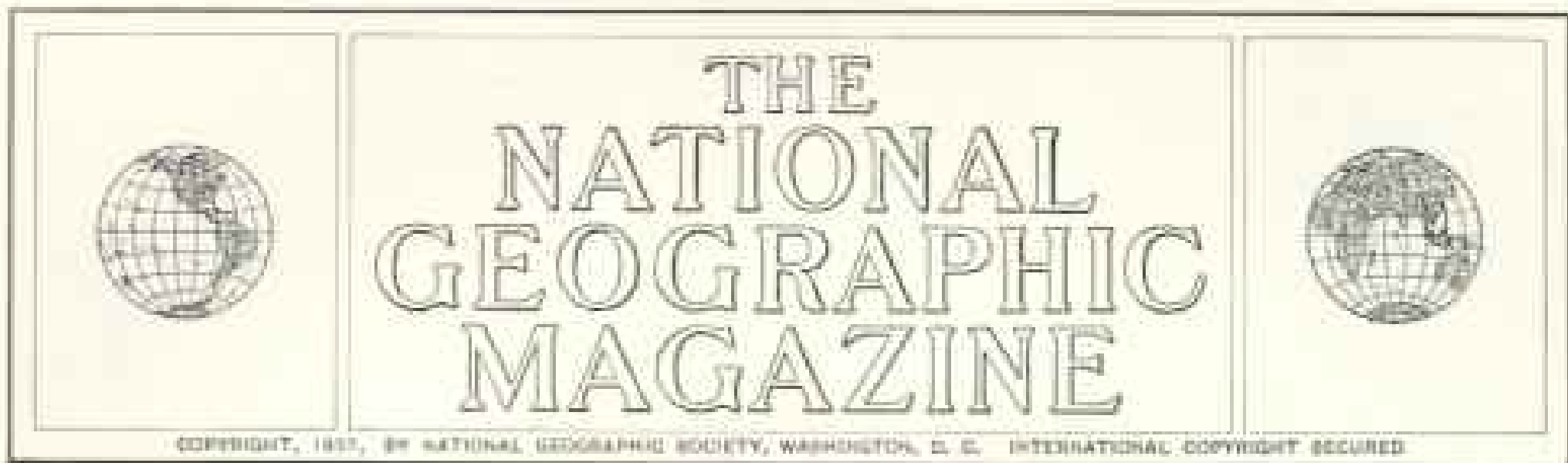
FREDERICK SIMPICH

The Society's Map of South America

PUBLISHED BY THE  
NATIONAL GEOGRAPHIC SOCIETY  
HUBBARD MEMORIAL HALL  
WASHINGTON, D.C.

\$3.50 A YEAR

50c THE COPY



## LANDSCAPED KWANGSI, CHINA'S PROVINCE OF PICTORIAL ART

BY G. WEIDMAN GROFF AND T. C. LAU\*

*Leaders of the National Geographic Society-Lingnan University Expedition to Kwangsi*

**F**REQUENT tours across the naturally sculptured, rustic Province of Kwangsi are treasured experiences of a lifelong residence in China's southland. In earlier days we made these trips on a boat towed by ropes and propelled by a treadwheel at the stern, by Chinese pony, sometimes partly on foot or by sedan chair. Now we travel by motorboat, by automobile or bus, even by airway.

We first crossed Kwangsi in the latter days of the Manchu Dynasty, traversing with difficulty its streams and plains. We took few photographs on that early journey, for we were strangers in a strange land. We could clearly demonstrate to the curious onlookers the use of the razor, but to try to explain by word of mouth the use of a camera only intensified suspicion.

In a few short years, conditions have changed greatly. Photographic studios in all the large centers of population have now accustomed all to the use of the camera.

### CROSSING MARCO POLO'S TRAIL

Often on journeys through China we have read and reread the fascinating travelog of China's early Western tourist and resident, Marco Polo. In summer's heat and winter's cold we have crossed and re-crossed a few of the ancient paths this adventurer trod.

According to Marco Polo, we should not refer to all China as Cathay. We should learn to differentiate more clearly the two

distinct areas in China, Cathay, and Manzi, of which the early Venetian traveler wrote.

Cathay in its true sense is only that portion of China which lies north of the great Yangtze and its throbbing life. This land, now pierced by the steel rails of modern commerce, is largely made up of relatively dry, open, flood-swept farming plains. These stretch northward into increasingly bleak, desert areas of camel and caravan trails.

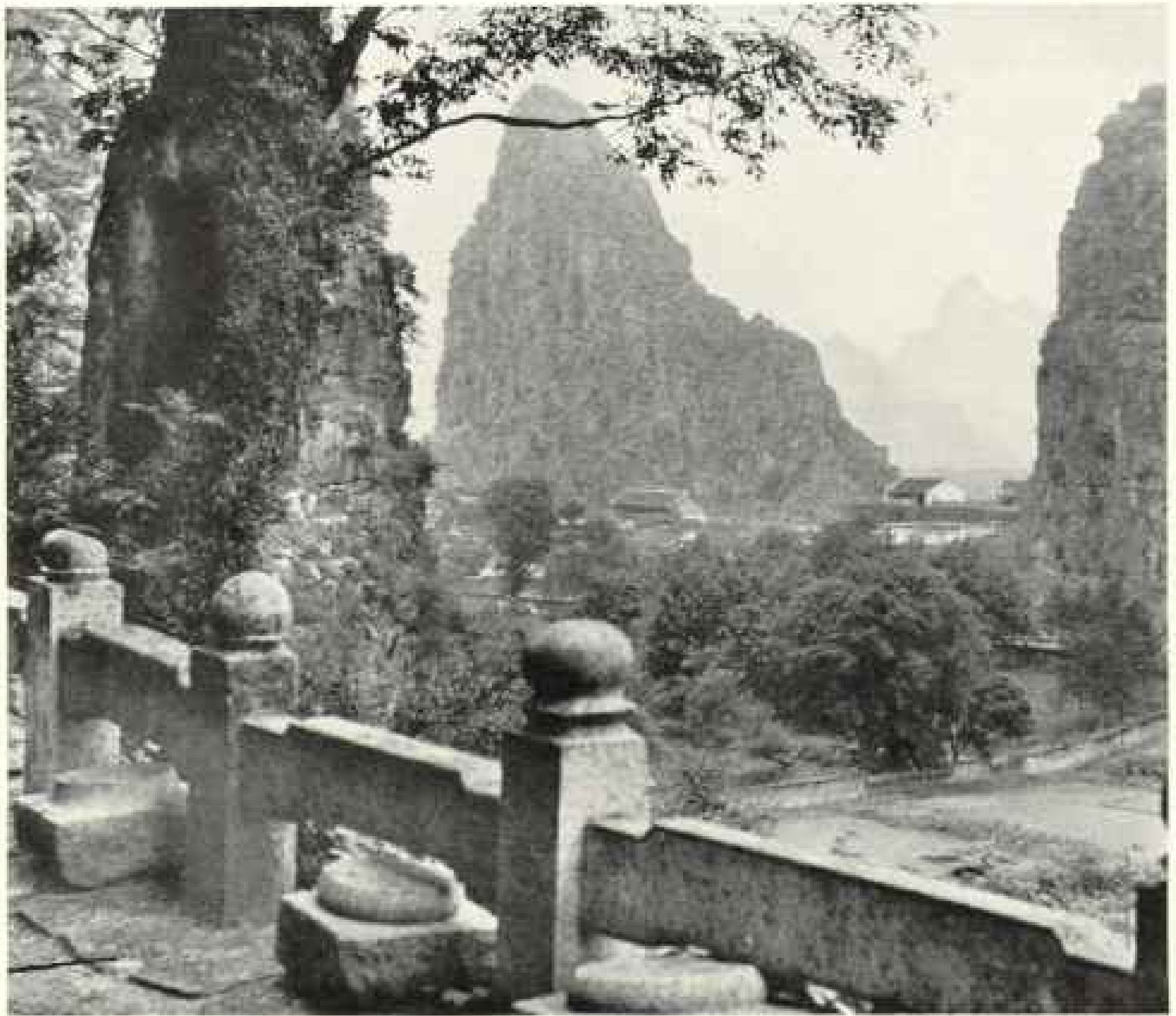
Manzi refers to the domain south of the Yangtze. This southern territory, extending through the coastal provinces of Chekiang, Fukien, and Kwangtung as far as the tropical island of Hainan, is the gardenland of present-day China (map, page 674).

### CANTON, THE DELTA CITY

Along this thickly populated coast are numerous fertile delta areas. Eastward are many other islands, most of which are no longer a political part of the Nation. And inland, to the west, are less fertile, thinly settled rugged hills and grassy plains, which in summer are a delight to bird, beast, and man.

The city of Canton is in the better-known and most influential section of Kwangtung Province, and is the apex of the so-called Canton Delta, formed by the West, East,

\* When Professor Groff, a quarter of a century ago, handed an enterprising Chinese Boy Scout, T. C. Lau, his Graflex camera, and advised him to learn the science of photography, he inspired this young scholar, now a distinguished doctor, to become a master in the art, as the accompanying photographs attest.—THE EDITOR.



Photograph by T. C. Lau

NATURE WAS WHIMSICAL WHEN SHE FASHIONED KWEILIN'S "ROCK GARDENS"

Many pictures by Chinese painters lack perspective, but such precipitous cliffs as those of White Crane and Parrot Hill provide an explanation for portrayals which emphasize only the vertical. Kwangsi Province is studded with these limestone pyramids (pages 680-1, 683, 697, and 700).

and North Rivers as they enter the China Sea (pages 711-726).

At the western end of the base of the triangle is the Portuguese settlement of Macau (Macao). On the eastern side is the rock-ribbed, deep-watered British port of Hong Kong, where the finest ships of all nations meet.

The Cantonese, who inhabit this area, are world-minded. Their forefathers for centuries emigrated to the far corners of the earth and engaged in productive enterprises and foreign trade.

Yet, while the people of the Canton Delta have produced many merchants and traders, they have at the same time been skillful intensive farmers. Within their home area they have developed agriculture to a point where it rivals that of the more renowned Valley of the Nile.

Therefore, in this garden spot, one of the most vigorously cultivated in the world, there abounds a wide range of subtropical fruits and vegetables, some species and varieties of which are only slightly known in the Western World.

#### KWANGSI VIEWS SUPREME

Kwangsi, the subject of this sketch, is practically cut off from the sea. Its people, too, have played a vital part in the affairs of China, but they have not mingled in the world at large as have the Cantonese.

In striking contrast to the lower portions of Kwangtung, the Province of Kwangsi is one of the most thinly settled and seldom visited areas of all China. Vast stretches of fertile land remain untouched, or are semicultivated by the hill-loving, aboriginal tribes known as the Miao.



Photograph by Maurice Fresco from Pix

#### SUDDEN SHOWERS, NOT DUST STORMS, MARK CANTON'S WEATHER

Highlights gleam on buildings and boats, though the atmosphere is still heavy with humidity following a tropical downpour. Canton, south of the Tropic of Cancer, usually has considerable rainfall. The British and French concessions of Shamoen, guarded by barbed-wire entanglements, lie almost opposite this part of the city.

China abounds in strikingly beautiful natural settings, into many of which are projected the widely varied customs of an ancient civilization. But views of Kwangsi remain supreme. Here time and space meet in triumph to produce a masterpiece of Nature's handiwork with rocks and plants.

Along the West River and its numerous tributaries, one marvels most at the strange scenery and at the interesting customs of some of the inhabitants who must gain their livelihood from this great waterway.

The limestone hills in the vicinity of Kweilin, for example, have such fantastic shapes that people who have not seen them hardly believe they exist, even when hearing of them or seeing them in pictures (672).

Chinese scholars from North China, who visited these localities in the old days, returned north with glowing descriptions of

what they had seen, but very little has been recorded in English of the geography and the interesting life of the people along the rivers of this vast drainage area.

Fortunately, modern means of transport now facilitate trips to these parts, and in recent years we have had the pleasure of journeying many times from the coast far up the headwaters of the West River.

#### RICE FIELDS FLANK RAILWAY

To approach the West River, we of Canton usually take the train of a branch railway which proceeds over the Delta westward for 30 miles. Rice fields on both sides of the railway look like a continuous meadow extending as far as the eye can see, interrupted only by villages concealed beneath trees and by long rows of the so-called "water pine" trees.



Drawn by Ralph E. McAtee

SCENIC KWANGSI, NEAR THE COAST, IS ONE OF CHINA'S LEAST KNOWN PROVINCES

It is in the vicinity of British Hong Kong, Portuguese Macau, and the French possession of Indo-China. Quaint river life, cormorant fishing, fry catching, lofty chain bridges, curious plants, and unique rock formations are highlights described and photographed in many exploratory trips through this Nature-sculptured wonderland of landscape marvels and strange human habits. The area is in the heart of Marco Polo's *Manzi*, his name for southern China as distinguished from *Cathay*, to the north of the Yangtze (page 671).

At a point where two rivers meet we go aboard a West River steamer coming from Hong Kong, and about 30 miles farther upstream arrive at the renowned Ting Woo Mountain. There a large Buddhist monastery perches on a thousand-foot height.

This monastery, which shelters some 300 monks, is visited continually by Buddhist pilgrims from all parts of the Province. The waterfalls and the ziggzag mountain road with 13 turns always attract city dwellers.

A few miles above we pass through the Shiuhing Gorge and in an hour reach the city of Shiuhing, once the capital for both Kwangtung and Kwangsi. There a viceroy was stationed until the early part of the last dynasty.

Not far from the city are famous marble caverns known as the "Seven Stars" and oddly shaped marble hills dotted with temples and pavilions. There are stalag-

mites and stalactites and an underground waterway which boats can enter.

In one of the Ming period temples are Buddhist statues made of cast bronze, fully ten feet high and each weighing many tons.

The mirrored lakes around these marble hills reflect the pointed peaks, and floating clouds increase their attractiveness.

#### THE FRY-CATCHING INDUSTRY

Above the Shiuhing Gorge there is a fascinating industry of fry catching. Fishermen find profitable employment at certain seasons by trapping the fry in the river and selling them for fish culture elsewhere. There are numerous places along this section of the West River where these fry catchers operate, especially in the early spring when the fish are hatched out and are found swimming about in large schools.

Country people have so long studied the



Photograph by Ming Yuen

## LONG LIVE KING GEORGE VI!

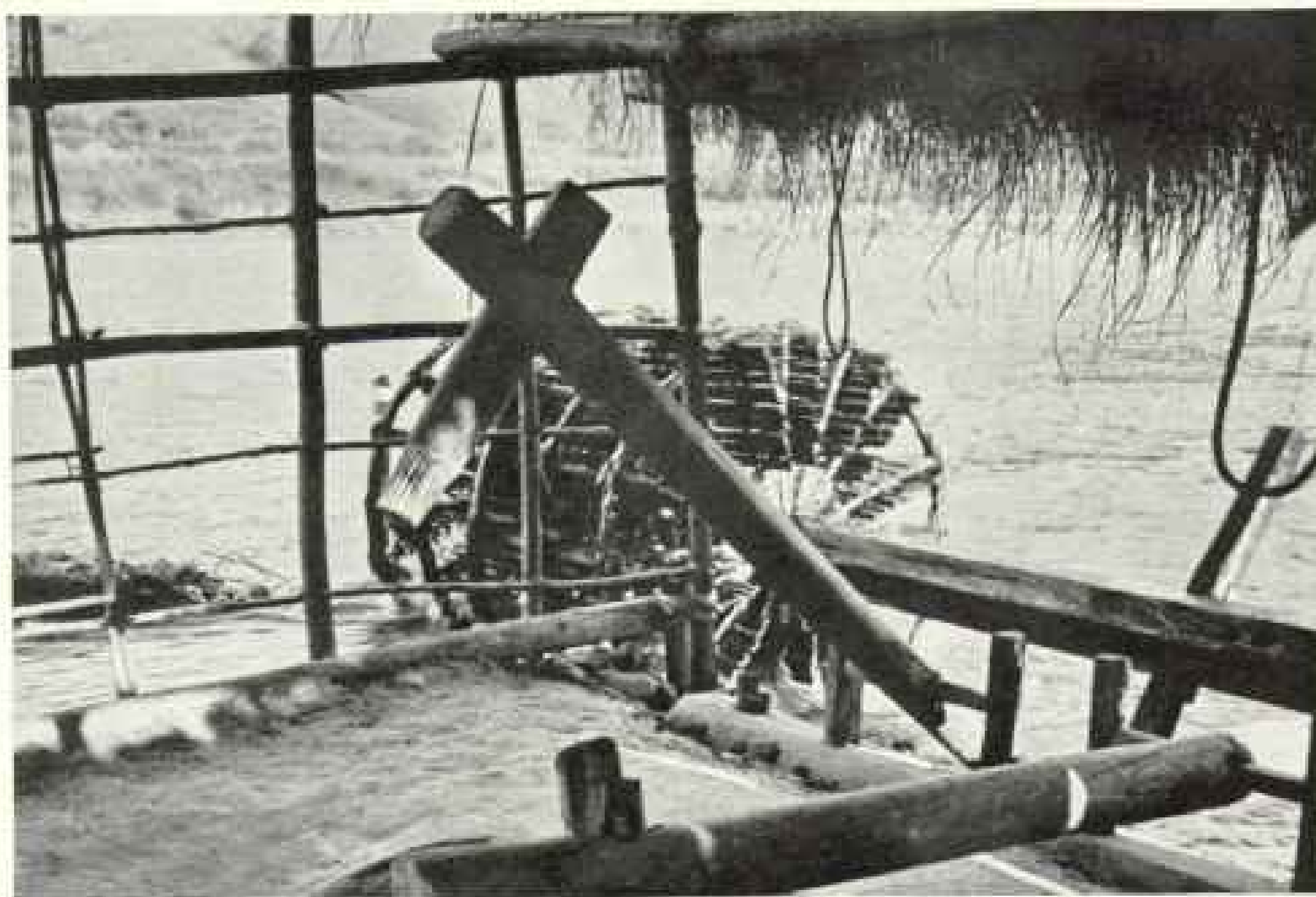
Thus the large Chinese population of British Hong Kong is demonstrating its loyalty on Coronation Day, May 12, by dragon dances through the streets (page 714). The island, ceded to Great Britain following the so-called "Opium War" of 1841, has become an important commercial outpost and transshipment center. To Hong Kong proper have been added Kowloon and New Territories by lease from the Chinese. The whole area has nearly a million inhabitants.



Photograph by Suker Marx

#### TO PLANT RICE, WOMEN WADE KNEE-DEEP IN MUD

Much of the rice cultivated in South China is grown first in small beds, and the slender seedlings then are transplanted into the fields which have been churned into an oozy porridge of mud. Primitive wheels or scoops, operated mainly by hand or foot power, generally are used for flooding and irrigation. Freshly set plants are seen beyond the workers.



Photograph by T. C. Lau

#### KWANGSI FARMERS HARNESS THE RIVER TO POUND RICE

The swift current turns the bamboo water wheel, the shaft of which is fitted with pegs that lift and drop the long pestle arms. As these heavy wooden pestles fall, they husk and polish rice contained in wooden or stone mortars. One of the pounders is raised; the other has just fallen.

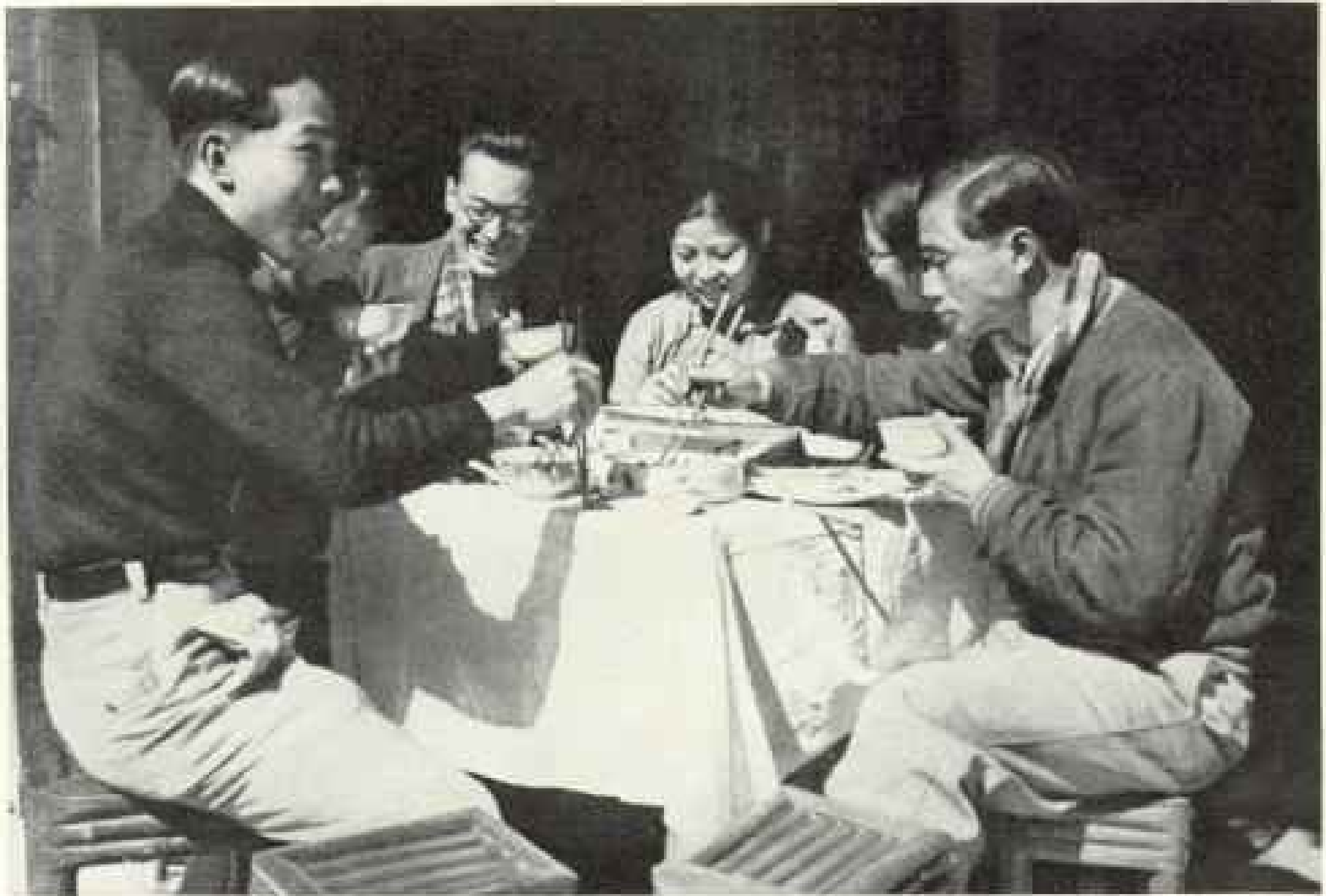


Photograph by T. C. Lau

**A BAMBOO WATER WHEEL APPEARS LIKE A GIANT SPIDER WEB**

Creaking and groaning as it turns in the swift current, it lifts water 30 feet above the stream to irrigate fields and vegetable gardens. Long bamboo cups which dip up the water and dump it into troughs are placed at an angle along the outer rim of the wheel; two at the top are emptying. The river has been dammed so that the flow at low water is directed into a sluice beneath the wheel.





Photograph by G. Weidman Groll

THE BEST PART OF A FIELD TRIP IS COLLECTING—LUNCH!

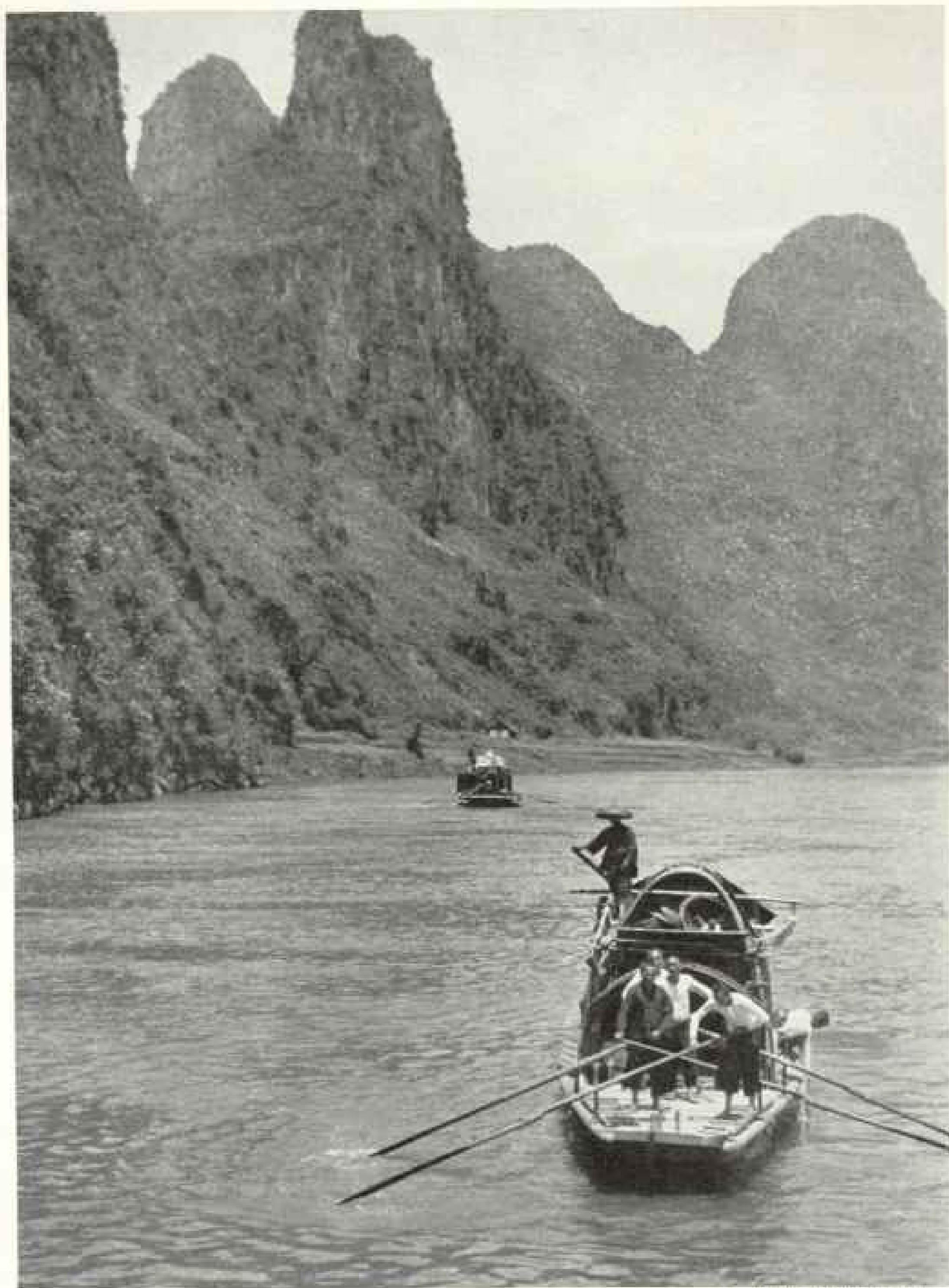
This happy group of Chinese students is eating in family style—rice in the bowls and the meat or fish in common dishes from which they serve themselves with their chopsticks. The chairs are made of bamboo.



Photograph by W. Robert Moore

MEN WIELD THE NEEDLES THAT MAKE CANTON'S EMBROIDERIES

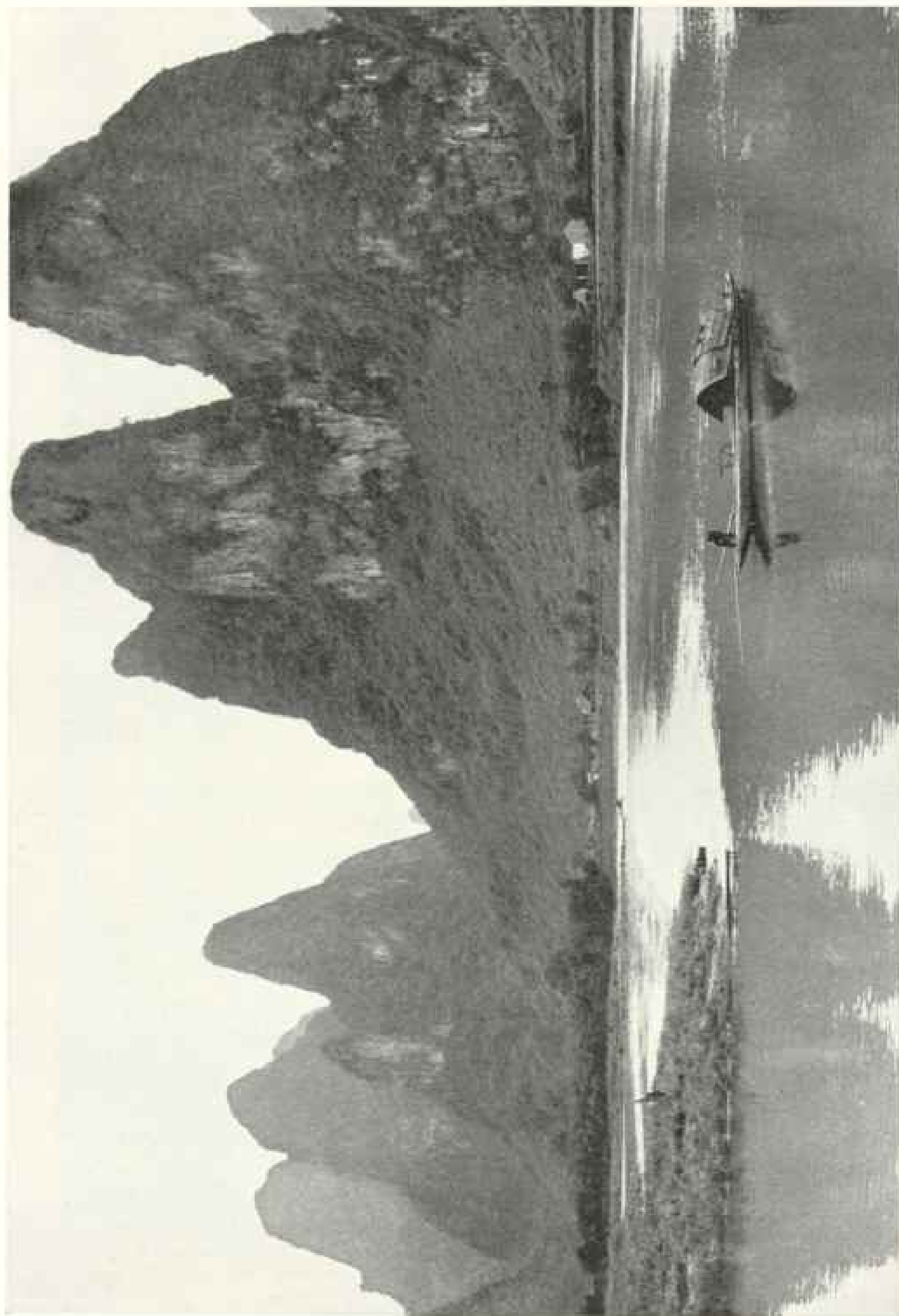
Working over intricate patterns in tiny, ill-lighted rooms, boys and men often impair their eyesight. This artisan's crude spectacles were probably chosen after trying on many pairs of cheap handmade ones.



Photograph by T. C. Lee

"RICE POWER" PROPELS THESE HOUSEBOATS IN KWANGSI PROVINCE

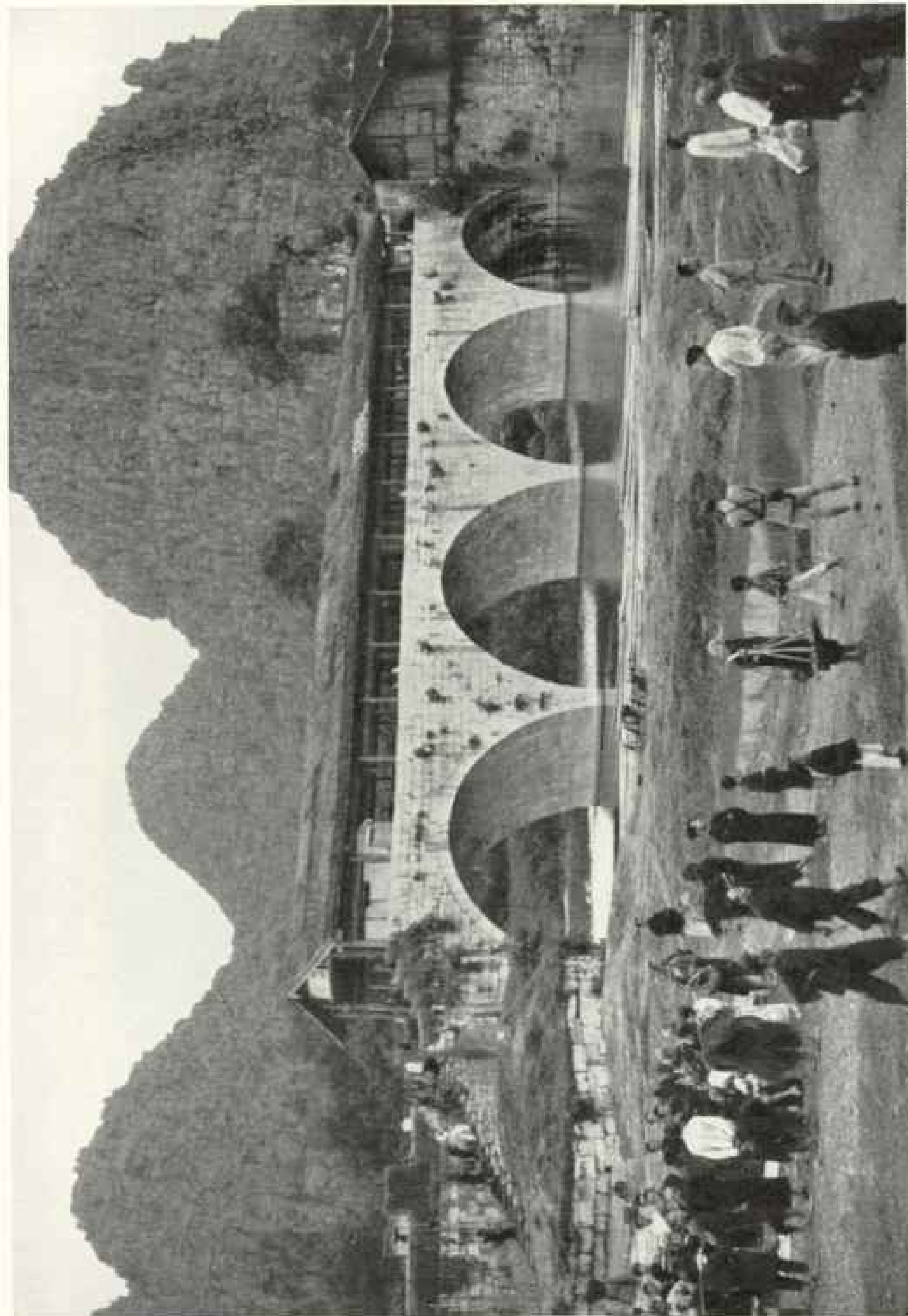
Traveling downstream in deep waters, the crew rows with long-handled oars on the prow while the captain handles the rudder from a lofty perch astern. In shallow stretches the boats are pushed and guided by poling. The river is known as the Kwei, or Cassia, so named because cassia trees, which yield Chinese cinnamon, are common along its shores (pages 680 and 685).



Photograph by T. C. Lau

A WONDERLAND OF PINNACLED PEAKS THRUSTS ABOVE THE KWWEI RIVER

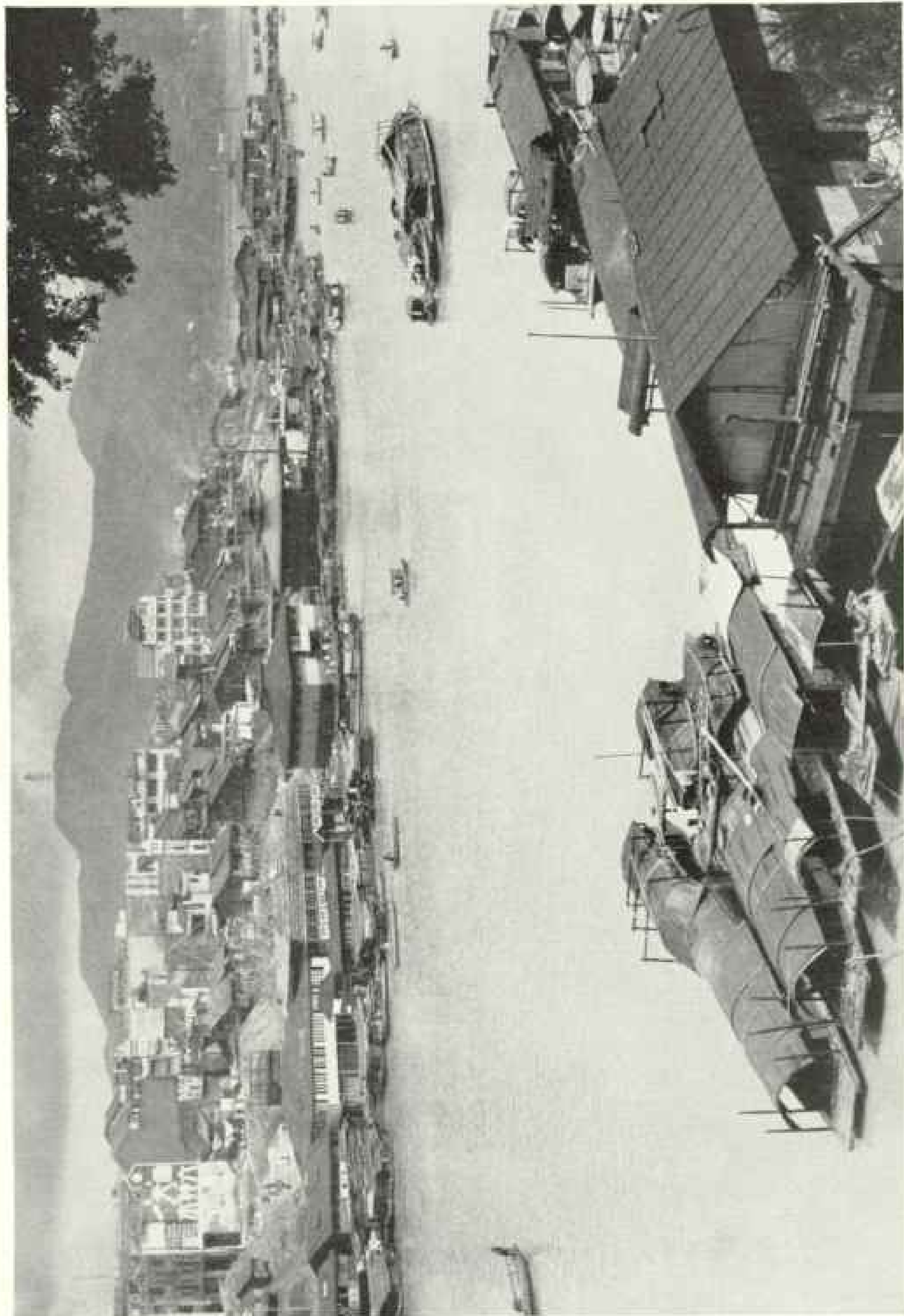
In these hills, between Kweilin and Yangso, are numerous grottoes filled with beautiful stalagmites and stalactites. Modern roads now speed travel into Kwangsi; during low water the upriver passage between Wuchow and Kweilin, 140 miles, may require two or three weeks (pages 679 and 685-6).



Photograph by T. C. Lau

THE FLOWER BRIDGE OF KWELIN IS ONE OF THE FEW COVERED BRIDGES IN SOUTH CHINA

Its stone arches, like others throughout the country, have borne traffic for centuries. Small crowds, such as the one at the left, often gather to watch the antics of wandering entertainers or to listen to medicine takers extolling the virtues of cure-alls they have concocted.



Photograph by T. G. Lau.

DURING FLOOD SEASONS WUCHOW BECOMES AN ORIENTAL VENICE

River travelers may have to climb steep banks or be ferried directly into their hotel, depending upon the time of their visit (page 686). The water levels of summer and winter vary 60 feet. The Kwei River joins the yellow waters of West River near the floating wharf (right).



Photograph by T. C. Lau

ONLY A CRESCENT BRIDGE OF BOATS LINKS THE TWO BANKS AT KWELLIN

Bowed by the current, they are held in place by anchors and chains. One portion of this pontoon structure can be opened to allow river traffic to pass. The east gate of the city is just beyond the far end of the bridge (page 686).



A KWANGSI FARMER TURNS HOMEWARD FROM HIS FIELDS AT SUNSET

He guides his faithful water buffalo by sitting on its back rather than riding the high-wheeled cart. The rein is a single rope fastened in the animal's nose.



Photographs by T. C. Lau

THEIR GUNS MAY BE PRIMITIVE, BUT THEY ARE GOOD HUNTERS

Only one of the locally made long-barreled shotguns has a shoulder stock; the others have pistol or hand grips for holding when fired. Powder is carried in horns. Pheasants, other fowl, and a variety of game abound in Kwangsi. A trained mongrel assists the hunters.



Photograph by T. C. Lau

#### A TORTOISE COULD OUTDISTANCE THIS CRAFT ON THE KWEI RIVER

Sails are of little use going upstream through the rapids. The current is so strong that the crew is warping the junk upriver by turning the capstan and hauling in a rope attached to a tree on shore. Progress is often so slow that after a day's journey the cook can walk back to the previous encampment to buy food for supper (page 686).

habits and habitats of the fish that they say they know the movements of the fry merely by examining the water or by watching the sky at night. Rapid lightning in the upriver section of the sky, they say, indicates approaching activity of the fish.

When conditions are right, they bait their close-woven nets with yolks of eggs and cast them into the stream. Fish attracted to the net by the bait are caught and promptly removed to large earthenware jars. In these containers they soon find their way to the low portions of the Delta to dealers who are eager to rear them.

While these delicate fry are being transported, the water in which they are kept is continually stirred; thus sufficient oxygen is provided to insure their arrival in good condition. The fisherfolk know the dif-

ferent kinds of fish even in the infant stage and are able to sort them out quickly, although the fry average less than a tenth of an inch in length.

It is a 12- to 15-hour trip by steamer from Shihing westward to Wuchow. En route, we pass Monk's Head Rock, a perpendicular formation on the top of a hill rising well over 700 feet above the river.

The banks of the river from now on are less cultivated than farther downstream, and there are many trees.

#### A WHITE-PAINT BORDER LINE

Coming to a point on the left bank of the river, we see near a creek a huge tree marked with white paint, the white line extending to a rock jutting out in the river. This mark is the border line between



Kwangtung and Kwangsi. Up to this point the river is almost a mile in width.

Upstream we notice numerous long, narrow baskets. These are fishing traps, as indicated by the flotilla of fishing boats scattered along the stream. It is evident that fish are abundant in these waters. At last Wuchow appears ahead on the horizon, like a white dotted line along the water's edge, under the green hills.

Wuchow, the chief commercial city of Kwangsi Province, is clean and attractive, with wide asphalt-paved streets and many multi-story buildings. It has a modern city water plant, an efficient electric-supply system, and many other municipal improvements (page 699).

#### A HILL CITY BECOMES A VENICE

A visitor arriving at this populous city in the dry season must climb a hundred or more steps from the landing wharf to reach the bund. In the flood season, however, small boats may take him direct to his hotel, where he can enter through a second-story window (page 682).

Walking along the streets during normal times, one is puzzled to see, ten feet above ground, anchoring rings attached to the pillars of the buildings. These are used for fastening boats to the house entrances when Wuchow turns temporarily into a Venice, as it may do several times every year.

At Wuchow the Kwei River, which originates in the north, beyond the city of Kweilin, merges into the West River.

Instead of proceeding westward up the main course of the West River, suppose we take a side trip up the Kwei River to Kweilin. If it is summer and the water is high, we can take a motor launch upstream, reaching Kweilin in four or five days. But if we should attempt to make the journey when the water is low, small boats must be employed, requiring 18 days to Kweilin, or longer.

In 1923, when Dr. Sun Yat-sen inaugurated his northern expedition, it took him more than 17 days to go from Wuchow to Kweilin.

A newly constructed highway which can be traversed in only a few hours now connects the two cities, but the boat trip from Pinglo is preferable because of the beautiful scenery along the Kwei River.

If the summer monsoon is with us, sails may be set to facilitate progress; but when

the wind is against us upstream travel is slow and laborious. Boats must then be towed by men toiling along the towpaths of the river.

Beside these foot trails we see solid rocks grooved almost a foot deep by the friction of the towropes which have been hauled over them for centuries.

When the boats moving upstream come to rapids, towing is not sufficient to counteract the force of the current. Then it is that the crew must tie a rope to a rock or to some other solid object in the rapids or on shore (page 685).

At the bow of the boat this rope is hitched to a large capstan, and the men who formerly towed now come aboard and turn the capstan in a merry-go-round fashion until the boat is finally raised to a level above the rapids. This process must be repeated again and again as we proceed up the stream.

#### A SNAIL'S PACE IS DIZZY SPEED

Kweilin, 140 miles above Wuchow, is about 650 feet above sea level. Between the cities the boat with cargo and passengers must be hoisted some 500 feet. How can the process be anything but slow, if only "rice power" is employed?

At certain places along the way a boat may start soon after breakfast, work its way all day upstream, and at sundown be so short a distance from the point of departure that servants of the passengers may actually walk back to buy food for supper, and return in time to cook it.

Because it is rather monotonous to travel thus in a boat for more than a week, we may go ashore by day and walk ahead of the men towing. We may visit interesting places en route, have tea in one of the market towns, or sit under the shade of some large trees and watch other boats climbing upward or shooting downward over the rapids. At sunset we rejoin our boat for supper and the night's rest.

The hills along the sides of the Kwei River below Pinglo are not unlike hills elsewhere; above that town we enter the fantastic limestone formations of Kweilin (pages 672, 680, and 683).

People of the United States speak often of Manhattan Island's zigzag skyline. In Kweilin, too, the skyline is unique. At Yangso, where a climax of strange geological formations is situated, it could easily be associated with the crazy curve on the

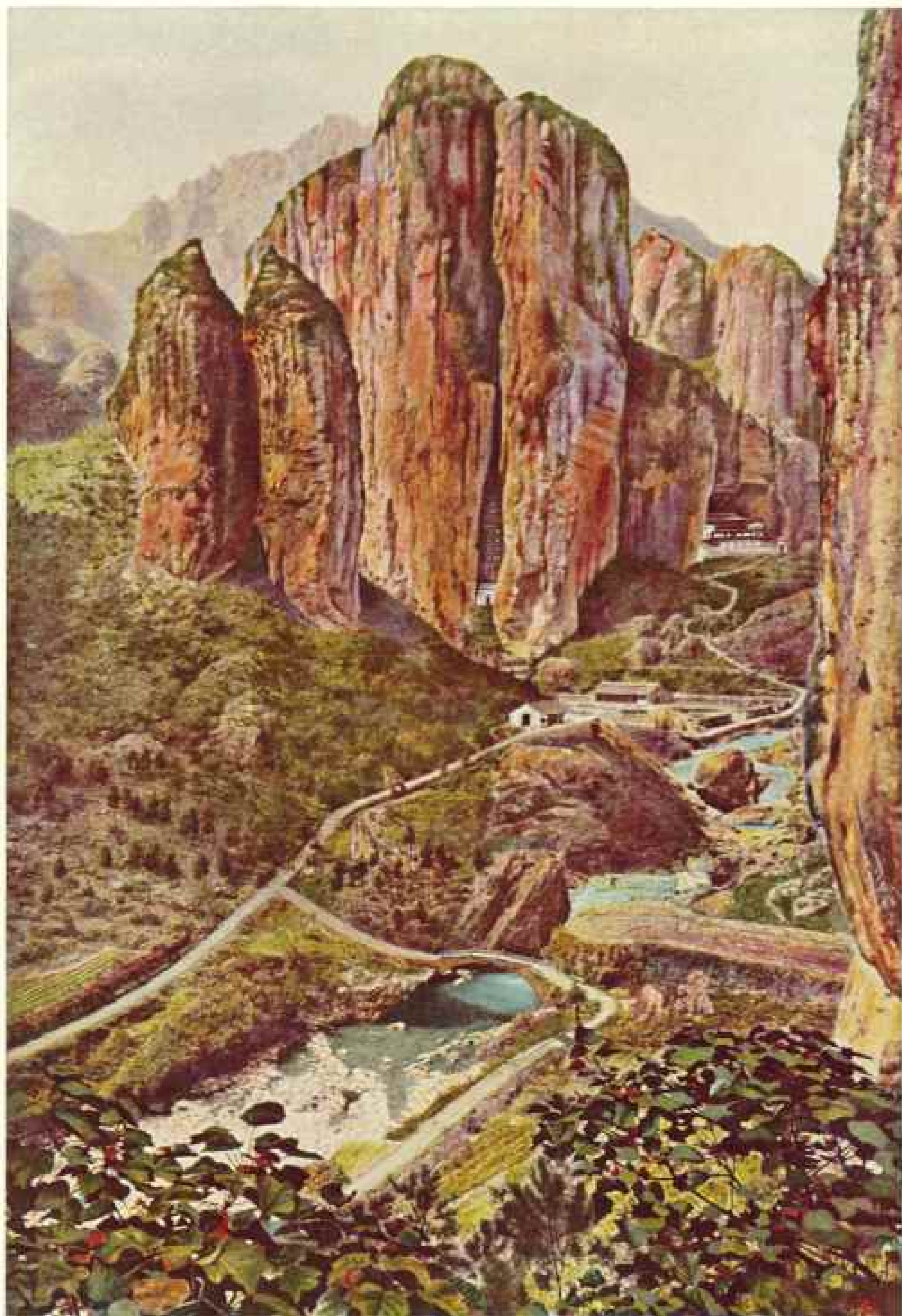


© National Geographic Society

Camera Painting by Herbert Clarence White and Deng Bao-ling

LACY, FINGERLIKE BAMBOO LEAVES SCREEN THE WU RIVER

In southern Chekiang Province, 200 miles south of war-torn Shanghai, is the vast natural park of Yen Tang Shan, virtually unknown to foreigners. Mr. White's photographs of its spectacular cliffs and peaceful temples were specially painted by the artists Deng Bao-ling and Hwang Yao-tso.



© National Geographic Society

Camera Painting by Herbert Clarence White and Hwang Yao-tsu

TEMPLES OF TWO FAITHS NESTLE IN CREVICES OF THE "VIRGIN FAIRY" CLIFF

The ten-story Buddhist "skyscraper," in the narrow cleft, fronts on Two Projection Peak, which serves as the pair of candlesticks that usually flank the entrance to Chinese shrines. At the Taoist monastery in Pole Star Cave (right), the photographer's party stayed in guest rooms provided for pilgrims.

CHINA'S WONDERLAND—YEN TANG SHAN

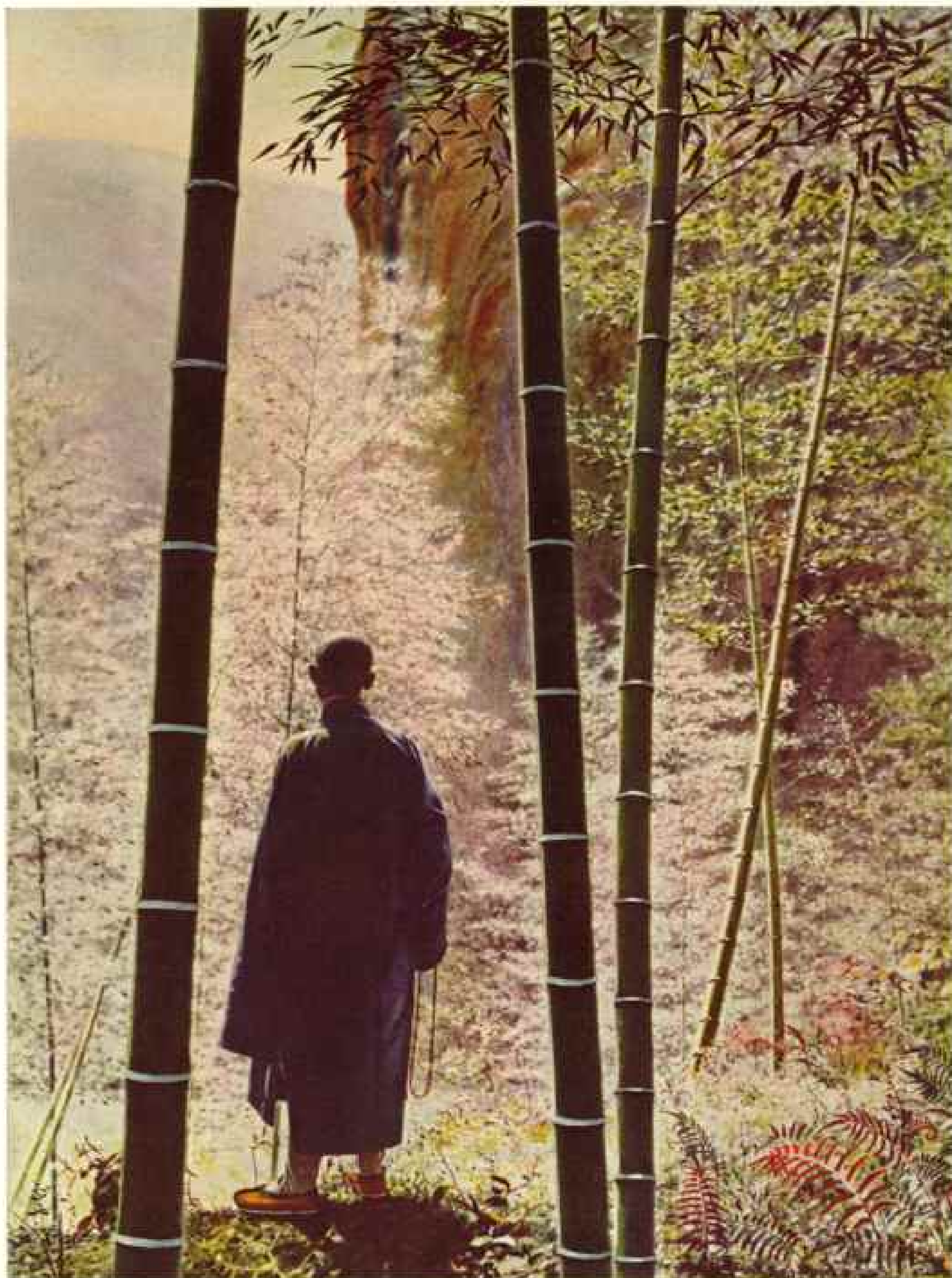


© National Geographic Society

Camera Painting by Herbert Clarence White and Deng Iuo-ling

LIKE A LIFTED BAR AT THE VALLEY GATE STANDS THE PEAK OF THE AZURE SKY

A winding stone pathway beside golden rice fields leads past the brown limestone cliff and through the mountain pass which connects the Virgin Fairy temples with the adjoining Valley of the Southern Gateway. Yen Tang Shan was a favorite resort of China's emperors, poets, and painters more than 1,000 years ago.



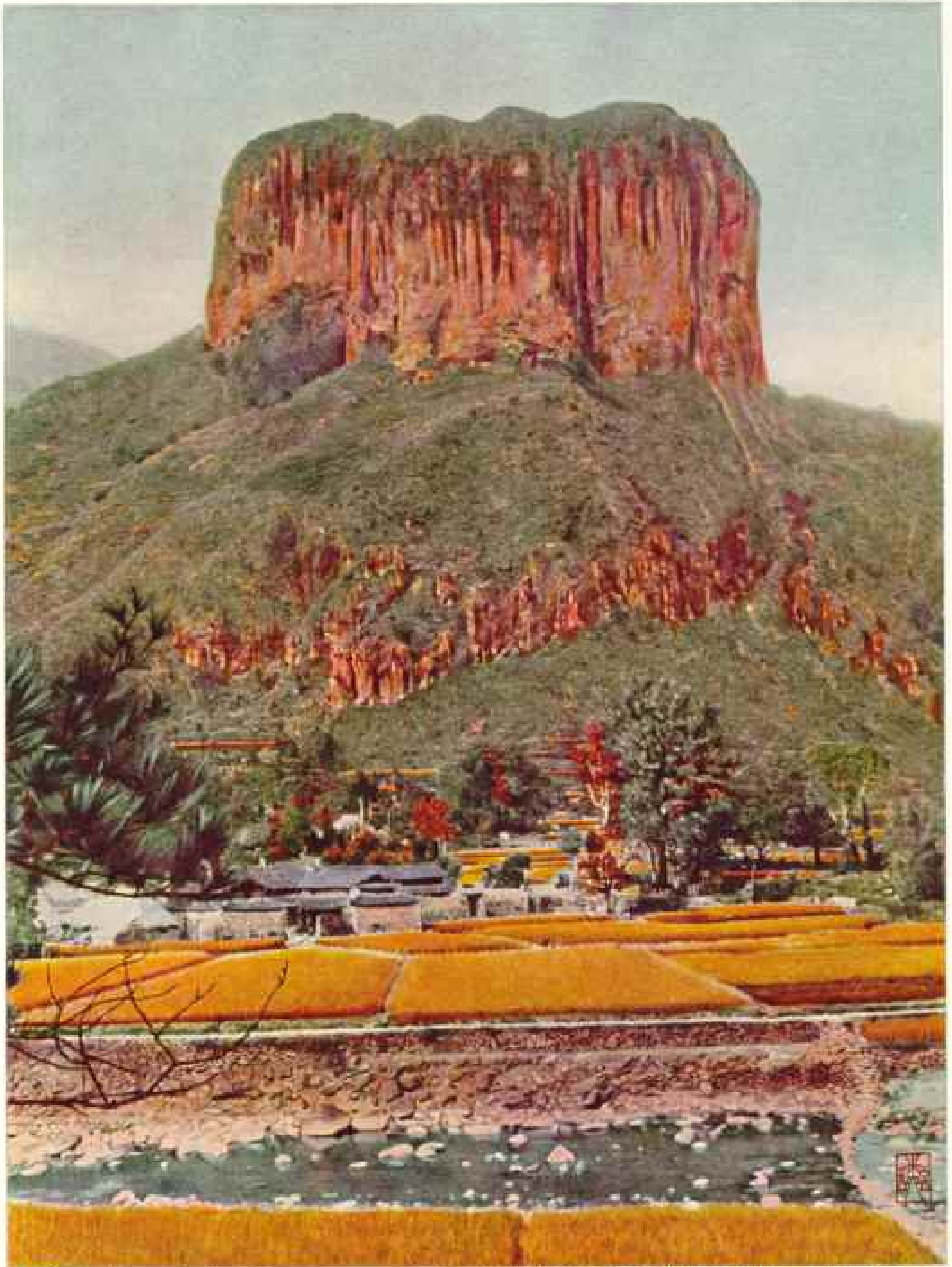
© National Geographic Society

Camera Painting by Herbert Clarence White and Hwang Yuo-tso

MORNING SUNSHINE LIGHTS UP THE BAMBOO AS A YOUTHFUL ABBOT MUSES

A modern Chinese pilgrim describes life at Spirit Mountain Monastery: "Having dug some bamboo shoots to eat, we warmed up our wine (for lunch). Then we spent a quiet afternoon drinking tea and writing poems. This joy is indescribable!"

CHINA'S WONDERLAND—YEN TANG SHAN



© National Geographic Society

Camera Painting by Herbert Clarence White and Deng Bao-ling

LIKE A GIANT CITY WALL, DOUBLE SCREEN PEAK PROTECTS A TINY VILLAGE

The towering mass of rock takes its name from the fact that a deep crevice, its opening barely visible at the left, divides it into two distinct ramparts. This community, with its gray-tiled stone houses, golden-ripe rice fields, and mountain stream, is a picture of prosperity and peace.

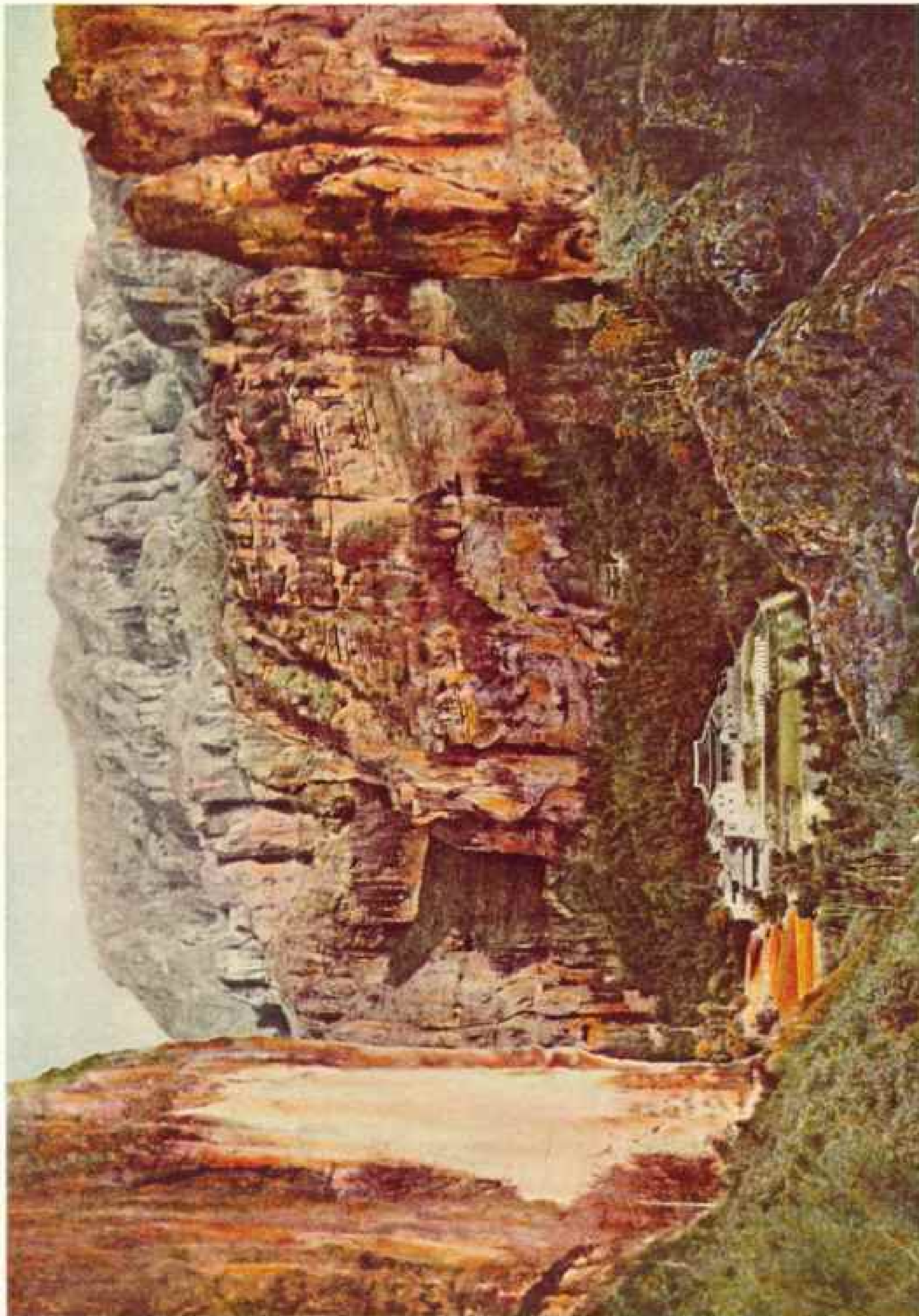


Camera Painting by Herbert Clarence White and Deag Bao-hing

**FRUIT BASKET BRIDGE IS PARTLY NATURE'S WORK, PARTLY MAN'S**

Engineers who built the graceful "rainbow" arch took advantage of an overhanging rock on the left side. The "Fruit Basket" (right center) is a smooth flat stone shaped like a mammoth tusk. Farmers for centuries have used it as a threshing floor.

© National Geographic Society



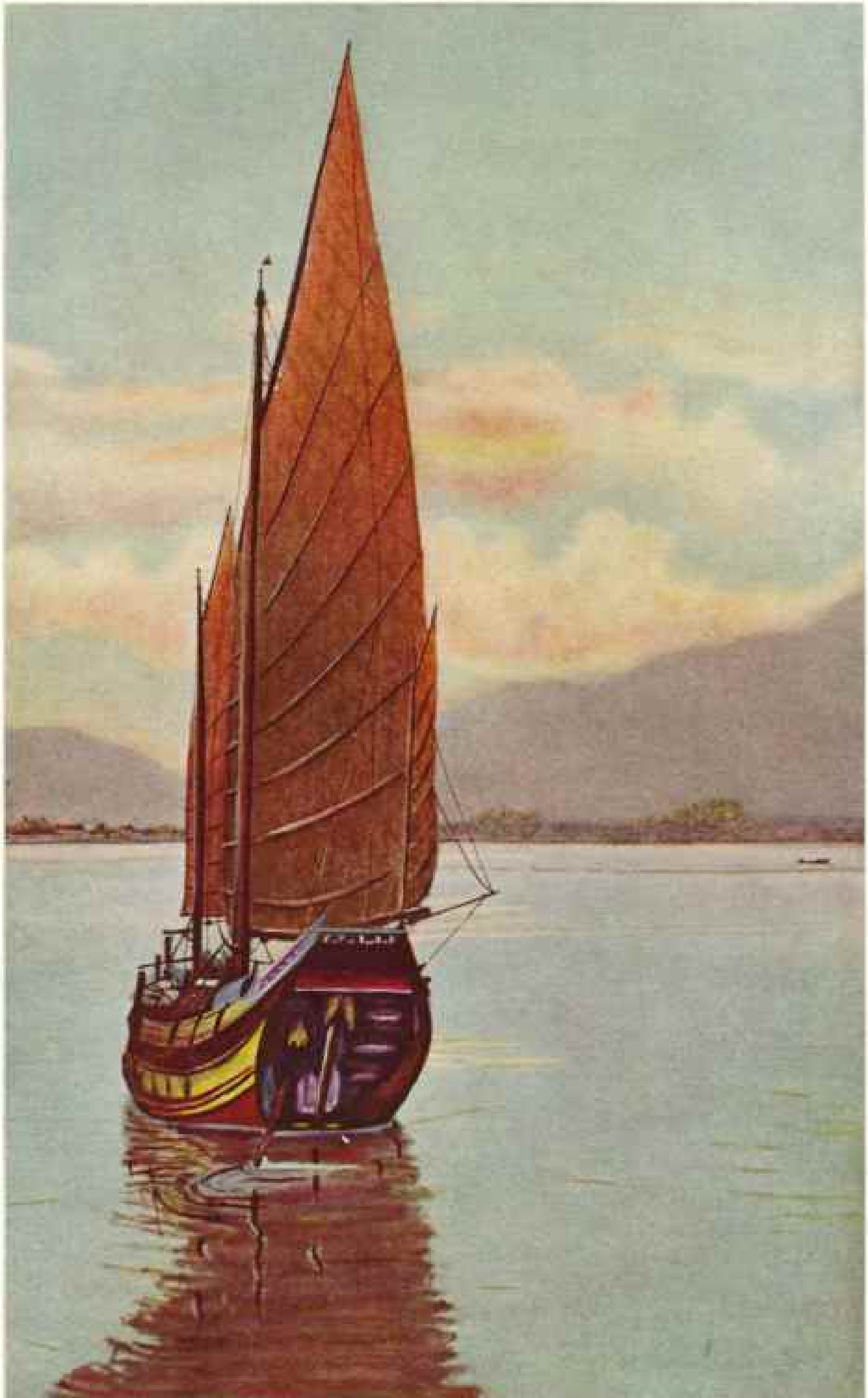
© National Geographic Society

Camera Painting by Herbert Clarence White and Deng Bao-ling

"FIRST UNDER HEAVEN." THE MONKS OF SPIRIT MOUNTAIN MONASTERY CALL THEIR ROCK-ENCIRCLED TEMPLE.

A sudden turn in the stone highway brings travelers face to face with two guardian ramparts: The Pillar that Bears up the Sky (left) and the Great Flaglike Peak (right). Waving groves of bamboo surround the hospitable shrine, where Mr. White and his party spent a delightful week.





© National Geographic Society

Camera Painting by Clarence C. Crisler and Hwang Yao-tso

BROWN SAILS RUSTLE, AS A FOOCHOW JUNK GLIDES UP THE MIN RIVER

temperature chart of a violent fever case.

Some of the hills are conical; others are pointed; still others have holes near their peaks; and some of them overhang.

They are strangely arranged, too. Some observers describe them as bottles of different shapes and sizes standing at random on a floor. Others say they look like chicken croquettes on a silver platter.

Although some of them may look like church steeples and others like modern skyscrapers, we know of nothing in the world to which one can compare them. The Dolomites of Central Europe are far less acute, and the islands by the sea at Baie d'Along in Indo-China seem inadequate imitations of them.

These strange hills at Kweilin sometimes reach nearly a thousand feet in height and extend almost a hundred miles.

In western Kwangsi, too, are numerous oddly shaped limestone hills covering extensive areas.

Along the Kwei River the jade-green water meandering through the hills increases their beauty. The rich green vegetation on these hills, with a background of limestone ranging from gray to red in hue, exposes patchy designs. Perpendicular cliffs with water falling over them and stalactites under them are also interesting.

We see singing birds as small as a man's thumb, and fish in clear water pursued by fishing cormorants.

The well-preserved old temples on the hills and in the caves are charming. River boats, with graceful sails set, struggling up the river, and others shooting the rapids downstream never fail to attract beholders.

#### A CANAL OF THE GREAT WALL PERIOD

Proceeding upstream above the city of Kweilin for about 30 miles, or covering the same distance by motors on a new road, we soon reach the Imperial Canal at the great divide which separates the Yangtze and the West River systems.

This canal connects the Siang River of Hunan Province with the Kwei River of Kwangsi, the former flowing northward toward the Yangtze River and the latter southward toward the China Sea.

One can start from Canton by boat, sail up the West and Kwei Rivers to this canal and, passing through it, proceed down the Siang River to the Yangtze, thence to the Grand Canal to even as far as Peiping without once getting off the boat.\*

In bygone days before railroads and motor highways, this elaborate canal was of great aid to China's transport and unity. Two centuries before Christ it was under construction, being the far-seeing project of the great Emperor Chin Shih Huang Ti, who built China's Great Wall.

After visiting Kweilin we may return to Wuchow by boat, going down the way we came, or we may take the land route by motor. From Wuchow we start westward, up the main course of the West River.

Proceeding for about 15 miles, we soon encounter relatively narrower and shallower water, with numerous rocks projecting from the stream. Boats sailing up and down this portion of the river have a hard time finding their way among the rocks.

Here, too, are stone piles built by human hands on the rocks in the midst of the river. The scene looks like a submerged cemetery, with tombstones sticking partly out of the water.

These stone piles, sometimes 20 to 30 feet wide and high, stand in groups of eight or ten. Known as "fishing piles," they represent a practice of the fisherfolk peculiar to Kwangsi (page 702).

#### FISHING PILES VALUABLE REAL ESTATE

Fish in swift water generally swim against the current. They may thus struggle for hours at a time until they find a place where the water is quiet.

Under the lee of natural rocks in the river or below such artificially built fishing piles, a large number of fish will congregate at times and may easily be caught in nets.

Fishermen stand on these piles, cast their nets continually, and catch all they want.

Although these spots are mere mounds of stone in the middle of the river, good ones are actually worth more than many a dwelling house in the same locality.

A good fishing pile may be worth to the owner as much as \$5,000 in local money. Such clumsy property actually has land deeds of ownership, and changes hands in legal ways like any other property.

Cormorant fishing is practiced with marked success in Kwangsi. The cormorant is a black bird larger than a duck and smaller than a goose, with a long hook-like beak and a throat in the form of a

\* See "Grand Canal Panorama," by Willard Price, in *THE NATIONAL GEOGRAPHIC MAGAZINE* for April, 1937.



Photograph by T. C. Lau.

#### IT'S WIDE BRIMS THIS SEASON

In fact, they have been worn every season for centuries among the peasant women. Styles vary only with the locality. The young girl is dressed in the costume typical of the region a few miles north of Canton.

large bag. It looks somewhat like an oversized kingfisher and feeds only on fish.

The cormorant fishermen, who usually go out for their prey at night, place these birds on unsinkable rafts, 15 feet long by 3 wide, and consisting of four or five large pieces of bamboo (page 705).

Along the waterways in Kwangsi, one often sees several such craft coming out together from their shelters, with five or six cormorants and a fisherman on each.

As they get to the middle of the stream, one of the birds may suddenly shoot off ahead of the rafts much as a naval plane

takes off from a carrier ship. Other birds may follow.

They fly close to the water and let their feet scratch the surface, making white wakes behind them, in the manner of wild geese.

They all alight on the water perhaps 100 feet away from the rafts and swim around in a group like ducklings, paying no attention to their masters and receiving no attention from them. They are absolutely free. One may lose sight of some of them, for they often dive for as long as a minute at a time.

Then suddenly one of them rushes back to a raft with the tail of a fish sticking from its mouth. The metal ring that has been previously fixed around the lower portion of its neck by the fisherman prevents the bird from swallowing the fish.

After a capture the birds hop jubilantly back to the raft, the fish are gently removed from their mouths, and they rejoice in the victory by feasting on some smaller fish given to them by their master.

#### CORMORANTS HAVE TECHNIQUE FOR DISABLING FISH

Sometimes several cormorants join forces in chasing a large fish. Such birds are intelligent.

They start the struggle by pecking first at the fish's eyes, blinding it; then pecking at its fins and tail until, quite unable to escape, it is easily driven to the side of the raft, where the fishermen land it with a net.

A cormorant may weigh as much as six pounds.

How large a fish, do you think, can be captured by these birds? A victorious fisherman recently informed us that he had a record catch not long ago of a fish weighing 63 pounds. This was of course the result of the work of several cormorants in cooperation.

The cormorant fishermen treat their birds like members of their own family.

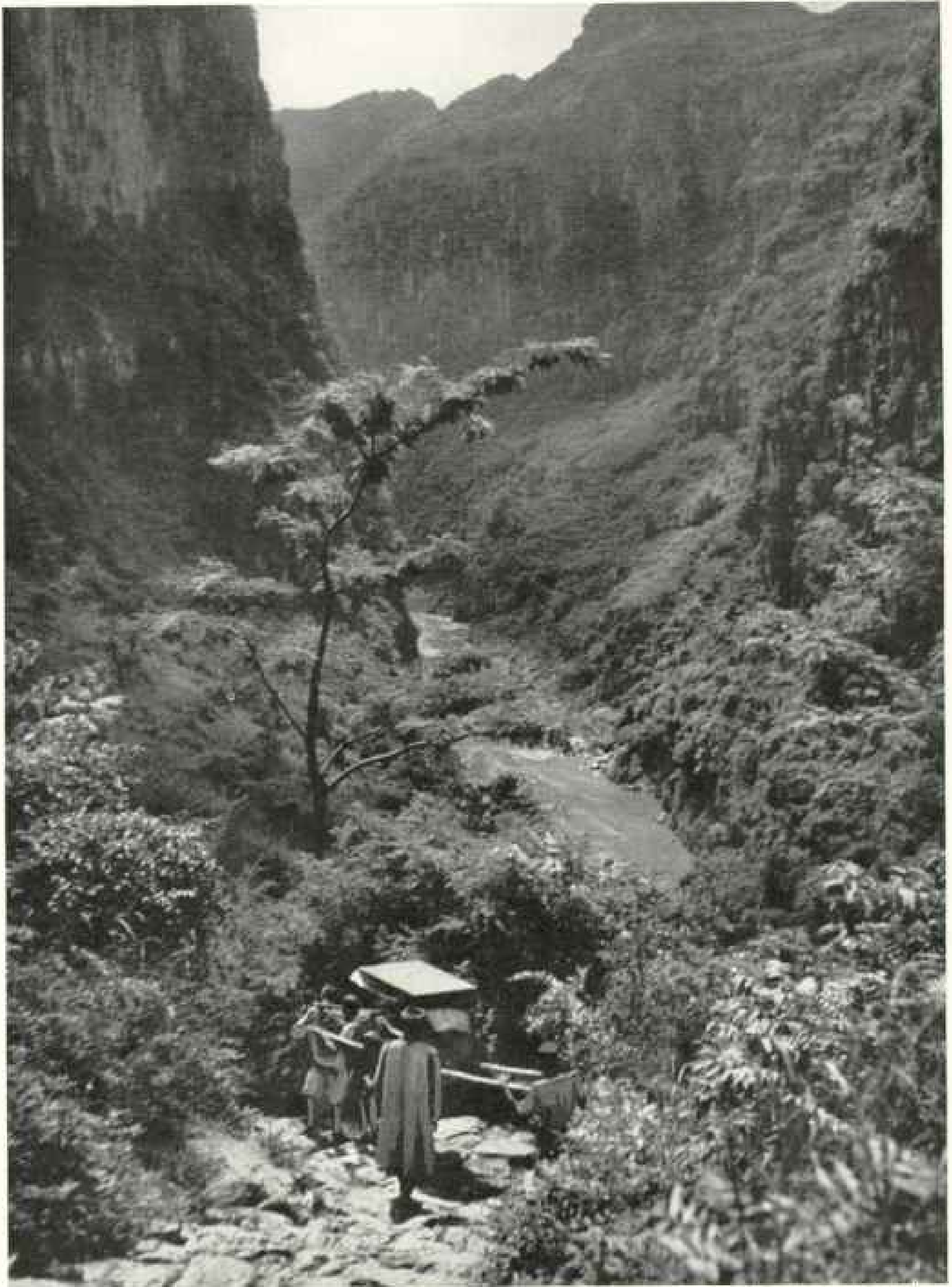
When a nest of cormorants is hatched, an announcement is sent out by the owner to his relatives and friends, informing them



Photograph by T. C. Lau

**PAGODA HILL IS A MASSIVE COLUMN OF LIMESTONE**

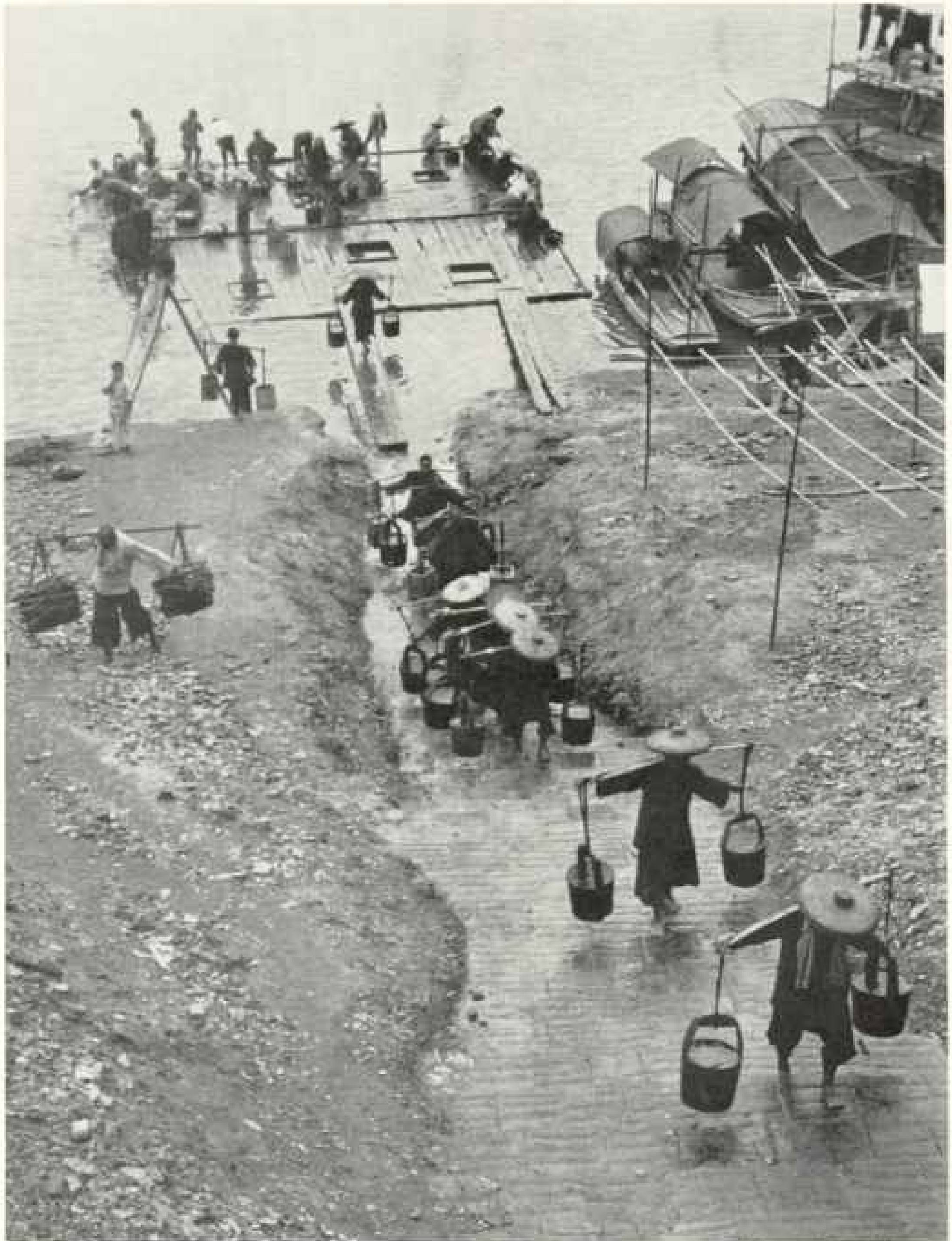
Because these rocks in central Kwangsi rise directly from the plain and are separated from each other, a Chinese poet, Fan Shih-hu, has compared them to young bamboos springing from the ground. Within the shadow of the hill, farmers are transplanting young rice seedlings into a flooded field.



Photograph by F. C. Lau

## CANYON LAND OF KWEICHOW MAKES ROUGH RIDING FOR TRAVELERS

There is hardly room for a sedan chair, borne by two carriers, along the narrow trail that leads into the 2,500-foot gorge. A whole day is required to make the zigzag descent, cross the chain bridge suspended over the Hwa Kiang (page 710), and ascend on the opposite slope. Kweichow Province is more "inaccessible than Yunnan and less known than Tibet."



Photograph by T. C. Lau

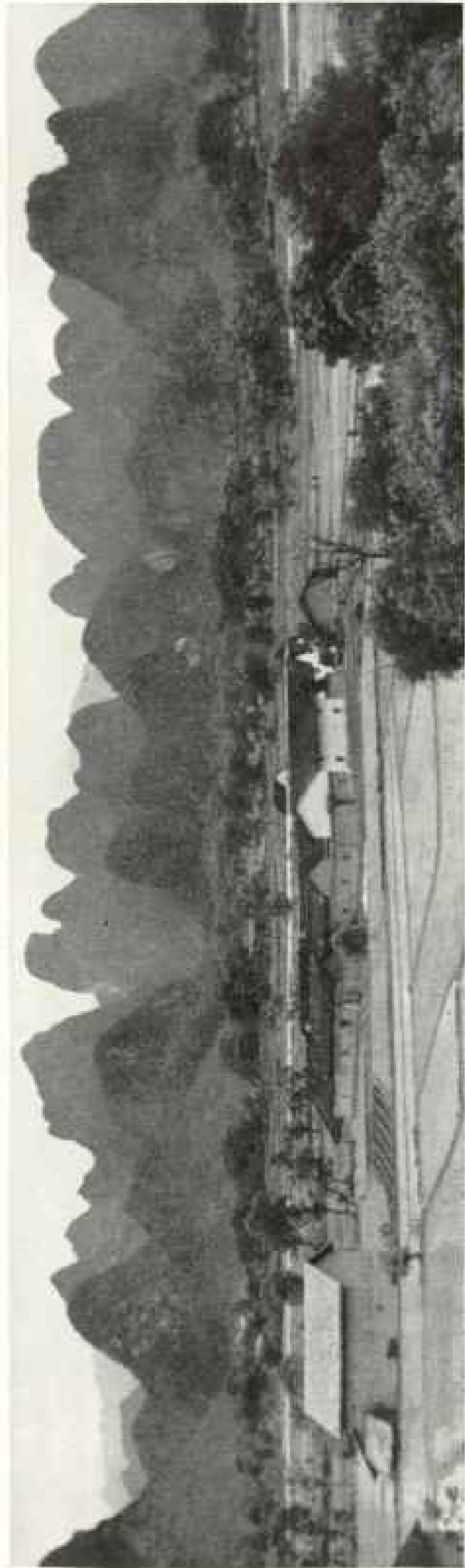
## WUCHOW STILL USES ITS "WALKING WATER SYSTEM"

Formerly all of the city's supply was conveyed in this manner, but an excellent modern system, built mainly by Western-trained Chinese engineers, has been installed (page 686). Some of the people still make daily trips to the river with their wooden buckets suspended from flexible bamboo shoulder poles. Most of the carriers are women,



**RIVER BOATS START DOWNSTREAM FROM KWELIN IN THE EARLY MORNING MISTS**

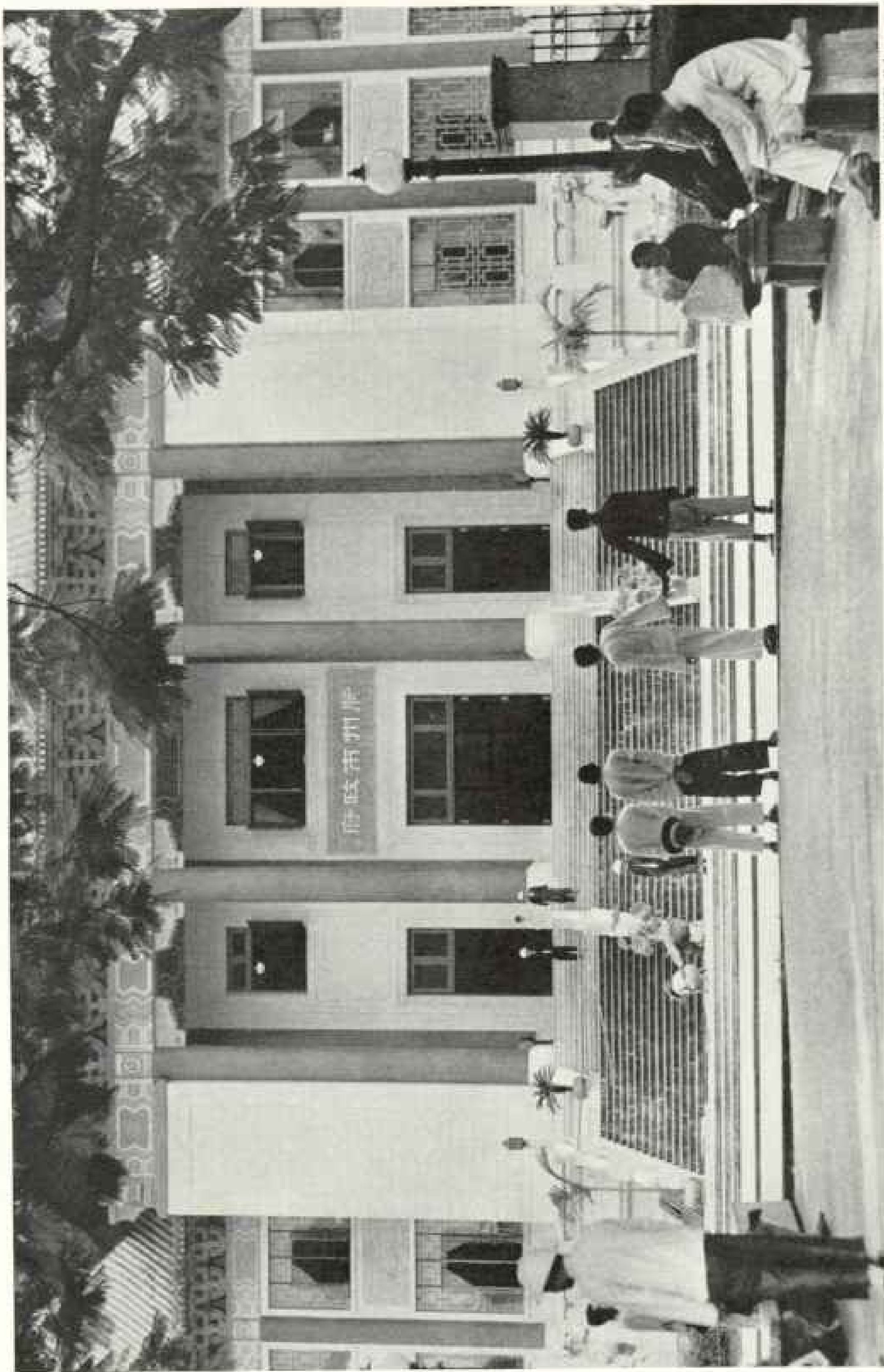
Faintly visible are scenic rocks, one crowned by a pagoda. The white spot in the central hill is a large perforation in the rock.



**LIMESTONE HILLS IN CENTRAL KWANGSI CARVE A SERRATED SKYLINE**

At their base spread flat, irrigated rice fields, dotted here and there with villages, Kwangsi Province is one of the most thinly settled areas in China.

Photograph by T. C. Lau.



Photograph by Alfred T. Palmer

EAST AND WEST MINGLE IN THE ARCHITECTURE OF CANTON'S NEW CITY HALL

Though its builders utilized modern methods of construction, they retained much of the style and decoration of older Chinese structures. There is a growing tendency to create a distinctive form of Chinese architecture, evident in many municipal buildings, colleges, and hospitals throughout the country.

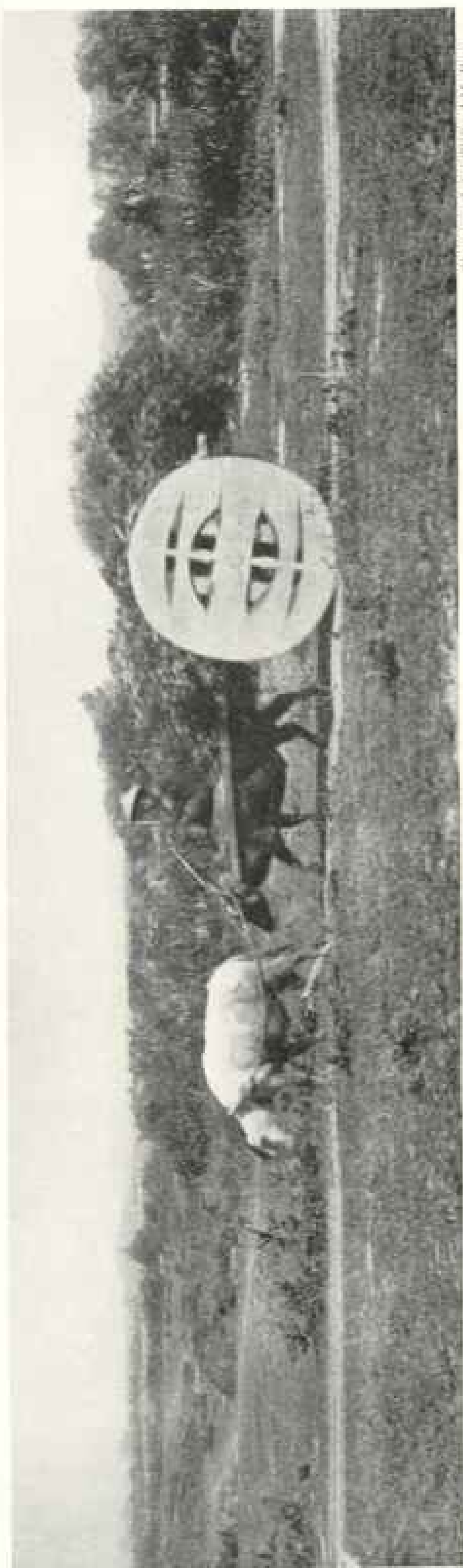




Photograph by T. C. Liu

**ROCK PILES OF WEST RIVER ARE A HEADACHE TO BOATMEN, BUT VALUABLE REAL ESTATE TO FISHERMEN**

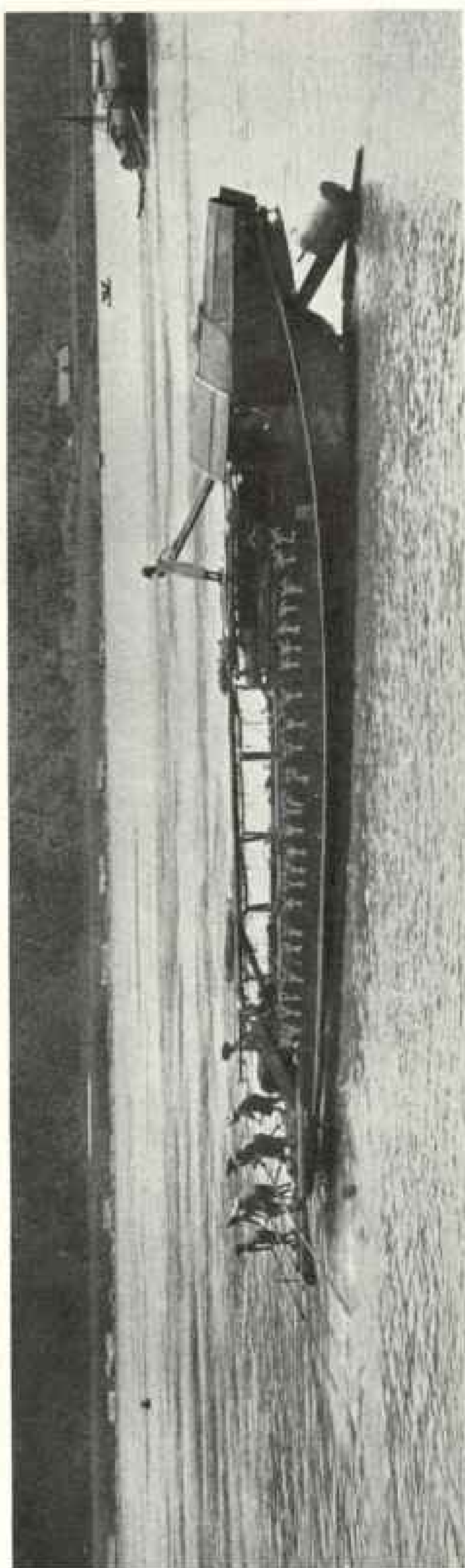
In addition to natural rock formations, stones are often heaped in the stream to produce lee water where fish swimming upstream can rest. Upon them fishermen stand, cast their nets repeatedly, and make large catches. A good fishing pile is worth about \$5,000 in local currency (page 695).



Photograph by Clifford M. Pope

**"BUILD CARTS FOR THE ROADS, NOT ROADS FOR THE CARTS," IS HAINAN PHILOSOPHY.**

Both axes and wheels are wood; usually they are left ungreased, and their creaking may be heard for hundreds of yards.



Photograph by F. C. Lee

**A COMMODIOUS CATTLE BOAT MOVES CLUMSILY DOWN THE RIVER**

Decks are crowded with white-faced animals on the way to market. In calm water the helmsman can take it easy while the rest of the crew labors at the paddles.



Photograph by T. C. Lam

A BUDDHIST ARTIST USES A LOCAL  
MEDIUM

The statuette is carved "on location" in a large stalagmite of one of Kwangsi's numerous limestone caves.

of the arrival of the baby birds, even as the arrival of his own children is announced.

The value of such birds is indicated by the fact that in former times cormorant fishermen had to pay a special duty to the local government.

FISHING WITH A WHITE BOARD

The automatic fisher is a boat about 15 feet long and only two feet wide, with a thin, painted white board perhaps four feet wide hanging along one side at a 45-degree angle, half submerged in the water. A high net projects at an angle above the opposite side of the boat (page 705).

These boats always operate at night, and preferably on a dark night. The white board hangs in the water near shore, forming one side of a V, and the slope of the muddy bank the other. There is also a vibrating bamboo bow attached to the white board, which makes a low-pitched sound in the water while the boat is in smooth, noiseless progress.

Fishermen paddle these boats, making no splash, even as a red Indian paddles his canoe. When a fish is caught in the V between board and bank and is excited by the unusual sound of the bow, it often leaps out of the water toward the light, and, landing on the net over the other side, slides down into the boat. Fish of many kinds are caught in this way; even an eel may occasionally come aboard.

To fish with a hook is to deceive a fish, and to catch it with a net or a harpoon is murder with armed forces. Trapping fish is not so honorable, either, but with an automatic fisher your fish leaps aboard voluntarily. To be caught appears to be the fish's own fault. To us this seems the most honest way of fishing.

THE "RED INDIANS" OF CHINA

Proceeding westward from Wuchow 50 miles up the West River, we look out to our right upon the peaks of the highest mountains of Kwangsi. When we first passed through this locality, the atmosphere had been so cleared by a rain that we had no need for field glasses to see, from our boat on the river, the sharp peaks standing out against the sky like so many gigantic fingers.

The scene was so wonderful that we could not, for a time, believe our own eyes. Heretofore we had seen such views only



ADEPT CORMORANT FISHERMEN ENJOY A SUN BATH IN OFF HOURS FROM WORK

The owner of these faithful birds is assured of a good livelihood, for, working singly and together, they bring him rich catches from Kwangsi streams. In concerted action they have captured a fish weighing as much as 63 pounds (page 696). They are perched on the end of a long bamboo raft from which they usually work at night.



Photographs by T. C. Lau

THIS QUEER CRAFT, OPERATED AT NIGHT, LURES FISH ABOARD

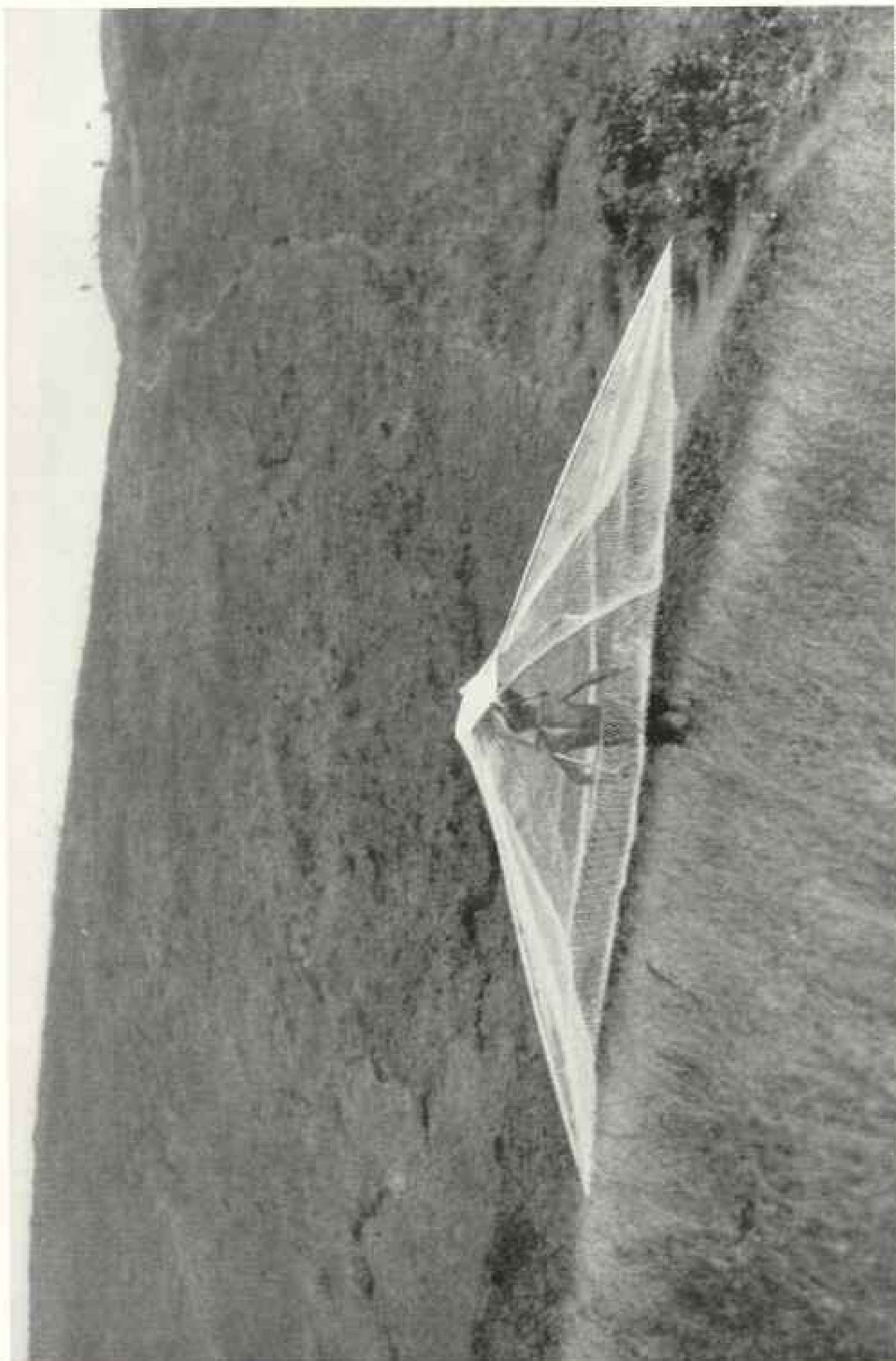
Attached to one side of the canoe is a white-painted board projecting at an angle into the water; on the opposite side hangs a net. Fishermen row these cleverly devised boats quietly along the streams so that the board forms a V with the bank. The fish, attracted by the light and becoming excited by the sound of a vibrating bow, leap from the water into the boat or net (page 704).



Photograph by T. C. Latt

ANSHUN MARKET PLACE APPEARS LIKE A CLUSTER OF MAGNIFIED MUSHROOMS

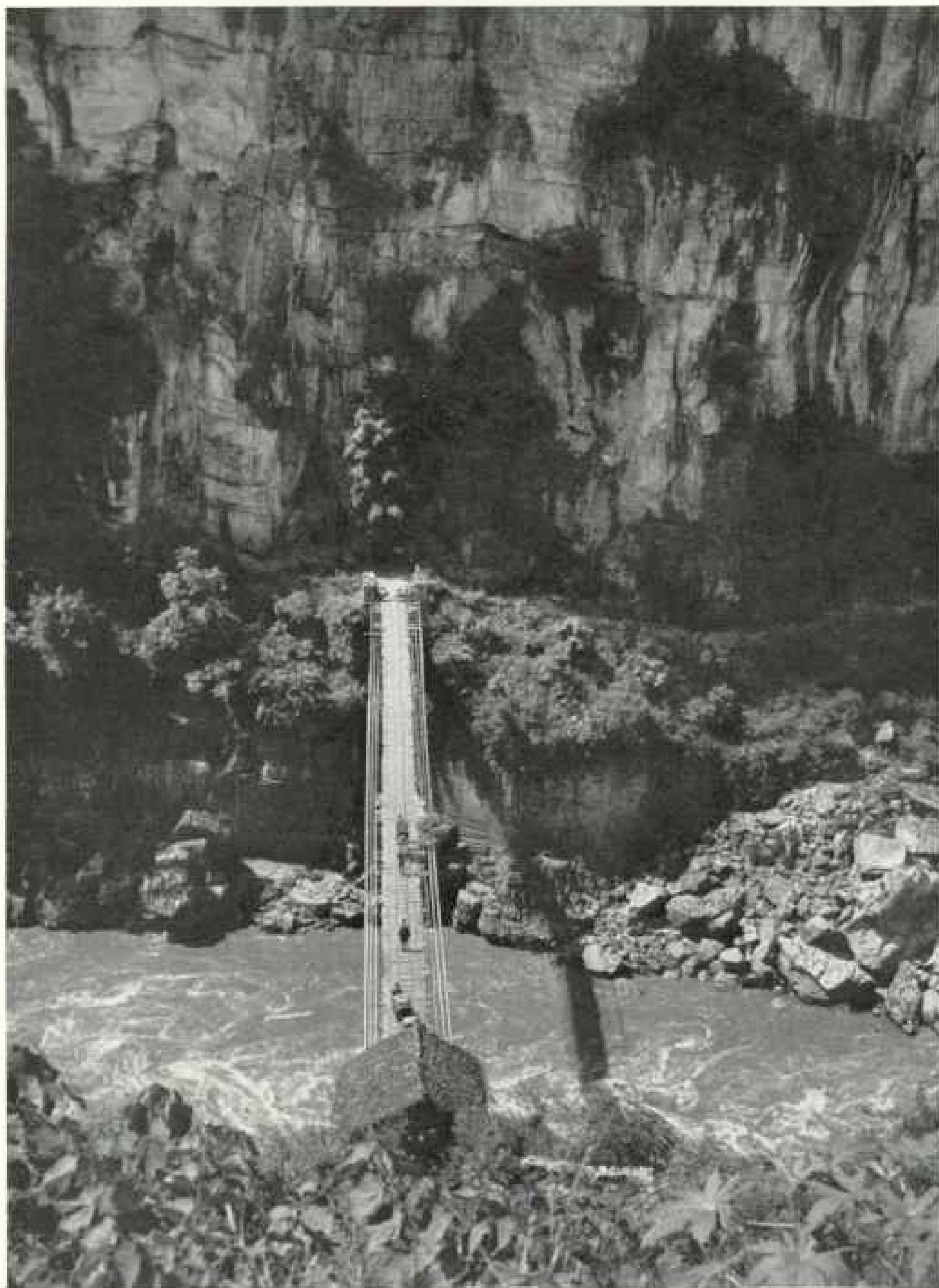
Large paper parasols erected for shade, and woven bamboo hats produce this singular effect when seen from the city wall. The confusion of buying and selling beneath the parasols has given rise to a Chinese expression, "as noisy as a market." The wide hats are rainproofed by tung oil (page 709).



Photograph by G. Weidmann-Groff

**LIKE A HEADLESS DANCER IN A DIAPHANOUS SKIRT, A BIRD TRAPPER STALKS HIS PREY**

The wide net, with which he catches quail and other birds on these grassy hills of South China, is held on his shoulders by a bamboo framework. When birds are flushed within range, the net is clamped down quickly to prevent their escape. Obviously this is no apparatus to carry on a windy day.



Photograph by T. C. Lau

200 FEET ACROSS, 100 FEET ABOVE THE HWA KIANG—AND IT SWAYS!

Sixteen iron chains support the board pathway. Part of the old imperial highway of southwest China, the bridge was built 300 years ago by the Ming Dynasty. Leaders of a caravan are allowing only two of their pack animals to cross at a time, so that the bridge will not be overloaded (page 710).



Photograph by T. C. Lau

DR. LAU PAUSES ON THE CHAIN BRIDGE THAT SPANS A MOUNTAIN STREAM

After descending a steep stair-stepped path, a part of which is seen in the background, the co-author and photographer gazes up at an almost sheer wall of rock (opposite page). The chains supporting the flooring of the bridge are anchored in rocks with lead and are held together by rods thrust through the links.

in old paintings. The peaks were those of a mountain locally known as Shing Lan, which is said to be more than 6,000 feet high. In these lofty areas are the aboriginal tribes called the "Iu people," the "Red Indians" of China. They are yet to be studied in detail by enterprising ethnologists.

To proceed more rapidly at Kweih sien, we left our launch and traveled overland by car until we came to the farthest southwest point of interest, Lungchow. There we passed through the international gate. It proved to be a massive gate through the long stone wall extending along the border, much like the Great Wall of North China.

When our cars went through, we found ourselves in another country, French Indo-China. The river there, however, with its muddy water red like tomato soup, was still a tributary of the West River.

TRIBUTARIES OF THE WEST RIVER

We once went by air from Nanning to Liuchow and thus saw the West River and its branches from aloft. Passing over the

mountains of central Kwangsi, we approached the Red Water River region.

Soon the blue Clear Water appeared. It seemed to meander for miles through the limestone hills, like a snake, until finally it merged with the Red Water River.

Ahead and to the left appeared a vast area of striking limestone formations. Their pointed hills extended northwestward to the horizon. A forced landing in this area would certainly be almost fatal.

At Liuchow one bright morning our party was directed to a large tung, or wood-oil plantation. Here we saw native bullocks propelling the crude stone crushing mortars through which the recently harvested nuts were being ground into meal.

Later this meal was steamed in huge vats and made into cakes, from which the oil was expressed by ingenious native presses operated by the weight of the human body applied at the end of a bamboo-pole lever.

Tung oil, extracted from the dried nuts of two main species of *Aleurites*, is one of China's famous products, especially useful



for waterproofing. It is now widely used throughout the world in the manufacture of paints, varnishes, and lacquer, linoleum and oilcloth, printing ink, electrical goods, brake linings, wallboard, and other products.

Unknown to the West until comparatively recent times, the tree has been introduced into the United States, Australia, and other world areas. It is now flourishing in extensive plantations along the Gulf of Mexico from Florida to Texas.

Tung oil imported annually by the United States from China is now valued at more than fifteen million dollars. Chinese writers record that the Chinese people first learned of its use from the Miao, or aboriginal tribes, who brought the nuts in from the wild and extracted the oil.

Here, then, is another important contribution of China to the Western World, which we were privileged to see in at least one of its native homes in China.

From Liuchow we proceeded again by motor. For a full day we drove steadily through this extremely uneven country, threading the limestone hills. We entered Kweichow Province the next day, and it took us two more days to reach the capital, Kweiyang.

The Province of Kweichow is more inaccessible than Yunnan and less known to the outside world than Tibet (698). Until very recently the inhabitants were still carrying on their daily life in almost purely medieval ways. Aborigines known as Miao still live in this Province. There are said to be more than 70 tribes of them, and every tribe has its distinctive costume. To outsiders the styles are mirth-provoking.

#### CLIMBING DOWN, TEMPERATURE RISES

From Kweiyang we drove westward to Anshun, an inland commercial city of importance in Kweichow Province (page 706), and proceeded in sedan chairs and on foot to the edge of a deep valley, known locally as Hwa Kiang gorge, through which runs a northwest tributary of the West River. The plateau is about 3,875 feet above the valley.

To reach the river at the bottom, we had to descend probably 2,500 feet, climbing down cliff-like banks and proceeding over the paved stone road which winds downward to the great chain bridge.

Descent was easy. As we proceeded down into the gorge, we found that the temperature increased rapidly. By the time we reached the chain bridge we had

to take off our coats and stop for a rest.

The Hwa Kiang bridge is some 200 feet long and hangs about 100 feet above the river (pages 708-709). It is constructed of 16 huge iron chains to which are attached boards about 8 feet wide, so laid together as to make a board-walk path across. The ends of the huge chains are anchored into the rocks by molten lead.

This bridge, built during the Ming Dynasty, A. D. 1632, is on the main imperial highway of southwest China.

As we approached the bridge, we saw a caravan of pack horses crossing from the other side. The men allowed only two horses to cross at a time for fear that the animals with their loads of salt might be too heavy to be supported by the bridge.

We lingered at the bridge for more than a half hour, enjoying lunch, taking photographs, and admiring the grand old structure. The river below was a torrential current. The huge rocks over which the water passes make navigation impossible.

#### CROSSING KWEICHOW BY SEDAN CHAIR

After lunch we began to ascend the other side of the valley. Near the stream we had taken a drink of water from a well-capped bottle. On the plateau on top of the gorge, as we again opened the bottle by pulling off the spring catch, the cork blew off with a slight explosion. This proved that the air which had been caught some 2,500 feet below was much denser than that above.

From the Hwa Kiang Valley we proceeded westward by sedan chairs, for at that time the motor road was not fully completed. In the western part of Kweichow Province we passed still other limestone formations which, while more massive, are not nearly so trim as those at Kweilin.

Thereafter for two weeks we continued the overland journey, starting at daybreak and continuing in sedan chairs or on foot until sundown.

Finally we arrived in Yunnan Province at Hsiang, on the railroad which leads to Yunnanfu. The river above this place was a torrent which for several miles seemed like one continuous waterfall. It is the tributary of the West River farthest from the mouth.

We decided not to retrace the long river route, but to return home from Yunnanfu by railway through Indo-China, by coastal liner thence to Hong Kong, and by train to Canton.

## Changing Canton



Photograph by Kinchue Wong

BOY-SCOUT STANDARD BEARERS OF YOUNG CHINA RAISE THEIR COUNTRY'S COLORS AT A CANTON ATHLETIC MEET

This picture, taken in May, 1937, illustrates China's increasing interest in physical prowess and its growing sense of national unity. From many a staff floats the "white sun" flag of the Republic. Boy and Girl Scouts have been organized in many parts of the country, and numerous temple courtyards of Canton have been converted into grounds for tennis, basketball, and other games.



Photograph by Alfred T. Palmer

SAIL, STEAM, POLES, AND PADDLES PROPEL CRAFT ALONG CANTON'S BUSIEST HIGHWAY—PEARL RIVER

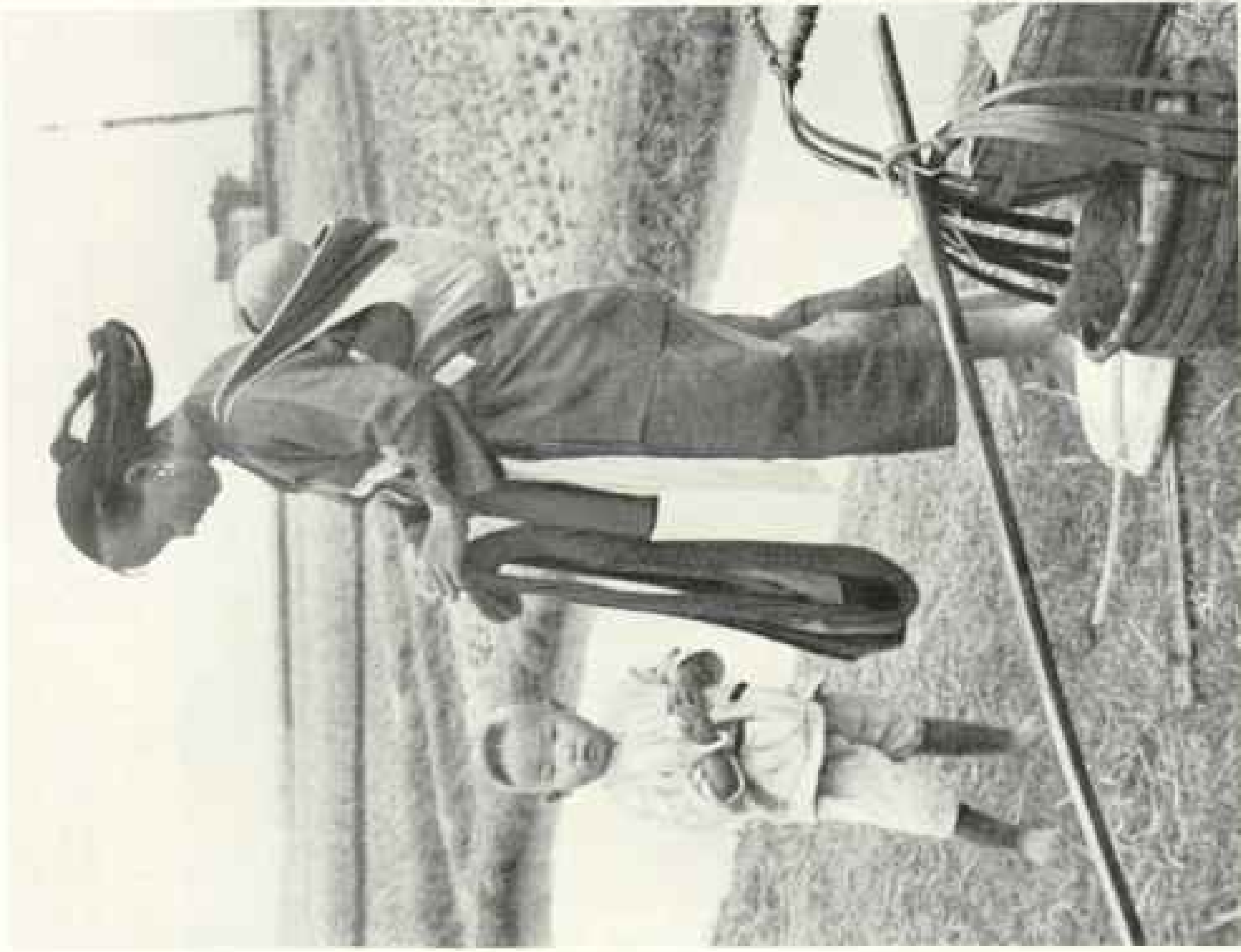
Boats like those Marco Polo saw float against a skyline where skyscrapers have replaced *pai-foi* (page 722). Broad-sterned houseboats and other vessels anchored along the foreshore carry passengers to villages of the Delta and interior. Like New Orleans, Canton is a river port, being some 89 miles upstream from British Hong Kong. For many years it was the only Chinese city that would trade with "foreign devils," and to this ancient harbor came the first boats of the American Merchant Marine while the United States still was an infant nation.



Photograph by Sankar Mukherjee

**"READY-MADES" AND PILE GOODS IN BARGAIN ROW**

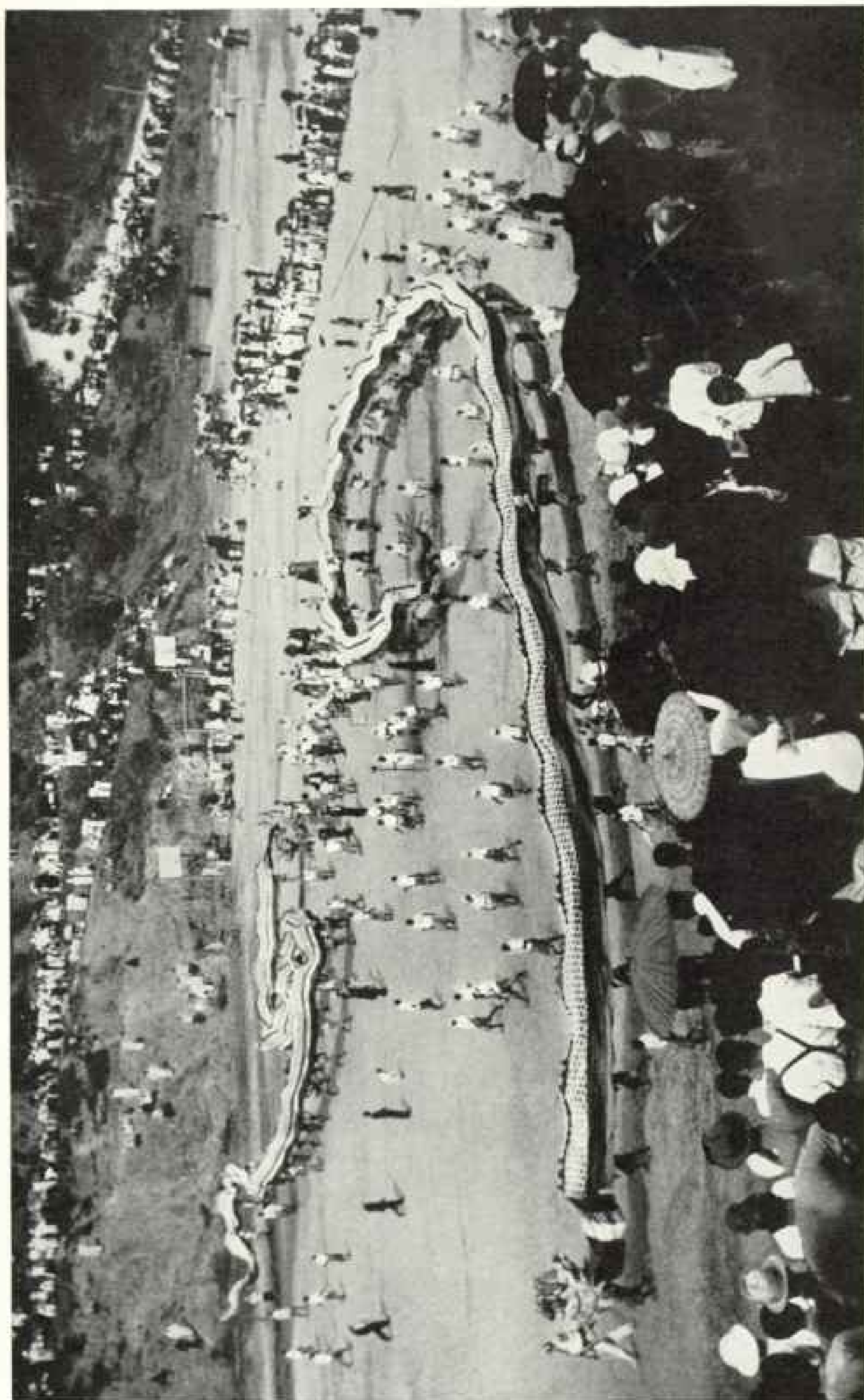
Such open shops, with sport and house-dress styles displayed on racks like an American mark-down sale, cluster along one Canton street. The salesgirl wears a Western dress; the young customers cling to a modified garb with conventional high-collared tunic and the modern slit below the knee.



Photograph by T. C. Lau

**MOTHER'S HAIR-KNOT MAKES A CANOPY FOR BABY**

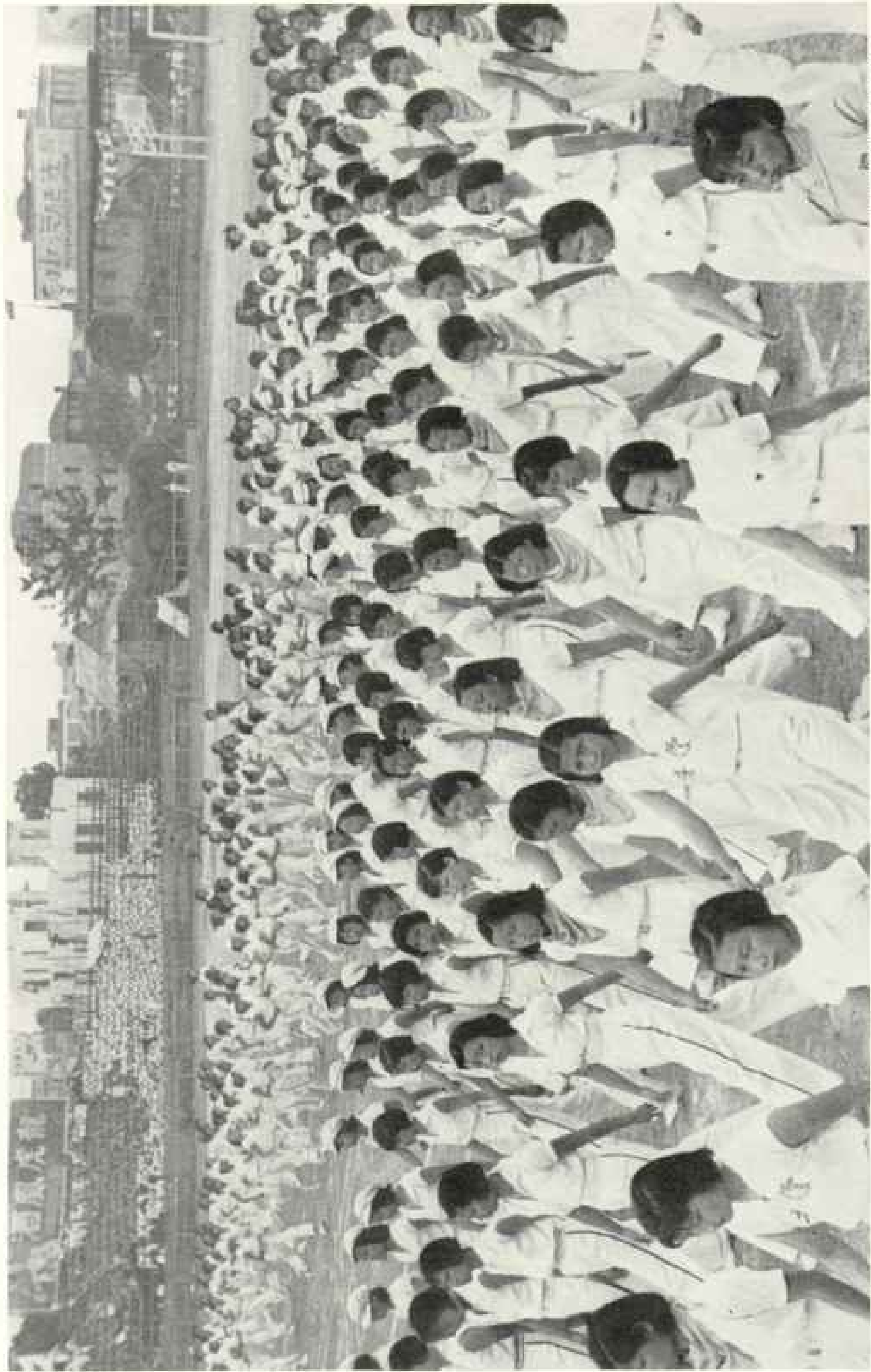
This foot-long bun projecting from the back of her head is peculiar to the peasant women a few miles north of Canton. While lugging loads in baskets to market, as here, or when working in the fields, mothers often carry their youngsters cradled in such rumble-seat slings.



Photograph by Student Mack

NOT A FOOTBALL "SNAKE DANCE," BUT AN ANCIENT DRAGON FESTIVAL IN CANTON

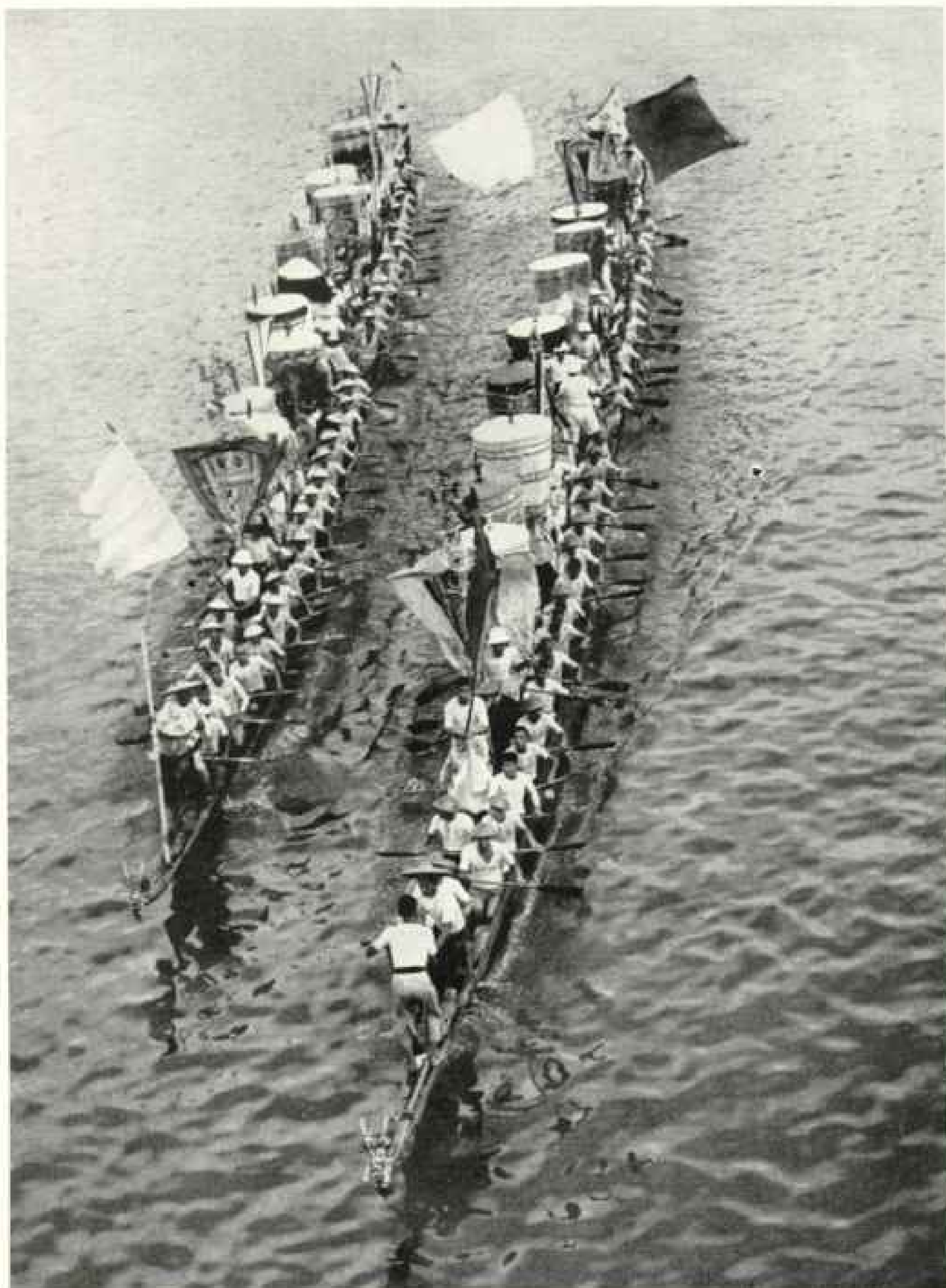
With these writhing monsters of brightly colored paper, whose legs are those of some two-score humans, the people celebrate their Independence Day, October 10, The Chinese July Fourth commemorates the beginning of the revolution of 1911, which swept the Manchus from the imperial throne and changed China into a republic under the leadership of Sun Yat-sen, a native of Kwangtung Province.



Photograph by Sinker Mack

MOTHERS WITH BOUND FEET OFTEN WATCH ATHLETE DAUGHTERS IN SPORT SHOES

At the Canton meet in May, 1937, groups from various schools engaged in marching, tugs of war, setting-up exercises, and other events that only recently would have been considered most unbecoming to a Chinese lady. In ten years the southern capital has increased manifold its provision for schooling. There are classes for poor children, night schools for adults, athletic fields for all. Already the mass education movement has appreciably reduced illiteracy.



Photograph by T. C. Lau.

A CANTON DRAGON BOAT HAS MORE PADDLES THAN A VENETIAN GALLEY'S OARS

From a distance the parasols suggest smokestacks of an ocean liner. Plenty of man power speeds these slender craft, unless lack of timing causes a mix-up in paddles. The gaily decorated boats are raced on the river at Canton on Dragon-Boat Festival Day, the fifth day of the fifth month of the year. Although the Chinese have officially adopted the modern calendar, festivals of the lunar year survive.



Photograph by司徒·馬克

## "THE HELPING HAND"

The photographer has composed a Chinese picture which suggests the oft-copied painting of that title by Emile Renouf which hangs in the Corcoran Art Gallery in Washington, D. C. It is play now, but in a few years this youngster will be sculling a bobbing sampan over the waters of Pearl River, as his ancestors have done for generations (page 720).

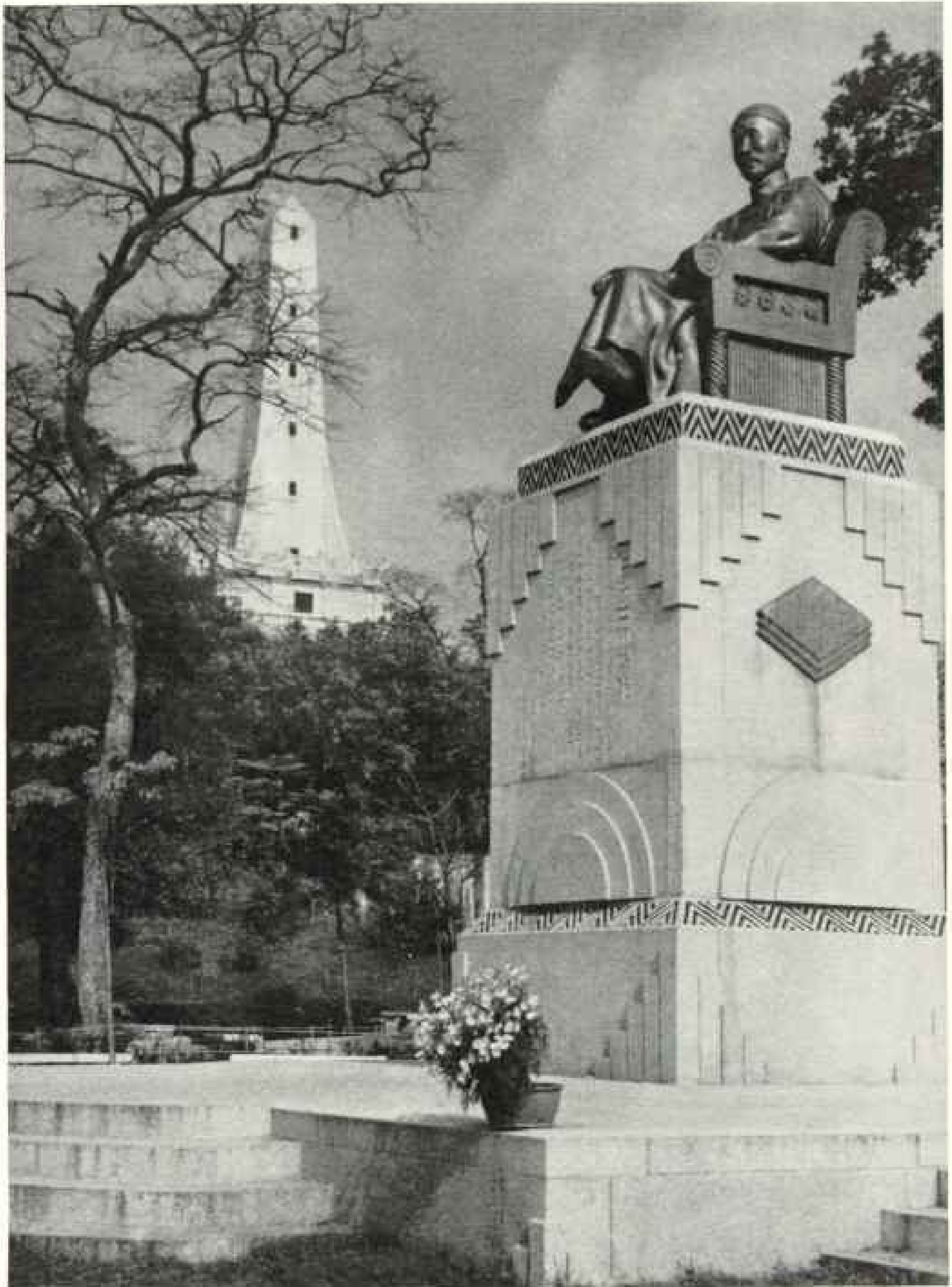


Photograph by Alfred T. Palmer

## HOME, SWEET HOME AFLOAT, ON THE PEARL RIVER

Mother handles the tiller, baby sleeps, father probably propels the craft with a long pole. This intimate bit of household life of Canton's floating population was snapped through the partially opened roof of a sampan as the craft passed beneath one of Canton's bridges. Many river families spend their lives aboard such boats, raising their children and their chickens on them.

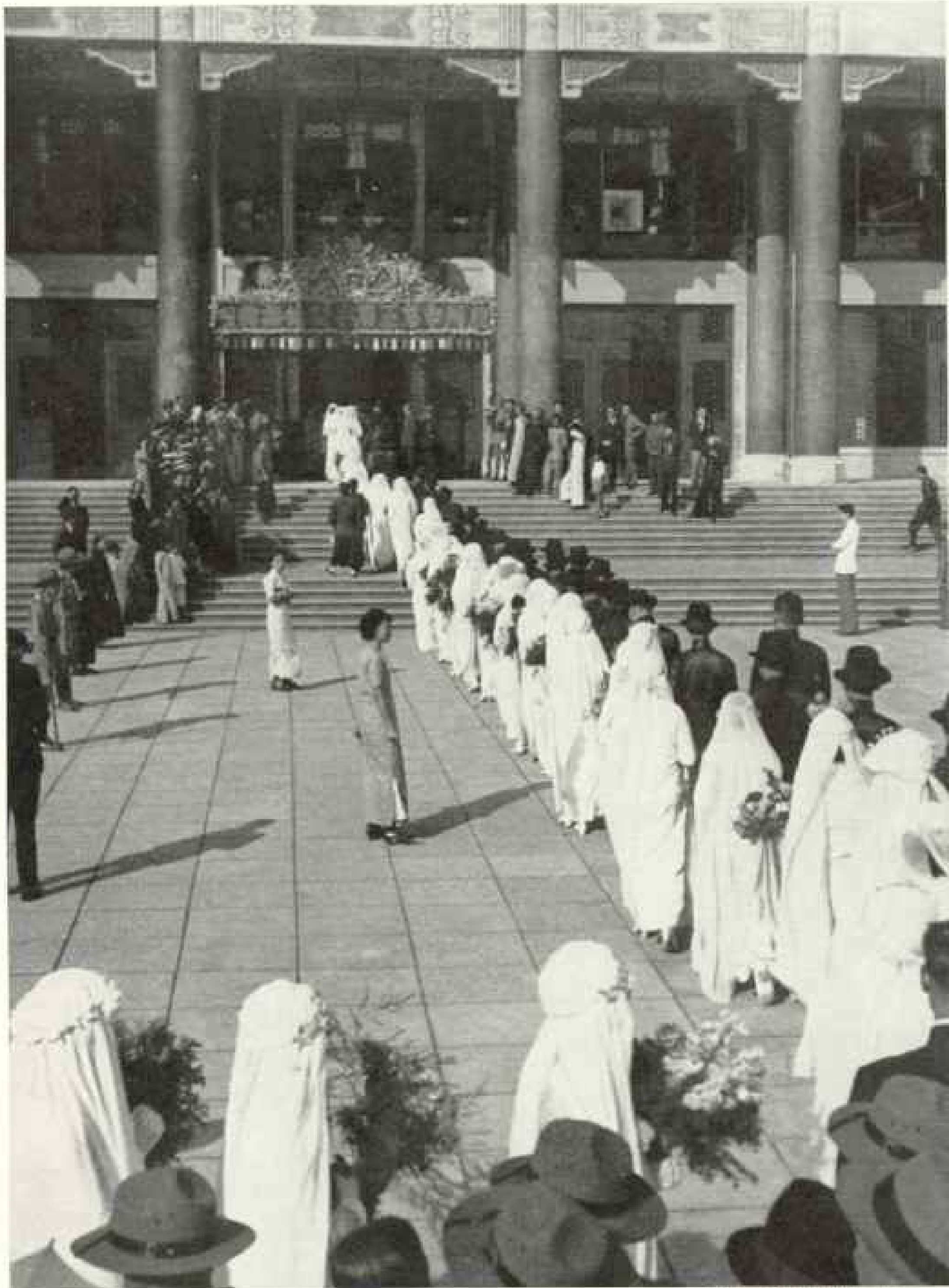




Photograph by Sukeo Mack

#### CANTON HONORS THE POUNDING FATHERS OF THE REPUBLIC

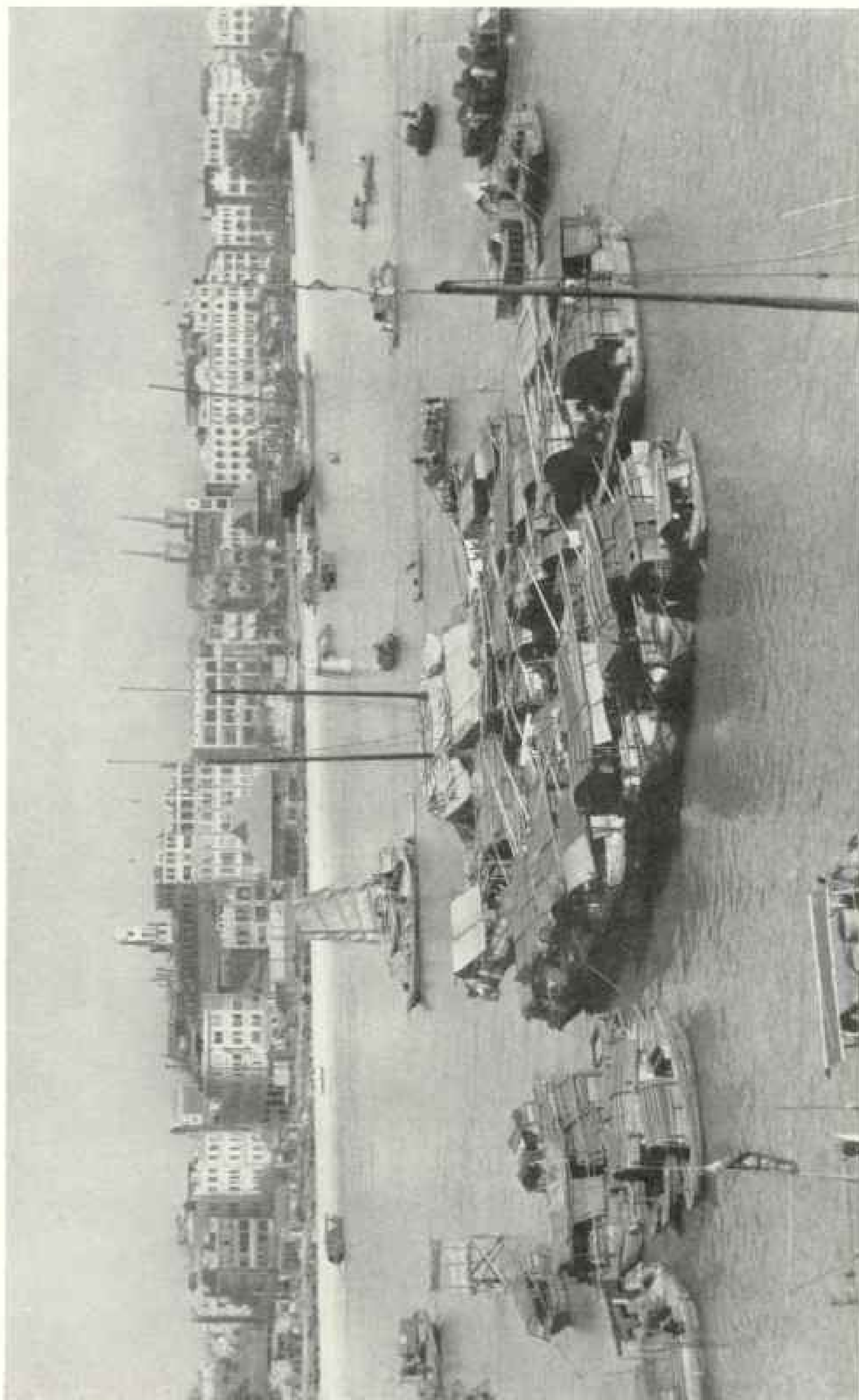
In the foreground is the tomb of Wu Ting Fang, who represented the provisional Republican Government in negotiations with the Imperialists, following the revolution of October, 1911—a conference which ended in the abdication of the infant Manchu Emperor. The distant monument rises on a hill above the memorial auditorium dedicated to Dr. Sun Yat-sen, the "Father of the Republic."



Photograph by Kinchew Wong

CANTON COUPLES QUEUE FOR A MASS WEDDING AS LONDONERS DO FOR A CINEMA

Formerly a bride was conveyed to her husband's home concealed behind heavy brocade in a sedan chair. Now she stands in line with the bridegroom before the Municipal Building for a civil mass marriage. This procedure, popular in many cities, reduces expenses.



Photograph by W. Robert Moore

FLOATING VILLAGES OF SAMPANS ARE MOBILE "SUBURBS" OF MODERN CANTON

Typical of the old China in contrast with the new are the fleets of dingy, ranshackle houseboats bobbing just across the river from Canton's impressive water front, with its up-to-date hotels and office buildings. Fourth largest city in China, this southern metropolis is also one of the most progressive. In recent years docking facilities have been improved for handling its heavy trade and new bridges are replacing the countless sampans and other small craft that have ferried passengers and goods between shores.



**HALLOWEENT NO, A FUNERAL PROCESSION**

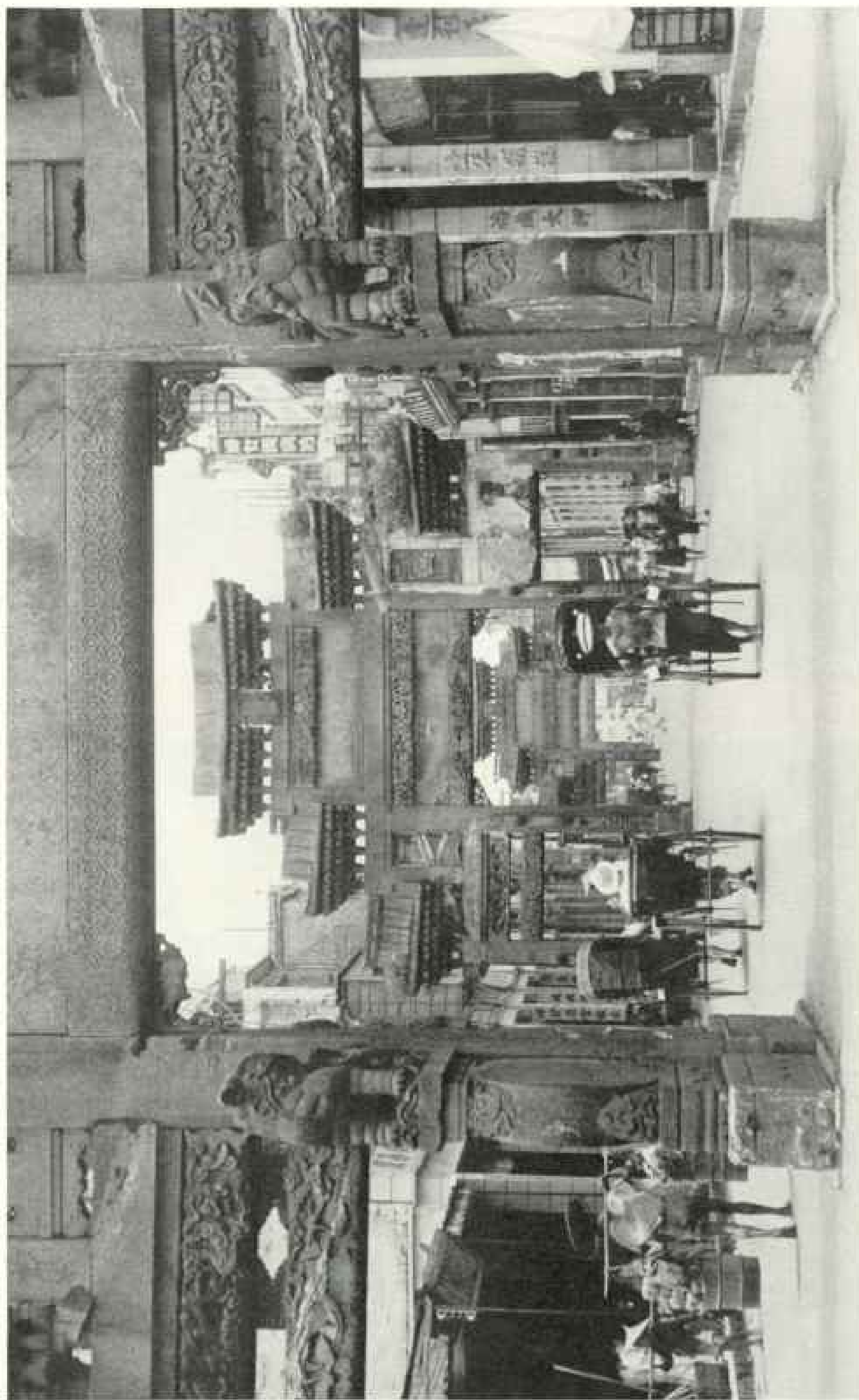
When a Chinese dies, his family hires a parade which marches through the busiest streets of the city exhibiting huge banners and paper lanterns. A brass band supplies music, often playing such airs as "Dixie" and "Over There." The ostentatious display often drains the family purse.



Photographs by Alfred T. Palmer

**"DON'T FALL OVERBOARD," LITTLE BROTHER WARNS HIS PUPPY**

Their home is one of the houseboats that swarm on the Pearl River at Canton, so the children hold their pet on a leash for safety's sake—just as they, when younger, were tethered to the deck or tied to a float to keep them from drowning. The puppy is a chow, native Chinese breed now known all over the world.



Photograph by Alfred T. Palmer

A VISTA OF OLD CANTON REMAINS IN THE MIDST OF THE NEW

These *pal-loo*, or ornamental archways, were left standing only because interested foreigners appealed to the municipal authorities to save them from destruction. After changeless centuries many old monuments and buildings recently have been demolished to make way for broad, paved streets and modern structures, especially since part of Canton was destroyed by fire in 1927.



Photograph by Kienfai Wong

CANTON, LIKE MANY AMERICAN CITIES, HAS ITS ASSOCIATION OF OLDEST INHABITANTS

Membership of this honor roll is determined when the mayor invites the aged to a dinner party given each year. Here he and his wife pose with their guests. The woman at his left is reputed to be 110 years of age, and the man 106. Nowhere does old age command more honor and reverence than in China.



Photograph by Gilbert Grosvenor

VENERABLE TREES ATTEST THE AGE OF A GRACEFUL PAGODA

The 9-story structure ornaments the low-lying rice paddies encircling the campus of Lingnan University, Canton. This photograph, taken in May, 1937, shows little change from a sketch made by Captain Robert Elliot, R.N., in 1851, except that the trees are larger. They thrust their branches from galleries where hundreds of crows and blackbirds nest. The trees sprouted from seeds lodged in crevices by birds or wind ages ago.



AND YET THEY SAY CHINESE HAVE "POKER FACES"!

Perhaps it's the latest bit of gossip they've just picked up in the Canton market. Anyway, the picture proves that Chinese can laugh, and is a reminder that, contrary to popular belief among Western people, they have a rich sense of humor.



Photographs by Siskie Mack

A CANTON PUSHBALL GAME IS NO PUSH OVER

Students of the Chap Sun girls' school mix up in a lively battle of wits and energy. "Lily feet" and the quiet life of Oriental women are being replaced by a zest for outdoor games and strenuous gymnasium exercise.





Photograph by Kinchue Wong

STILT WALKERS ARE FRONT-STREET CARTOONS IN CANTON FESTIVALS

Sometimes they represent mythical or historical characters, and frequently they caricature living persons. On New Year's and other celebrations, as well as here on Chinese Independence Day, celebrants vie in elaborate costumes and height of their awkward supports.

# LAKE GENEVA: CRADLE OF CONFERENCES

BY F. BARROWS COLTON

MUSIC, pouring from the open windows of a little Swiss cafe, burst on our ears as we turned into a narrow Montreux street on a September evening.

"That tune," said my friend, "sounds very familiar."

It was the *St. Louis Blues!*

Inside, the little tables were crowded with townsfolk, visitors, and Swiss soldiers in their baggy gray-green uniforms, all happy and carefree. When the orchestra swung into that revived old favorite, *A Bicycle Built for Two*, the sprinkling of English vacationists joined the chorus.

There was no sign that the eyes of a worried world were focused on near-by Nyon, where next morning grave statesmen of nervous Europe would gather to plan action against submarine piracy.

The Lake Geneva country, self-styled "peace hub of the world," has learned, I decided, to take international crises in its stride. Here, for 2,000 years, Caesars, Napoleons, bishops, and barons have fought and ruled, come and gone, but Lake Geneva stays, and the ancient River Rhône "keeps right on rollin'" into one end of the lake and out the other.

## FRONTIER CURTAILS MOTORING

Lake Geneva lies in a sort of peninsula that juts out from Switzerland's southwest corner into France. In fact, most of its southern shore is French territory, and two-fifths of the lake itself belongs to France.

"Geneva people, if they want to go for a Sunday automobile ride, have but one main road on which they can drive more than a few miles without having to cross the French frontier," a Geneva citizen told me. "Most of us like to drive in Switzerland, so that single highway along the lake's north shore is often jammed with traffic on pleasant Sunday afternoons."

Far up in the Alps, 6,000 feet above the sea and 75 miles from the actual lake basin, I saw where Lake Geneva is born. The massive Rhône Glacier, glistening greenish-white in the sun, lies on a mountainside surrounded by towering precipices and snow-clad peaks.

Out of a huge green ice cave in the glacier face gushes the torrent of water from its melting that forms the beginning of the

River Rhône, chief feeder and only outlet of Lake Geneva.

By the time the Rhône reaches the lake it is dirty-gray with silt picked up on its travels down through the mountain valleys, but as its waters pass through the 45 miles of the lake's length this all settles to the bottom. When the Rhône flows out of the lake again it is so clear that boys fishing off Geneva bridges sometimes can see fish bite their hooks.

Lake Geneva fills a deep mountain abyss in which the Eiffel Tower (984 feet high) would sink out of sight. The lake's surface is 1,230 feet above the sea, but the deepest hole in its bottom goes down 1,015 feet, almost to sea level. Mountains 6,000 feet high tower close around its eastern end, but gradually give way to rolling green hills toward the west (map, page 728).

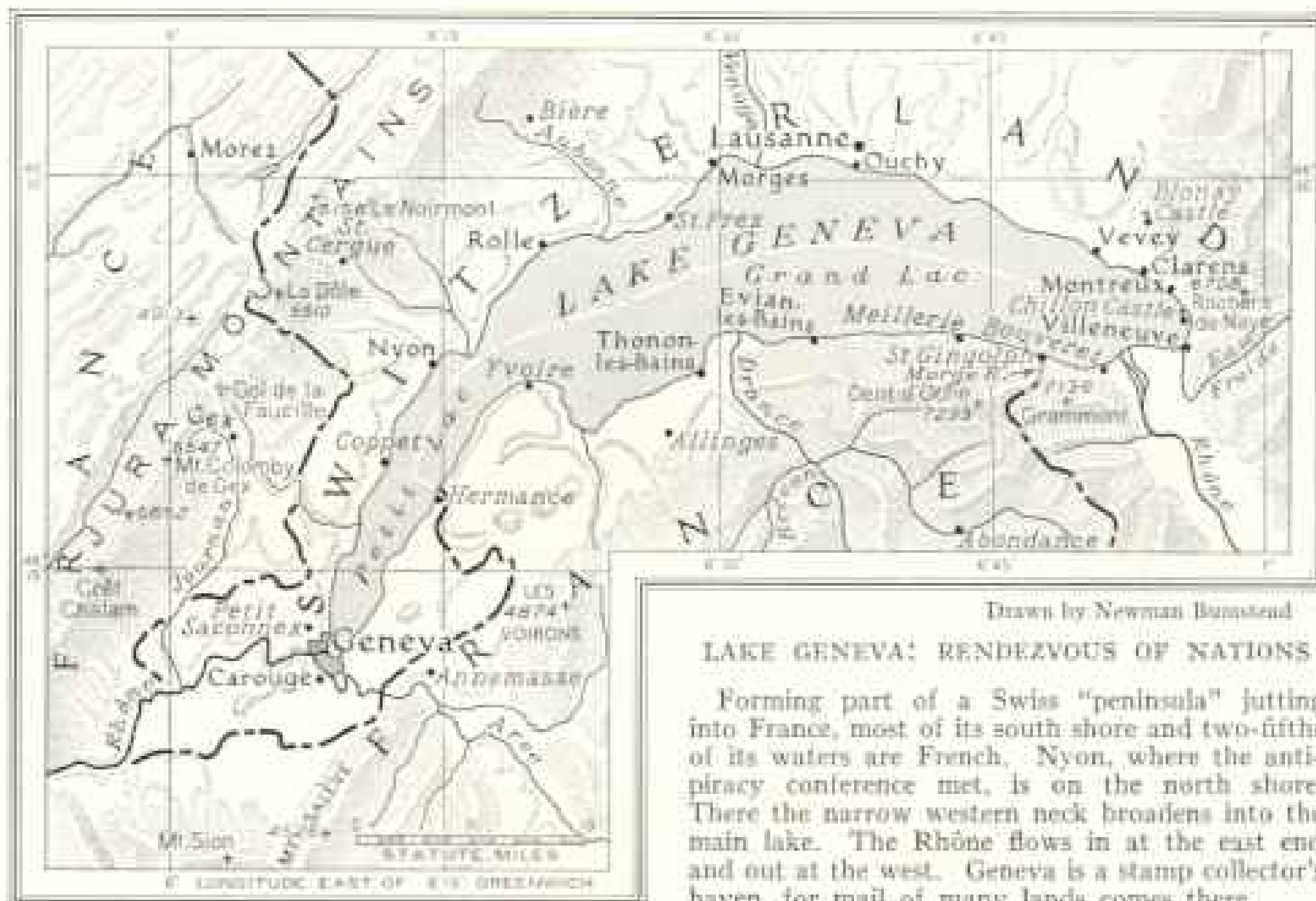
## NYON IS NONCHALANT

Nyon, I found, was rather nonchalant about having its name blazoned suddenly in headlines of the world. After all, it has ruins that date from about 46 B. C., when a Roman colony was founded there: a church upon a site so ancient that its foundations rest upon remains of a pagan temple; and a castle built in the Middle Ages, in which prisoners "languish" to this day.

But the prisoners of today are locked in the attic, not the dungeon, and can look down on a modernistic business building and air-cooled movie theater just a few blocks away!

The lake fronts of all the towns around Lake Geneva are as uniformly lovely as the girls in a Follies chorus and as much alike as their costumes. Always there is a sturdy sea wall, against which waves dash high when storm winds blow; a neat stone balustrade; formal rows of green plane trees, their tops pruned to equal height and flat umbrella shape as carefully as any hedge; flower beds; grass plots; park benches; gravel walks paralleling the shore; and a neat wharf (page 736).

Nyon's lake front is like them all, and, like most Lake Geneva towns, too, it has its castle, high on the hill, the roofs of its five towers as sharp as pencil points. But this castle seems to smile instead of frown, perhaps because there are flower boxes in its windows, a little park with more bright



Drawn by Newman Barnstead

#### LAKE GENEVA: RENDEZVOUS OF NATIONS

Forming part of a Swiss "peninsula" jutting into France, most of its south shore and two-fifths of its waters are French. Nyon, where the anti-piracy conference met, is on the north shore. There the narrow western neck broadens into the main lake. The Rhône flows in at the east end and out at the west. Geneva is a stamp collector's haven, for mail of many lands comes there.

flowers around it, and homely terraced vegetable gardens sloping up to its very foot so steeply that it seems one stroke of a hoe would start an avalanche of garden truck.

Entering the ghost-gray walls through a gate dated 1572, I found on the first floor a musty museum that preserves a few bits of Nyon's past: Roman tiles and carvings; ancient cannon; wax figures in the bright costumes of other days. A spiral stair in one of the round corner towers leads to neat courtrooms and offices for the judges of the district on the second floor.

The prisoners, on the top floor, if they have any eye for beauty, must spend much time gazing out the windows. Across the lake, beyond the green hills of the French shore to the south, Mont Blanc, highest of Europe's peaks, looms like a white cloud on clear days. Back of the town rise the peaks of the Jura Range along the Swiss-French border on the north. To the east Grand Lac broadens to a width of more than eight miles and looks like the sea.

The weatherworn houses of Nyon's 5,000 citizens cluster their white and gray walls and red-brown roofs closely around and beneath the castle. Narrow, cobbled streets with sidewalks "one man wide" or none at all thread between them up the hill. But as I explored them the medieval peace

was shattered by the blast of an auto horn, and I jumped aside just in time as a modern sedan rushed down over the cobbles.

On the hilltop the ramplike streets level off, and here, at one end of a large open park, stands the *Salle Communale*, a sort of town hall or community house, where the Nyon Conference was held (page 733).

#### PEACE MEETINGS AND WAR MANEUVERS

Down over the brow of the hill three little girls with their schoolbooks in miniature knapsacks chattered in French around a fountain splashing into a basin decorated with red geraniums. Suddenly they retreated to the wall as hoofbeats echoed from below. A Swiss cavalryman in full war equipment, steel-helmeted and with rifle in sling, clattered past.

Then I remembered that even while the Nyon Conference was sitting, the Swiss Army was holding war maneuvers.

High in the Alps, a few days before, I had seen where strong forts guard the passes. Conferences may come and conferences may go, but Switzerland keeps her powder dry (page 734).

Pottery, long before politics, brought fame to Nyon. I visited the old pottery factory, its ancient wooden stairs worn hollow, its walls and floor gray with the

accumulated clay of 150 years. In this same building, the young Swiss manager said, pottery has been manufactured continuously since the days of the American Revolution. Once it produced the finest ware, all hand-made, decorated with great artistry. Those pieces now are rare, much sought after by collectors who pay high prices, for they are produced no more.

#### TIMES CHANGE, EVEN IN NYON

"Times have changed," explained the manager, with real regret in his voice. "The fine old hand work is too expensive for us to produce now. To stay in business we had to install machines and go into mass production."

"We still have one workman whose father and grandfather worked here before him, but that sort of thing is passing."

He showed me through the gray old building, where men deftly turned soup plates, jugs, pitchers, and cups on silently whirling wheels. Others fired the huge baking ovens, and girls painted flower designs with uncanny speed.

Along the lake's north shore, eastward from Nyon, vineyards crowd every inch of space on the hillsides that rise steeper and



Photograph by F. H. Julian

#### DIVING, FOR THE TIMID AND THE BRAVE

This unusual tower, with platforms at varying heights, is part of the equipment of the municipal bathing pier in the harbor of Geneva. Here, at the west end of the lake, the water is sparkling clear, since the silt brought down by the Rhône settles to the bottom as the water moves through the lake (page 727).



WHEREVER YOU FIND A UNIFORM, YOU'LL FIND A PRETTY GIRL!

Here three of them watch a review of Swiss troops during army maneuvers near Lausanne. For the occasion the girls are dressed in a Swiss costume of former days, which includes a wide-brimmed, bell-crowned straw hat like that hanging down the back of the girl at the right. The middle girl holds a program with the word "Helvetia," the ancient name for Switzerland, which appears on Swiss postage stamps. Julius Caesar, in his Commentaries, bane of many a Latin student, describes battles fought against the Helvetians near the present site of Geneva.

steeper from the water's edge. They are planted so close to the edge of the road that in some places we could have reached out from our car seats to pick fat bunches of grapes right off the vines. Warning signs along the stone walls bordering the road showed that the same idea must occur to many travelers!

CONSERVING SOIL, BY THE  
BASKET-LOAD

"Every square meter of soil is valuable," said our driver. "The winegrowers begrudge every bit of land that is taken for road widening."

As the hillsides grow steeper, innumerable terraces rise in steps from the water's edge. Each terrace, held in place by its stone-retaining wall, supports a few square yards of soil that in some places slopes at almost a 45-degree angle.

"Doesn't the soil wash down when it rains on such steep slopes, even with the stone walls to hold it back?" I asked.

"Yes," our driver said, "but every winter the farmers dig up the soil that has washed to the bottom of the terraces, carry it back up in baskets on their backs, and spread it again evenly over the slopes."

Up and down the hillsides I noticed in-

numerable tiny flashes of light twinkling against the background of green leaves.

"Those are what you would call in America scarecrows," explained the driver. "They are bits of polished metal, hung among the vines to be swung by the wind, reflect the sunlight, and scare the birds."

Bustling center of this rich farming region of the lake's north shore is Lausanne, sprawled over three high hills above its lake port, Ouchy, which, incidentally, claims the only natural bathing beach in Switzerland.

Lausanne is another of the "conference cities." In 1912 a treaty signed here ended the war between Turkey and Italy, and a conference in 1922-23 resulted in the signing of 17 different treaties and agreements.

#### BRIDGES OF A STAIR-STEP TOWN

Of all the "stair-step towns" around Lake Geneva's hilly shores, Lausanne has the most "ups and downs." Without the lofty bridges across the deep-cut ravines between its hills, every trip across town would be a mountaineering expedition.

Looking down your neighbor's chimney is no novelty here. Leaning over the balustrade on one high bridge, I could see straight down into the chimney pots of houses in the ravine below, while their smoke drifted up into my nostrils. Many a narrow street winds upward steep as a mountain path, and in some places long flights of steps take you from one level to another. History says the Lausannians took to the hills after a disastrous defeat in the 4th century, and there they stayed.

On a cliff on the Cité, chief of the three hills, Lausanne's cathedral towers dominate the skyline. Its beautiful rose window was in place more than 200 years before Columbus came to America. The cathedral has been Protestant for 400 years, since the day of the "Great Disputation," in 1536, when John Calvin and other leaders of the Reformation wrested control from the Catholic clergy.

Visiting the cathedral crypt is like a trip to another world. From the hushed and hallowed precincts of the church you drop suddenly through a trap door and into a bygone age. Passages cut through ancient earth and crumbling bricks of Roman ruins descend into pitch blackness. Then the sexton snaps a switch and you find yourself in a setting to inspire Dante.

All around are open coffins, made of slabs of stone, and in them lie the skeletons

of men nobody knows, buried in a long-lost graveyard a thousand years ago. Many of the graves, the sexton said, date back to the 9th century.

So ancient are the bones that they are the same color as the dust and stones among which they lie. One unfortunate fellow was buried without his head. In a near-by coffin are the remains of two children. Returning to the cathedral through another trap door is like rising from the grave.

Outside on the terrace, workmen sat on benches, smoking pipes and looking at the magnificent view of lake and mountains.

Descending to the city again, I found myself in the midst of the afternoon rush hour. In some of the sloping streets, too narrow and steep for much wheeled traffic, the only sound was the echoing clatter of hundreds of heels as shop girls and office workers hurried homeward.

Lausanne, with a population of 76,000, has the air of a metropolitan, up-and-coming city. Its ancient streets are lined with modern buildings. Smartly dressed people crowd the shops. White-helmeted policemen keep the heavy traffic moving. Iron railings along the curb at busy corners are a discouragement to jaywalkers. Little blue streetcars, which look as though they had tried to squeeze through too narrow an alley and never had sprung back to their normal width, clang for right of way.

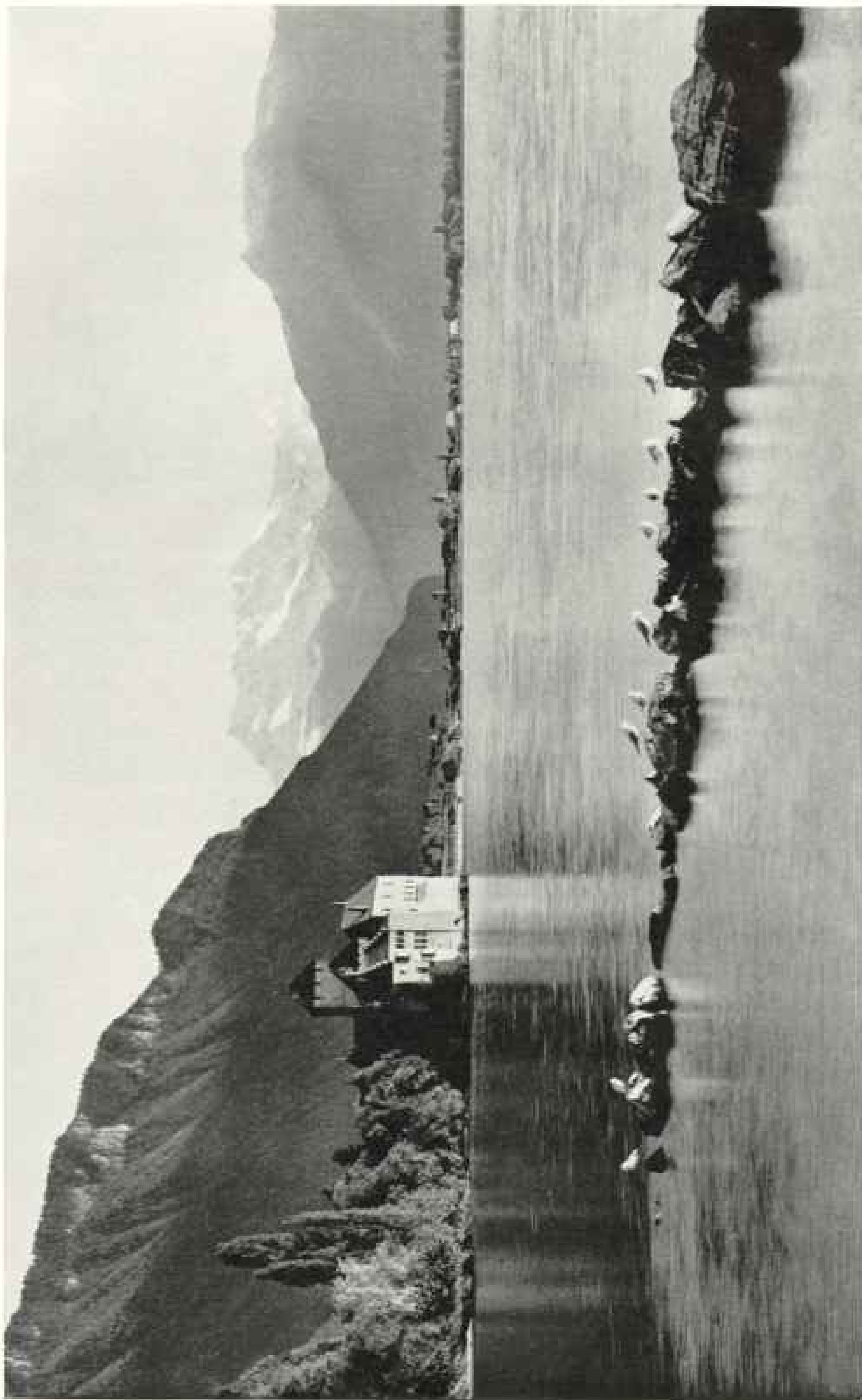
On beyond Lausanne, through many more miles of vineyards, past little villages clinging precariously to the steep slopes, the road will bring you to Lake Geneva's "Riviera," the resort region which begins in the vicinity of Vevey and extends eastward to the end of the lake.

#### "NO HISTORY. LUCKY CITY!"

One guidebook says: "Until the 11th century, Vevey had no history. Lucky city!"

And rightly, for the early history of most Lake Geneva towns is full of pillage, war, and bloodshed. Eventually history touched it when it sheltered two of the judges who sent King Charles I of England to his death. Hounded by avengers sent by his son, Charles II, one of the fugitives, Ludlow, lived in a fortified house provided with a bell, at the sound of which all citizens of Vevey were supposed to arm and rush to his assistance.

Today Vevey makes business history with its factories that produce Nestle's baby food and Peter's chocolate, which have



Photograph by B. Fraasold from Black Star

THE CASTLE OF CHILLON, IMMORTALIZED BY BYRON, GUARDS A NARROW PASS BY LAKE GENEVA'S SHORE

In its dungeon François Bonivard, who inspired the poem, "The Prisoner of Chillon," was chained to a pillar for four years, 1532-36. The castle, on a rocky islet just off shore near Montreux, commands a narrow passage between the edge of the lake and the almost sheer side of the mountain (page 337). To the right of the castle is the flat valley at the east end of the lake where enters the River Rhône, its principal feeder. Behind looms the snow-capped Dent du Midi, "Tooth of the South." The seagulls in the foreground are a few of thousands that live on the lake; all expert at catching bits of food tossed out by passengers on lake steamers.

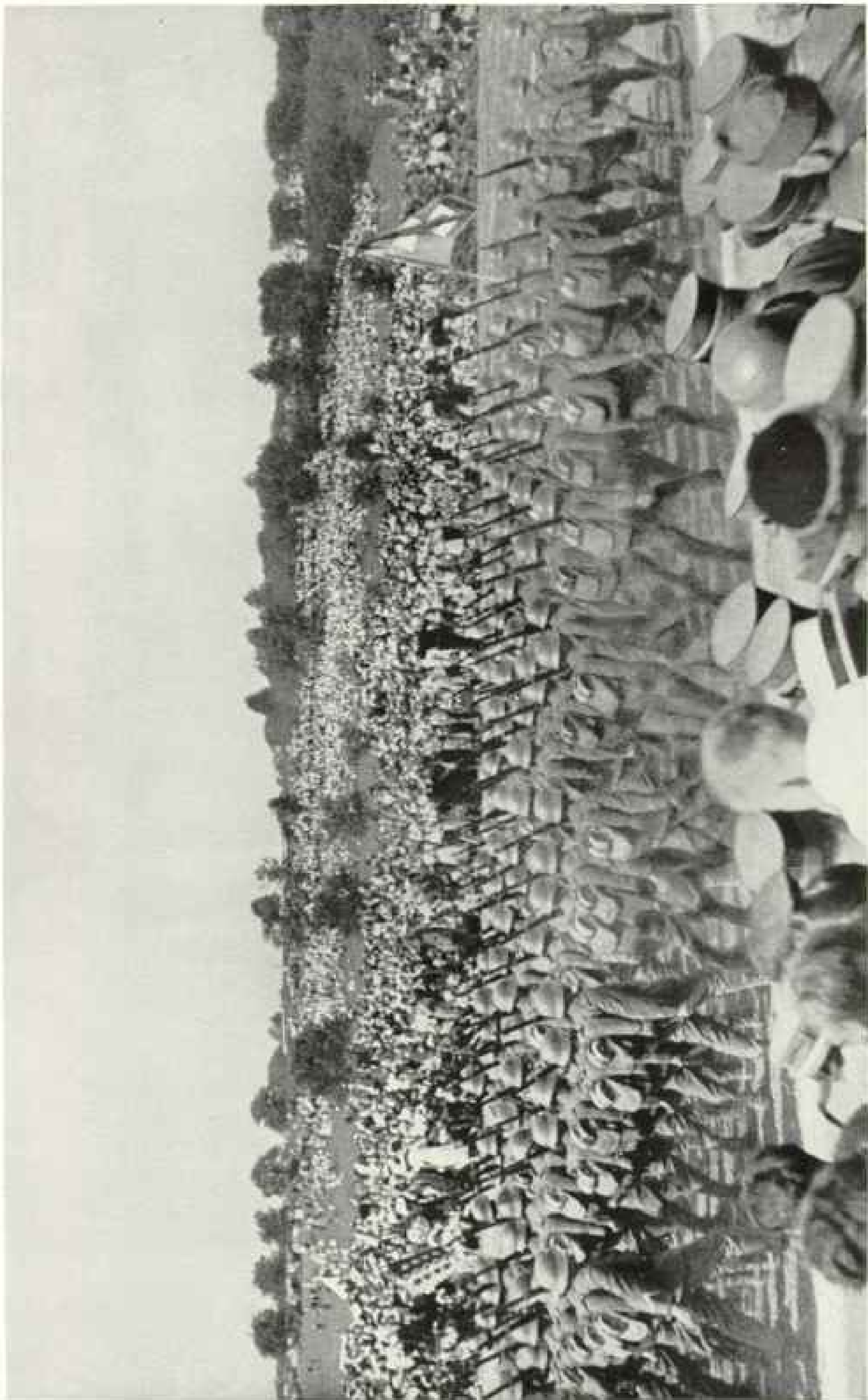


© Lattinoid "Alpini"

NYON, LATEST LAKE GENEVA CONFERENCE TOWN, CLUSTERS ON THE STEEP HILLSIDE AROUND ITS SMILING CASTLE

The plain white building facing the open space surrounded by trees in the upper center of the picture is the *Salle Communale*, a sort of community house where the Nyon Conference on submarine piracy in the Mediterranean was held (page 727). Just below is the castle with its sharp-roofed towers.

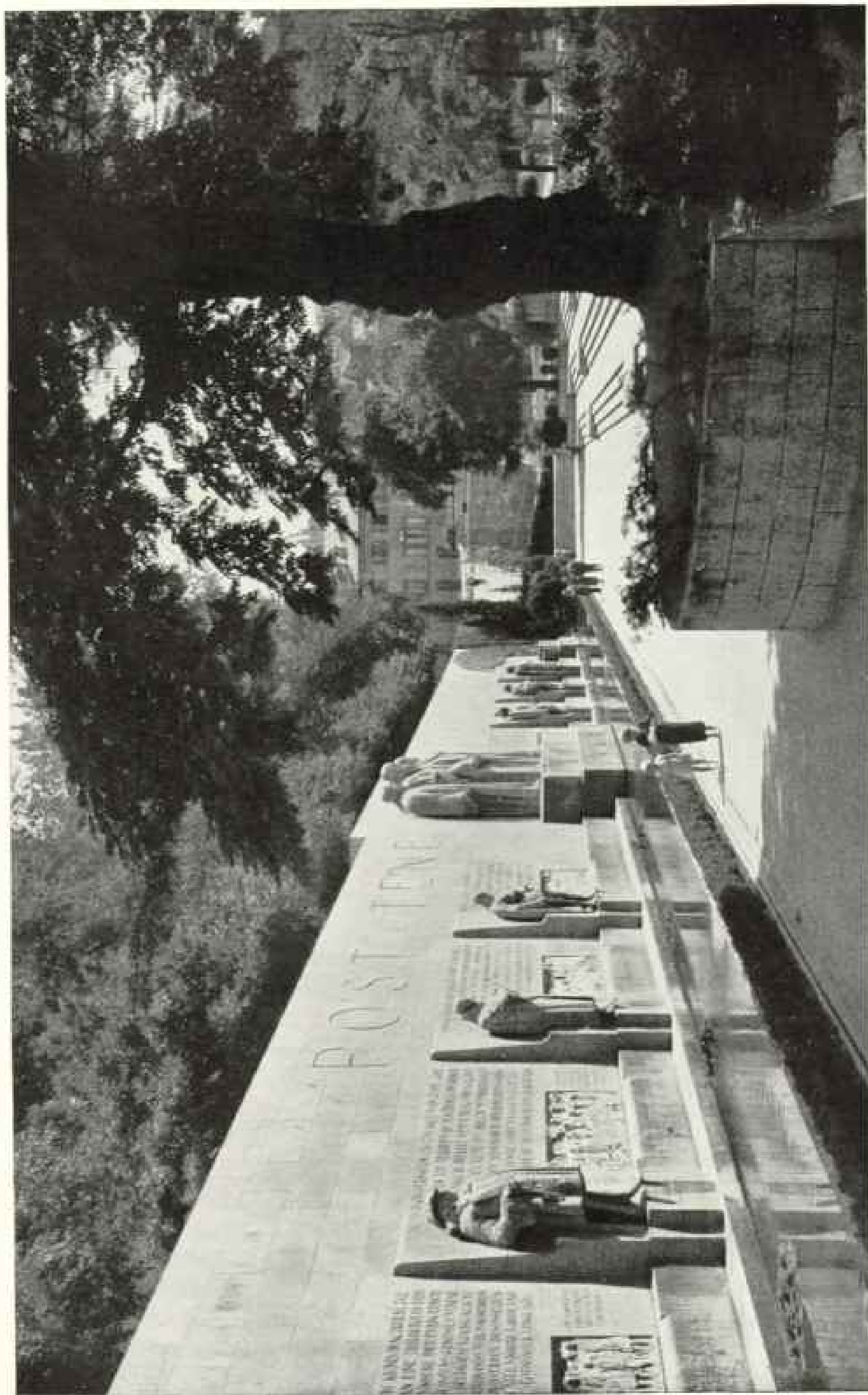




Photograph Des Nations

WALLED BY ARMED NEIGHBORS, THE ALERT SWISS ARMY "KEEPS ITS POWDER DRY"

Here a division of the citizen army is passing in review before admiring crowds near Lausanne. The Swiss held their annual war maneuvers while the Nyoon Confederence on submarine piracy was sitting. Though Switzerland maintains only a small standing army, every man up to the age of 49 is a member of the trained reserves, and younger men are called out for maneuvers annually. The Swiss mountain passes are heavily fortified. The national flag, at the head of the column, bears a white cross on a red field, a device that dates from the Crusades.



Photograph by Melville Bell Grosvenor

THEY SEEM TO STAND AT PERPETUAL ATTENTION—THESE LEADERS OF THE REFORMATION, WHO MADE GENEVA "PROTESTANT CAPITAL OF EUROPE!"

Facing the tree-shaded Promenade des Bastions rises this wall of gleaming white stone against the city's ancient ramparts. The four central figures are Guillaume Farel, John Calvin, Theodore de Beze, and John Knox, noted leaders of the Protestant Reformation of the 16th century. The smaller figures represent other heroes of Protestantism, including Roger Williams, who championed freedom of worship in the American colonies.



Photograph by Bernard F. Rogers, Jr.

SHARP-PROWED SIDEWHEEL STEAMERS BEAR SIGHTSEERS AROUND THE LAKE

This is a small steamboat landing on the southeast edge of Vevey, where begins Lake Geneva's "Riviera," with hotels and resort towns lining the shore for miles to the lake's east end. Almost every lake-side town "puts its best foot forward" along the shore front, with rows of flat-topped plane trees like those in the foreground, a sea wall, pleasant shaded walks, flower beds, and benches.

nourished many a young American. Near by stands the Castle of Blonay, owned to this day by the same Blonay family which has called it "home" for nearly 800 years!

Behind Vevey the mountains begin to rise higher and higher as you travel toward the east end of the lake. Strung out along the shore is a series of towns, known collectively as Montreux and chiefly devoted to the pleasure of the vacationist, with almost a solid line of hotels along the waterfront.

A YODEL AT CLOSE RANGE

I had heard many yodelers in America, but never one in Switzerland until one morning in Montreux as I sat on a bench

by the lakeside. Down the path came a stalwart youth in shorts, hobnailed boots, and huge knapsack, and sat on a bench a few yards from mine.

Suddenly, without warning or apparent reason, he burst into a full-throated yodel. For several minutes his song went on. Then he shouldered his knapsack and was off, leaving me to ponder on what could have inspired that sudden outburst.

Homesick for a fresh fruit drink one day, I entered a tidy little Montreux tea-room and asked if they had fresh orange juice. The waitress beamed "Yes," and hurried off.

After a long interval she returned bear-

ing triumphantly on a tray a large pitcher of water, a bucket of cracked ice, a tiny envelope containing granulated sugar, and a glass in the bottom of which was a tiny portion of concentrated orange syrup! I mixed and drank my synthetic "orange juice" in defeated silence.

#### THE LAKE'S BEST-KNOWN CASTLE

Looming cold and gray by the lake shore, but dwarfed by the giant green mountain above it, solidly stands the Castle of Chillon, immortalized by Lord Byron's poem, *The Prisoner of Chillon*.

The castle is built on a rocky island only a few yards from the mainland, commanding the "bottleneck" where the mountain slopes down precipitously to the shore, leaving only a narrow passage along the edge of the lake at its base (page 732).

Today, luxurious international trains roar past here on their way to the Simplon Tunnel, the main route from Paris to Italy. For centuries this narrow pass has been a main highway of travel, and whoever held the castle could control the traffic on the shore.

"In Chillon's dungeons deep and old" you can see where François Bonivard, the prisoner made famous by Byron's poem, was chained in durance vile.

"In each pillar there is a ring, and in each ring there is a chain," the poem goes on, and the guide will show you the very pillar and iron ring to which Bonivard was chained for four long years.

#### BONIVARDS OF FACT AND FICTION

But there were two Bonivards—one of fact and one of fiction, and, as is often the case, the fictitious Bonivard, depicted in Byron's poem, was by far the more romantic. Byron pictures him as a man persecuted and imprisoned because of his religious faith.

Actually Bonivard was a young Genevan who waged guerrilla warfare against Savoy, in what is now France. The Duke of Savoy finally captured him and imprisoned him in the Castle of Chillon, not for his religious views but because he was a troublemaker.

Chillon is the kind of castle you expect all castles to be. A drawbridge connects it with the mainland across a natural moat formed by the lake. Its thick walls rise sheer from the edges of its rocky isle, and in the dungeons the rough rocks of the island protrude through the floors.

You can see the "oubliettes," dark holes into which poor wretches were thrust through trap doors and left to starve; and in contrast the spacious banquet hall and private apartments above; the torture chamber with its ancient wooden pillar to which were attached the ropes by which victims were hoisted while hot irons were applied to their feet; the execution chamber with its gallows; and an exquisite small chapel.

Beyond the castle is peaceful little Villeneuve and here the lake steamers detour far out from shore to avoid the shallows where the muddy Rhône flows down from the mountains into the lake through a wide, flat level valley between the vast peaks.

Where the French-Swiss border comes to the edge of the lake, on its south shore beyond the Rhône, is the romantic frontier-straddling town of St. Gingolph, half in Switzerland and half in France.

Here mountains rise up sheer from the lake, stern and forbidding, with a blanket of dark pines clinging precariously to the towering cliff faces. The rocky summits, touched when I saw them with the season's first snow, looked like well-browned bran muffins sprinkled with powdered sugar.

#### UNIFORMS FLOWER AT BORDER TOWN

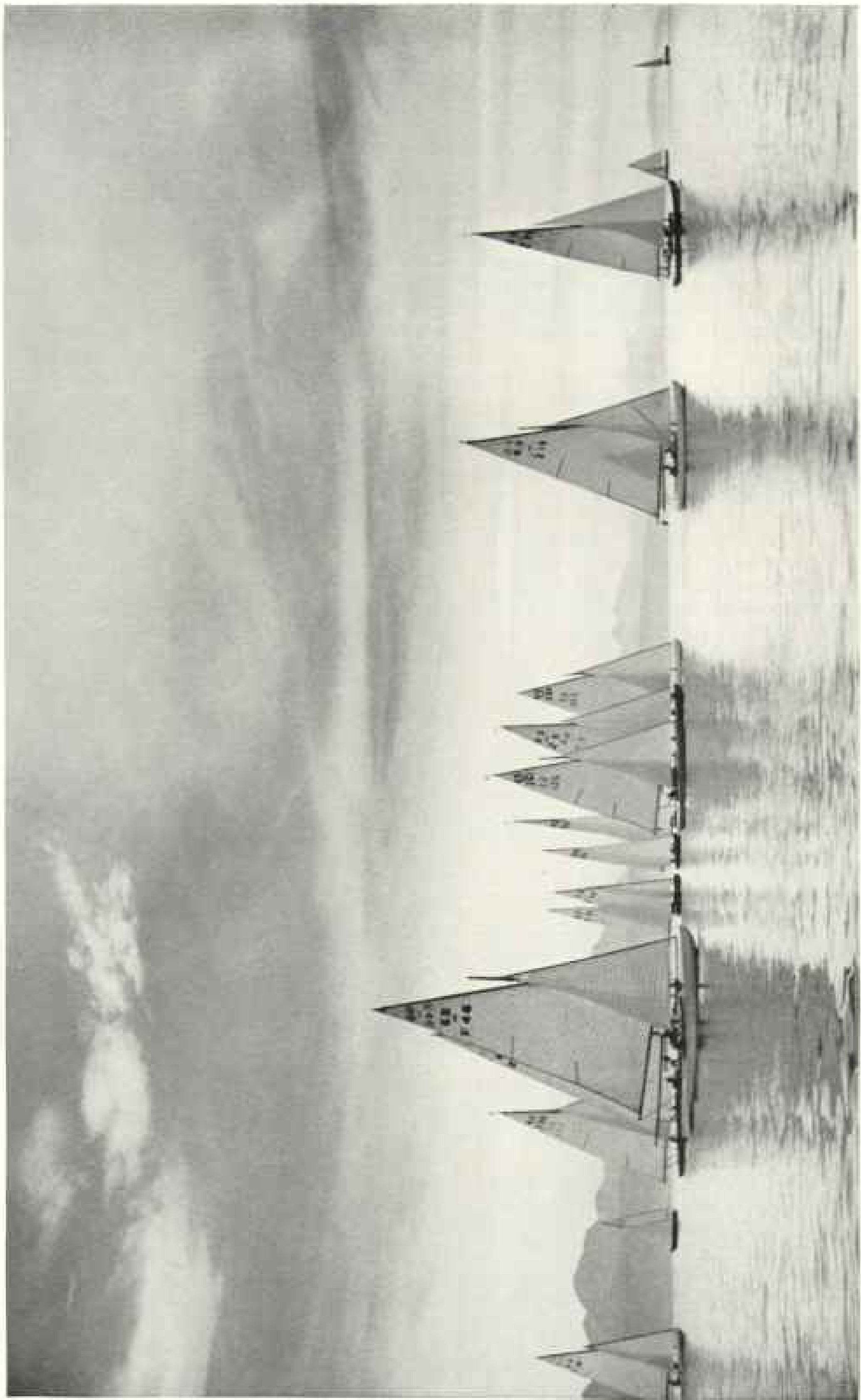
A mountain stream, the Morge, tumbling down from the heights, forms the boundary line, and to guard it St. Gingolph seems to have almost as many customs officers as townspeople. On the Sunday afternoon when I explored the town, each of the three or four bridges across the stream was guarded by a gray-green uniformed Swiss officer, though most of them seemed to have little to do but gossip with the neighbors.

Across the brook, French inspectors, resplendent in blue uniforms with wide red trouser stripes, all gathered around the one bridge used by auto traffic.

One church serves both Swiss and French parishioners of the fishing town, and it is located, as is the cemetery, on the French side of the frontier. So the Swiss must go to France to go to church, and when they die, their bones rest in foreign soil.

From St. Gingolph west to Hermance, only eight miles from Geneva, the south shore of the lake is French. The wild mountains gradually recede from the shore and give way to rich farm country.

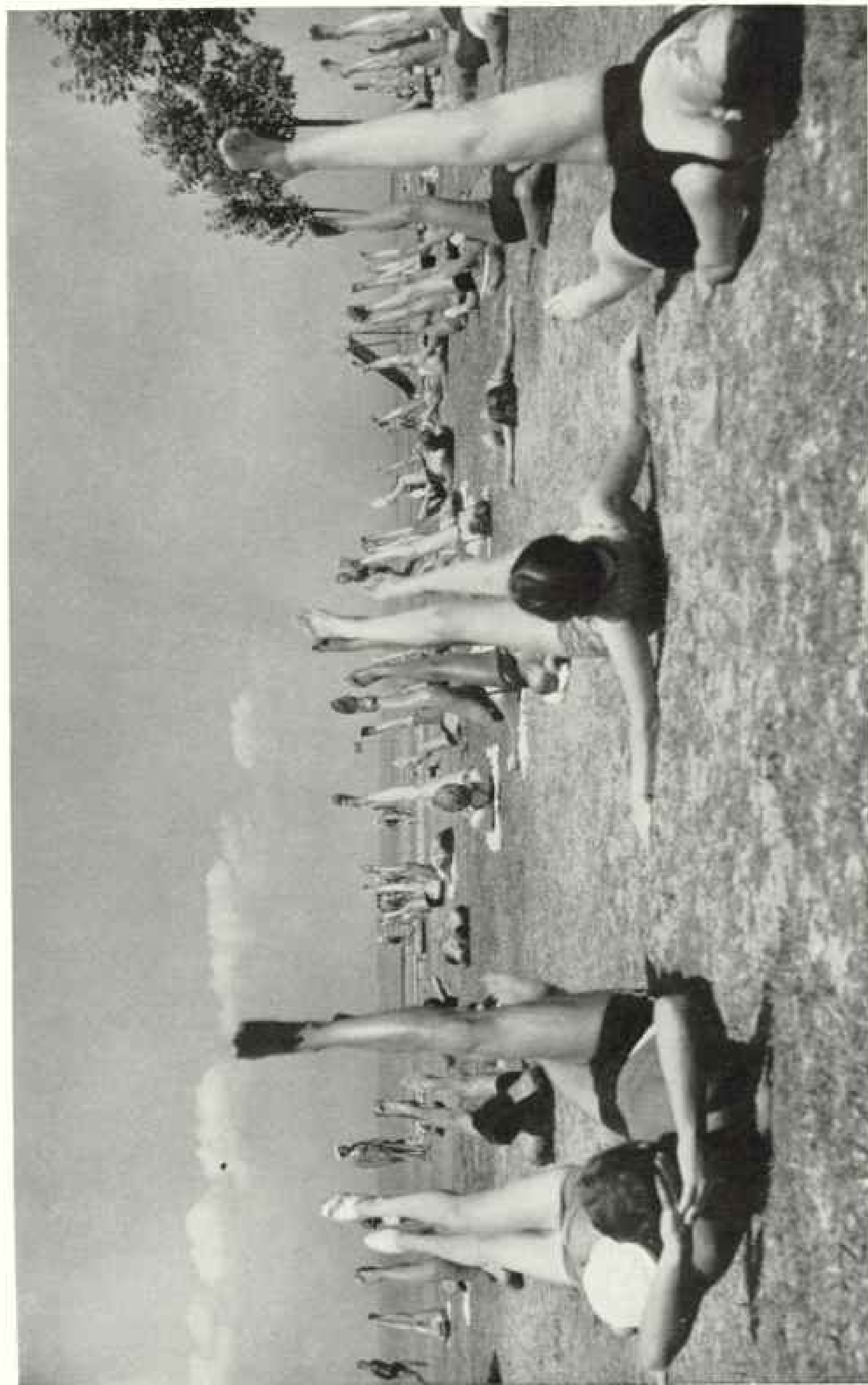
But you see no scattered, individual farm homes, as in America. The French farmers live in huddled villages, most of the stone



Photograph by C. H. Pilet.

WHITE SAILS, DEEP BLUE WATER, AND GREEN MOUNTAINS—SUCH IS A REGATTA, HIGH ABOVE SEA LEVEL, ON LAKE GENEVA

Yachting is one of many water sports that flourish around Lake Geneva during the summer season when its resort hotels are crowded. This fleet is off Ouchy, the port of Lausanne on the north shore, which has the only natural bathing beach in Switzerland. When stone was a more popular building material than now, capacious barges with lateen sails transported tons of it down the lake from quarries at Mellierie on the French shore.



Photograph by Gilbert Meylan

HERE ARE SWISS MOUNTAIN CLIMBERS—IN REVERSE!

On the lake shore near Geneva, 1,230 feet above sea level, these bathers are combining a sun bath with physical drill led by an instructor whose services are free—and why not! Though Lake Geneva is fed mainly by the River Rhône, which originates in a glacier, its waters are not too cold for bathing, and aquatic sports are popular.



Photograph by Melville Bell Grosvenor

HITCH-HIKERS ARE RARE; EVERYWHERE ARE REAL HIKERS IN HOBNAILED BOOTS

These schoolboys, walking with their schoolmaster and carrying their lunch in knapsacks, are typical of groups encountered along the smooth Swiss roads. The Swiss carry all kinds of loads on their backs instead of in their hands—from school children who pack their books in miniature knapsacks to grocery boys who bear huge baskets on their shoulders while riding bicycles.

houses weatherworn and ancient. But here and there new ones are rising and an occasional American-style filling station appears. Around the villages the fields are laid out in long, narrow strips.

As we approached Evian-les-Bains, a woman was washing clothes at the lake side, while near by a snow-white swan swam back and forth, as if to give her a standard for the whiteness of her laundry.

EVIAN FAMOUS FOR WATERS

Evian, with beautiful, flower-decked shore park and red roofs above the trees, is a noted resort where in the season French people come for its alkaline mineral waters, known since Roman times. Drowsy horse carriages waited hopefully for trade on the promenade by the steamer wharf.

A traveling orchestra came ashore from the boat, the smallest man carrying the largest instrument, an enormous harp. A street cleaner leaned on his twig broom to gossip with green-aproned hotel porters sent to bring up luggage from the wharf.

Back from the lake are exquisite private villas, pure white amid trees and lawns.

The casinos on the French shore are sometimes a lure for Geneva "sports" who like to gamble. A prudent Swiss Government forbids gambling for higher stakes than two francs (about fifty cents), so some Genevans cross the border for a fling where "the sky's the limit."

At Thonon-les-Bains, on the hill above the wharf, a gilded statue of Christ blesses all voyagers as they come ashore. Back of the low green hills along the lake rise higher snow-capped mountains. As a black-robed priest stepped onto the dock the stiff breeze blew his shallow "shovel" hat into the water. Half a dozen small boys leaped to the rescue with their fish poles, while the amused priest handed down his crook-handled umbrella as aid.

Thonon, too, has its mineral springs. Here, as at Geneva, have been found the remains of piles on which prehistoric lake dwellers built their huts over the water.

Geneva\* spreads itself around the west end of the lake, where the Rhône flows

\* See "Millennial City: The Romance of Geneva," by Ralph A. Graves, in *THE NATIONAL GEOGRAPHIC MAGAZINE*, June, 1919.



Photograph by Bernard F. Rogers, Jr.

#### SWITZERLAND IS A LAND FLOWING WITH HONEY AS WELL AS MILK

These beehives are painted in various colors and designs, according to local custom, and the low-pitched roofs resemble those of Swiss chalets. In the background is the venerable Castle of Blonay, on the north shore of Lake Geneva near Vevey (page 736). The tower dates from 1175 A. D., and the castle for centuries has been in the hands of one family, the Blonays, who, in the Middle Ages, ruled twenty-five villages in the vicinity.

hurriedly out again to start its journey down through France to the Mediterranean.

Coming in by boat, you first see Geneva's neat, formal water front, larger edition of those of the other lake cities. White hotels line the shoreline park behind the ranks of clipped trees, and beyond them the buildings of the city rise on either bank of the Rhône.

If you arrive on a week end or holiday, you will see the famous fountain, held to be Europe's highest, spouting its pure white plume 295 feet above one of the harbor breakwaters, with the breeze carrying a feathery blade of spray off to one side.

#### AN ISLAND GRANDSTAND FOR GENEVA

A good way to see Geneva life is from Rousseau Island, a tiny garden-spot set in the midst of the river just where it flows out of the lake. It is in the heart of the city, yet separated from it by the waters of the Rhône on either side.

The famous philosopher's books once were burned in Geneva, but later this act was regretted and he was invited to return

to his native city. Now a fine bronze statue of him sits under the island's trees, though on the day of my visit it was draped in an ignoble network of cobwebs.

Sipping coffee at a table of the island's little outdoor cafe, I watched Geneva go about its business. From the white hotel fronts floated the many-colored flags of the 50-odd member nations of the League, signifying that their delegates were in residence there.

Jazz music from the orchestra of a sidewalk cafe floated across the water. White steamers scurried in and out between the twin breakwaters. Above the rocky precipice of Salève Mountain to the southeast, the white peak of Mont Blanc loomed, distant and unreal.

In front, the Mont Blanc Bridge, busiest and nearest to the lake of the many bridges across the Rhône, carried a bustling pageant of Geneva life. Everyone in Geneva seems to ride bicycles, rain or shine. In five minutes I counted 96 bicycles and 94 other vehicles crossing the bridge.

I saw a man riding a bicycle and carry-





A WISE MAN FROM THE EAST PRESIDES AT A LEAGUE SESSION

One of the world's richest men is the Aga Khan (center), a direct descendant of Mohammed, religious head of three Moslem sects, and a delegate from India, who was elected president of the 1937 session of the League of Nations Assembly at Geneva. In India, on certain occasions, he is presented with his literal "weight in gold" by loyal followers. He likes race horses and owns some of the fastest in Europe. This picture was taken when the League Assembly was meeting in temporary quarters before moving into its new palace.

ing a long ladder on his shoulder; another with a huge floral wreath; a girl balancing an enormous basket of laundry on the handle bars; a man carrying a chair. But most amazing of all was a hunter in full regalia, steering his bicycle with one hand, balancing his shotgun on his shoulder with the other, and leading on a leash his hunting dog, which trotted alongside!

The luxurious new white palace of the League of Nations, with its library given by John D. Rockefeller, Jr., is nearing completion in a green park overlooking Geneva and the lake. Peacocks strut about its sloping lawns, and huge gatekeepers, resplendent in blue uniforms, white belts, and "Napoleon" hats, guard its doors.

#### VIEWING A WORLD CONGRESS

After much scrutiny of my passport and other credentials, I gained entrance to the League Assembly.

An interpreter was repeating in rapid French the speech just made in English by a South American delegate, but many of

the audience paid scant attention. Some delegates were reading newspapers; others stood in groups in the aisles, whispering; still others walked in and out, or leaned over to shake hands with colleagues.

"It reminds me of the United States Congress," said another American sitting next to me.

The Aga Khan arose to announce sadly in English the death, in Praha, of former President Masaryk, of Czechoslovakia. As soon as he was seated the interpreter at his left jumped up to repeat his words in French. The Assembly stood with bowed heads for one minute in silent tribute.

Outside, a large concert orchestra played in a pavilion at the lake side. Ice cream vendors set up little tables around their stands. Bathers swarmed about the municipal bathing pier in the harbor. White sails of yachts flashed far out on the blue lake. As night fell, strings of colored lights sparkled in the lake-front parks, and flood lights made the harbor fountain a slender plume of fire.

# INSIDE CAPE HORN

BY AMOS BURG

ACTION OF "OS MACKENZIE'S TRAIL TO THE POLAR SEA," "TODAY ON THE VIRGIN TRAIL OF 1898," "NATIVE SON'S RAMBLES IN OREGON," ETC., IN THE NATIONAL GEOGRAPHIC MAGAZINE

*With Illustrations from Photographs by the Author*

**S**OUTH AMERICA tapers south from the hot Equator to plunge her foot into the cold Antarctic waters at Cape Horn.

North of the Cape the lofty Andean chain straddles half the continent and strews the Pacific frontage with wind-bullied archipelagoes.\* For centuries Cape Horn commanded all ocean traffic between the Pacific and the Atlantic. Its stormy waters were at once training school and diploma for deepwater sailors.

When I entered a ship's fo'c'sle at 14, yarns spun by mahogany-faced sailors who had rounded the Horn whetted my desire to see at first hand what lay inside the inhospitable coasts they sometimes sighted.

As years went by, my vision was nourished by scanning maps and planning to sail in my own boat after the oaken-hearted discoverers who had passed this way into the Great South Sea.† In co-operation with the National Geographic Society, I prepared to make my voyage through wild Fuegian seas.

## CONDEMNED SURFBOAT BOUGHT AT AUCTION SALE

In a remote cove on the Oregon coast, I located a condemned 26-foot United States Coast Guard surfboat, husky enough to withstand a Cape Horn squall, small enough to ship more than the distance of the earth's diameter to the Strait of Magellan.

On the bow of the boat bought at auction and built for safety, not for comfort, I constructed a low cabin, and, to save weight and space, mounted an outboard motor in an inboard well (pages 745, 765). The cockpit aft was left open; self-bailing cocks kept this deck dry.

Dorothy, daughter of a family who could afford it, smashed a bottle of her father's champagne on the bow and christened her *Dorjun*, a composite of "Dor-

ette" and "Junior" Fleischmann. I had sailed around the world as cameraman on their yacht *Camargo*.

To save money I signed as supercargo on the McCormick liner *West Mahwah* and, with the *Dorjun* lashed to a deckload of lumber, sailed southward through 81 degrees of latitude to Buenos Aires. Captain Larsen shared my plans and adventure. He had fought gales off Cape Horn and navigated the *West Mahwah* 14 times through the Strait of Magellan.

## WISCONSIN BOY MAKES GOOD

The captain saw my need for a companion.

"Pick any man who wants to go; I'll pay him off in Buenos Aires," he said.

Six volunteered. I had studied the men, and chose Roy Pepper, ordinary seaman, from St. Croix Falls, Wisconsin (page 749). He could smile with his face full of stinging spray. Later I found that he could bake biscuits without an oven and cut his hair with a jackknife.

In the next eight months Pepper and I would find adventure, mishap, and triumph.

I had sailed from the Columbia River in early autumn. Two months later we changed to the steamer *José Menéndez* at Buenos Aires. After ten days more of southward sailing along the coast of Patagonia, we entered the Strait of Magellan by Cape Virgenes from the east. Summer was beginning in the Southern Hemisphere.

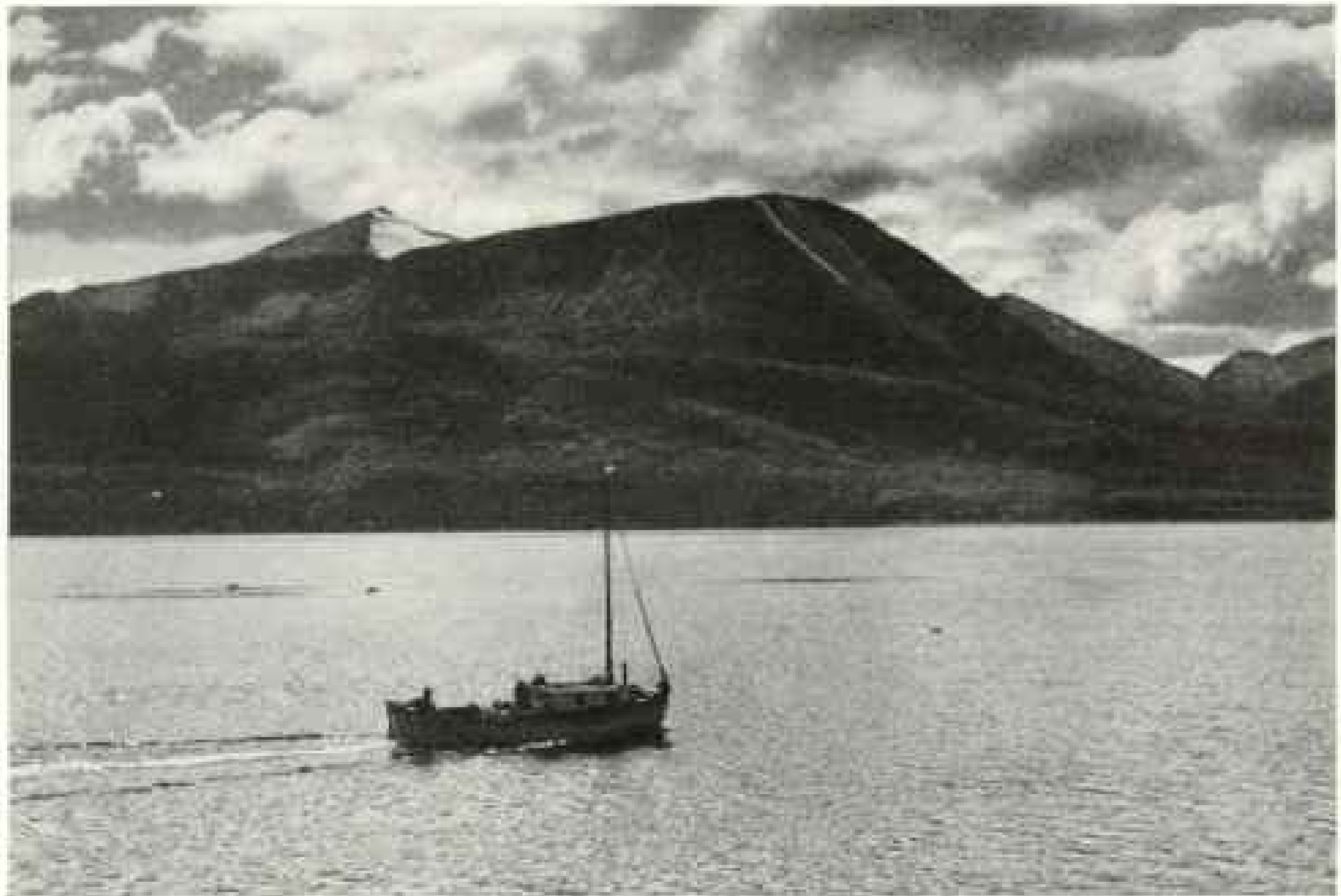
We swept through the churning tides and in late afternoon dropped anchor in the roadstead at Magallanes (Color Plates I, II, III). The world's most southerly city lay scattered on the continental plain before us. Night came on with squalls of wind and rain.

The *José Menéndez* was due for clearance. Hurriedly we were launched over the side into the breaking seas of a southwest gale and towed to an anchored hulk. There we made fast for the night.

The *Dorjun*, her planks warped by exposure to tropical sun and strained by

\* See Map of South America, published as a supplement with this issue of THE NATIONAL GEOGRAPHIC MAGAZINE, and map on pages 746-7.

† See "Greatest Voyage in the Annals of the Sea" (Magellan), in THE NATIONAL GEOGRAPHIC MAGAZINE, December, 1932.



"DORJUN" HEADS TOWARD CAPE HORN FROM USHUAIA WHILE A STORM BREWS OVER THE MARTIAL MOUNTAINS

Reads the log: "We sailed around towering walls of rock that rose awry and featureless in the twilight. Shags from their nests on rock shelves peered down curiously. The sky darkened, casting an evil scowl on the water. A squall rode down from the mountain tops. Wind struck the water like a bomb. We crawled along in the half-light scanning the shore for an anchorage, and finally found a place in a nest of rocks."

hoistings, leaked badly. We bailed all night to keep her afloat, water pouring through every seam.

"This is a joke," Pepper laughed. "To be sinking within an hour after being launched on Magellan Strait and tied to a barge at that."

The roadstead was open and rough from the prevailing southwesterlies. Nowhere could we find a sheltered berth. In wandering about town next day, I met Francisco Sorenson. By sunset he had hauled the *Dorjun* from the water and cradled her on the slipway at the local shipyard he superintended.

Here we lived in our cluttered cabin as chipping hammers pounded and riveting guns chattered around us.

#### GOLD MINING "SPOTTY"

Magallanes has a population as polyglot as Ellis Island's when the ships come in. Gold seekers in the nineties rushed from world seaports to dig their fortunes from Magellan beaches, where storms

thresh the metal from clay banks and strew it in the tidal wash.

"How's gold mining today?" I asked an antipodean sourdough.

"Spotty," he replied. He pointed to otter skins, drying on the porch of his weather-beaten shanty.

"These are my nuggets now," he added, "though sometimes after storms I still find a few flakes of gold."

When Panama lopped 9,000 miles off the distance between New York and San Francisco, Magellan Strait lost its importance as the interocean highway, and Magallanes lost its lucrative traffic in ship repairs and supplies. Sheep raising, backbone of Fuegian prosperity, has built the town from log huts and flapping canvas of gold-rush days into an energetic stone municipality of 25,000 people.

We met sheep ranchers, merchants, seamen, and otter hunters, who visited the *Dorjun* with advice both good and bad, but ever copious.

Some were old-timers who had panned



AN OLD-TIMER HELPS CHART A COURSE FOR "DORJUN"

The Land of the Horn resists man's conquest, so the crew welcomed every wisp of information. Some large "islands" shown on maps are really archipelagoes, yet uncharted. Seamen, fighting frequent gales, have cursed them in many tongues. Even today the channel is a fabled region of mythical sloths, 8-foot savages, and some of the world's worst storms. The author sits near the tiller.

gold in the flush nineties, fought Ona Indians on Tierra del Fuego when the sheep farmers put a bounty on them, worked in sawmills, and hunted seals on the outer islands.

Two Americans, a wool buyer from Boston and a buyer of tripe from Chicago, came with the rest. All shook their heads dolefully and were of one opinion: we could never make it in our toy boat.

One man cautioned me, "Son, don't sail down there. Even if the winds don't capsize your boat, you'll never see the mountains through the rain. If you go, drag your coffin with you."

"Why do you misrepresent your climate?" I asked, pointing to the sun.

"You'll see," he concluded mournfully.

"Who was that pessimistic fellow?" I asked Sorenson.

"Oh, he's the secretary of our Tourist Club."

The marine governor, Captain Arroyo, sent for me. He had taken a distant look at our old surfboat and condemned her as too small. He reminded me that these were the worst waters in the world.

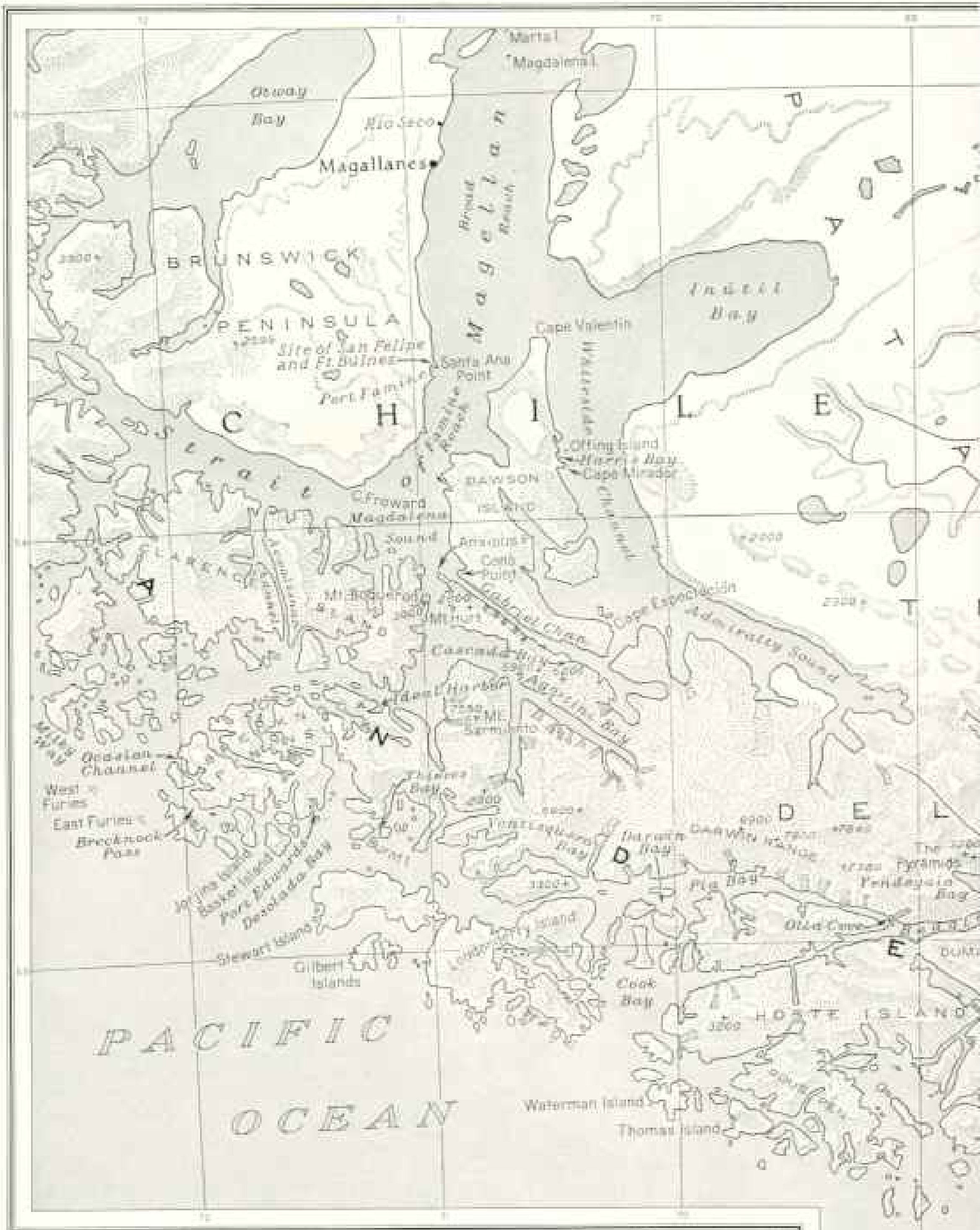
I must have pleaded eloquently for adventure. When I left his office an hour later my arms were full of charts, and my pockets were stuffed with Mrs. Arroyo's cookies. Captain Arroyo had generously promised co-operation from all naval vessels under his jurisdiction.

#### GARNERING ADVICE AND SUPPLIES

During our two weeks on the slipway we recruited advice and supplies, taking aboard bacon, beans, flour, dried fruit, breakfast foods, powdered milk, and hard-tack. We sold the lead ballast in the stern and bought potatoes with the money. We replaced the potatoes we ate with rocks to keep the stern down.

We skimped our purchases and paid cash. The generous Chileans did not doubt our honesty; they merely questioned whether we should ever return to exercise it.

We gave particular attention to cartridges, fishing lines, and advice on how to live off the country. I studied the wind and weather. There was plenty of both; often three seasons in an hour. Yet I



Drawn by Newman Dunstead

#### JAGGED, GLACIER-CLAD ISLANDS MAKE UP THE LAND OF THE HORN

Through this region of everlasting storms at the toe-tip of South America (inset and South America Map Supplement), Magellan sailed in 1520, navigating the famous Strait named for him. The mountainous area to his south, "stark with eternal cold," he named Tierra del Fuego, Land of Fire, because the natives had so many fires blazing. Gold mining once flourished in the region, but has largely given way to sheep raising and otter and seal hunting. In a 26-foot boat, the author and a lone companion explored "Inside Cape Horn."

Defonso  
Islands





LITTLE MEN OF THE SEA COME DOWN TO GREET "DORJUN"

Their mission was born of curiosity, not friendship, for they resented intrusion and often bit the visitors viciously. From the "jackass-penguin" colony on Offing Island arose a confusion of queer sounds suggesting the braying of donkeys, the honking of horns, and the mooing of cows (page 750).

enjoyed the bracing vigor of the winds blowing day after day across the sterile Patagonian plains.

#### FIRST COLOR PLATES OF THE LAND OF THE HORN

When we had stowed the bulk of our camera supplies aboard, our tiny cabin was like a department store counter during a clearance sale. To films and cameras we gave first place. As far as we knew, we were making the first natural color plates in the Land of the Horn.

The shipyard was such a friendly place that we lingered, always scheduled to leave within five hours for Cape Horn. Our delays became embarrassing.

"Still here?" persons we met remarked. "I thought you'd left a week ago." We walked to town through alleys.

We launched the *Dorjun*. I left Roy aboard and rowed ashore for our sailing papers. An easterly blow came up during my absence and the *Dorjun* dragged her anchor into the line of breakers. There she pounded heavily. For 24 hours I was unable to go aboard. By a miracle our anchor held.

"You have too small anchor," a Yugoslav told me. "My schooner, she 45 tons. Three years ago bad storm lift her over sea wall. She stick her jib boom into window of Cosmos Hotel."

I scurried about and borrowed from a fisherman friend an anchor twice as heavy, with large hooks. The Magellan rule is: "Carry one-third more anchor, one-third less sail."

At dawn I boarded the *Dorjun* with the anchor and a bon voyage lamb roast from the Sorensens, rowing out in the *Cabo de Hornos*, our new dory. I had bought it from a Swedish miner for \$16.

Southward we bowled along down Broad Reach toward strange, glistening snow peaks. The ancient hulks in Magalanes roadstead dropped astern, swinging on their four anchors like great weather vanes, their bowsprits pointing always into the wind. Beneath us were the springing decks of the *Dorjun*; ahead were cold, gray seas, uninhabited islands—and Adventure.

We tacked into our first anchorage at Santa Ana Point, 32 miles below Magalanes. At this point there comes a drastic



"NO BACK TALK," PEPPER WARNS SAUCY PENGUIN MASCOTS

Captured on Magdalena Island in the eastern Strait of Magellan, the pert little fellows soon became friendly with the "crew," Roy Pepper, from St. Croix Falls, Wisconsin (page 743). In the far south the adventurers found three kinds of birds using their wings for other purposes than flying: penguins employed them as fins; steamer ducks, as paddles; ostriches, as sails.

climatic change. The dry Patagonian plains rise abruptly into cordilleras where peaty, elastic moss and beech forests are drenched by endless rains.

A few miles to the west begin storm-beaten archipelagoes of mountainous islands—a belt 100 miles broad at its maximum. From Cape Horn they reach more than a thousand miles north along the coast of Chile.

#### BEYOND WHITE MAN'S LAND

Beyond this point the white man does not dwell. A ruthless desolation of tundra indigestible for sheep has stopped the westward march of sheep fences here at the base of the Andes.

We enjoyed one of those rare intervals of good weather, sunshine, invigorating winds, and clear blue skies. As I wandered through the beech forests with camera and flower press, the curious creeper followed me with its harsh, scolding twitter. Flocks of long-tailed parakeets screamed at our approach.

There were practically no insects here. On Arctic prairies at higher latitudes, the

spongy tundra breeds countless mosquitoes. In the western channels where wind always holds dominion, we saw only two all summer long.

Where the *Dorjun's* anchor clutched the mud at Port Famine, Spain established San Felipe on Magellan Strait, 60 years after Magellan's voyage. Pedro Sarmiento de Gamboa, unaware at that time of the passage around Cape Horn, sought to fortify the strait to keep Spain's enemies from entering the South Pacific Ocean.

After landing colonists in the outer roadstead, weather-weary captains fled back to Brazil. At this miserable place, the colony, harried by Indians, succumbed to starvation and exposure.

#### LUMBAGO THE OTTER HUNTERS' LAMENT

After the easier passage around the Horn was discovered, the Land of the Horn remained a no-man's land, shunned and forgotten for more than two centuries. In 1843 the young Republic of Chile raised her lone star flag over Fort Búlnes to begin permanent occupation.

Two small schooners of otter hunters



were anchored here awaiting favorable winds that would sail them around Cape Froward.

Olsen, a Norwegian from the *Victoria*, rowed alongside, his back bent like a stuck hinge.

"Lumbago," he explained. "Most otter hunters suffer from it. This cursed chill wind blows into a man's very bones." We gave him a bottle of liniment.

"This is a man's land," I mused; "no place here for a woman."

Olsen laughed and pointed his pipe stem at the *Indio*. On deck sat three women. "An Alikuluf squaw and her two daughters," he explained. "Youngest is 13. She was born aboard. Father is a Spaniard. They're better'n him at huntin' otter."

We sculled over to the *Indio*. A wizened Spaniard greeted us. He offered us refreshments—whiskey. Olsen downed his with a shuddering gulp. "That's what he trades the Alikulufs for skins," Olsen explained. "No wonder most of them have died."

The Spaniard hauled out his watch. It was time to be hungry. "Get mussels and catch fish," he ordered.

His squaw and his daughters climbed dutifully into a dory and shoved off. Olsen looked at him with undisguised envy.

In the night the cutters, hoisting sails to a fair wind, departed. The bay seemed lonely and empty. We hoisted anchor and bore away across Famine Reach, part of Magellan Strait, around Cape Valentin and late that night arrived at Harris Bay, Dawson Island (Plates VII and VIII).

A Salesian mission station with priests ordained in Italy was begun here for the salvation of the Ona and Alikuluf Indians in 1889. Hardy sheepmen, after trekking south through Patagonia, had crossed the strait to the grasslands of eastern Tierra del Fuego.

#### DROWNED SHEEP MAKE BRIDGE FOR OTHERS TO CROSS

Ona Indians, faced with loss of their guanaco pastures, began to steal the white "guanacos." Ghostlike, they appeared on stormy nights and drove away entire bands. At streams they drowned scores of sheep to provide bridges for others. In remote valleys they broke the legs of survivors so they could not run away.

Desperate, on a lawless frontier, some of the sheepmen considered it cheaper to kill

than to civilize. They shot Indians on sight and professional Indian hunters were paid one pound sterling for the ears of man, woman, or child. The primitively armed Onas were no match for mounted horsemen using modern rifles on open plains.

To eradicate scandals arising from these massacres, troops herded the Indians and shipped them to Dawson Island Mission. Here, smothered in clothing, set to work in sawmill and at complicated looms, these children of the fresh winds died. Today only 25 Onas survive on Tierra del Fuego.

After the mission era, a sawmill flourished for 15 years, supplying lumber for treeless Patagonia, then abandoned Harris Bay to sheep farming. Kenneth Morrison was the boss of 30,000 sheep here. A more generous person I never met.

#### THE GEOGRAPHIC'S FARTHEST SOUTH AMERICAN MEMBERS

Mary Morrison, 13, had an astonishing knowledge of alien lands. She knew the creatures of her island home, the seals, penguins, and porpoises. Most of her information had come from *THE NATIONAL GEOGRAPHIC MAGAZINE*. The Morrises are the most southerly Geographic members in the Americas (page 761). When I asked her if she cared for dolls, she replied, "No, I like living things best."

Mary often rode, surrounded by her lambs. She guided Pepper and me on horseback excursions. Hector, a Chilean boy who rode with us, had learned American slang expressions from the movies at Magalanes. His stock replies to us were "O.K., baby," or "O.K., chief."

Beyond Harris Bay the *Dorjun* entered wilderness. We landed on an island to investigate mooing cattle and honking automobile horns. These strange sounds of barnyard and traffic were made by a colony of Magellanic, or "jackass penguins"—so called because they bray (pages 748-9).

They were the only one of the 17 known species of modern penguins we saw. We tarried for days, studying these little bird people with their absurd walk, dignified bravery, and almost human demeanor.

Earlier expeditions, with supplies depleted, clubbed thousands of penguins for food. Quaintly worded logs described how welcome was the fishy meat.

We photographed penguins as they commuted back and forth. Some lived in muddy slums by the water, others waddled

LAND OF THE HORN, AMERICA'S TIPTOE



ENVY OF EVERY BOY IN TOWN: MASCOTS OF VOLUNTEER FIRE-FIGHTING BRIGADES IN THE WORLD'S SOUTHERNMOST CITY

Though it lies almost literally at the ends of the earth, far down in the roaring forties, Magallanes, Chile, sparkles with civic pride and efficiency. Fire companies represent various nationalities of this cosmopolitan city of 25,000 people—Chilean, Spanish, English, Yugoslav, French (Plate III).



© National Geographic Society

Finlay Photographs by Amos Burg

OLD SPANISH FIESTA CUSTOMS SURVIVE IN THE GRIM "SIBERIA" OF ARGENTINA

Much farther south even than Magallanes is Ushuaia, on Tierra del Fuego. The town has only about 1,400 inhabitants, half of whom are criminals confined in the Argentine penal colony.



© National Geographic Society

Friday Photograph by Amos Burry

ON NAVY DAY, MAY 21, THE FLAG OF CHILE IS ESPECIALLY HONORED IN THE PLAZA OF MAGALLANES

The white in the flag symbolizes the snows of the Andes, the blue the color of the sky, and the red the blood shed by Chilean patriots in their War of Independence. The single star proclaims one central government.



© National Geographic Society

**VOLUNTEER FIRE FIGHTERS ARE MUCH ALIKE THE WORLD OVER**

Resplendently arrayed, they gather for drills while the populace looks admiringly on. In the rainbow ranks of these efficient fire brigades at Magallanes, organized like social clubs, are many of the leading citizens. Competition among the units is keen—until the central siren wails to call them into action in a common fire-fighting cause.

Finlay Photograph by Amos Barré

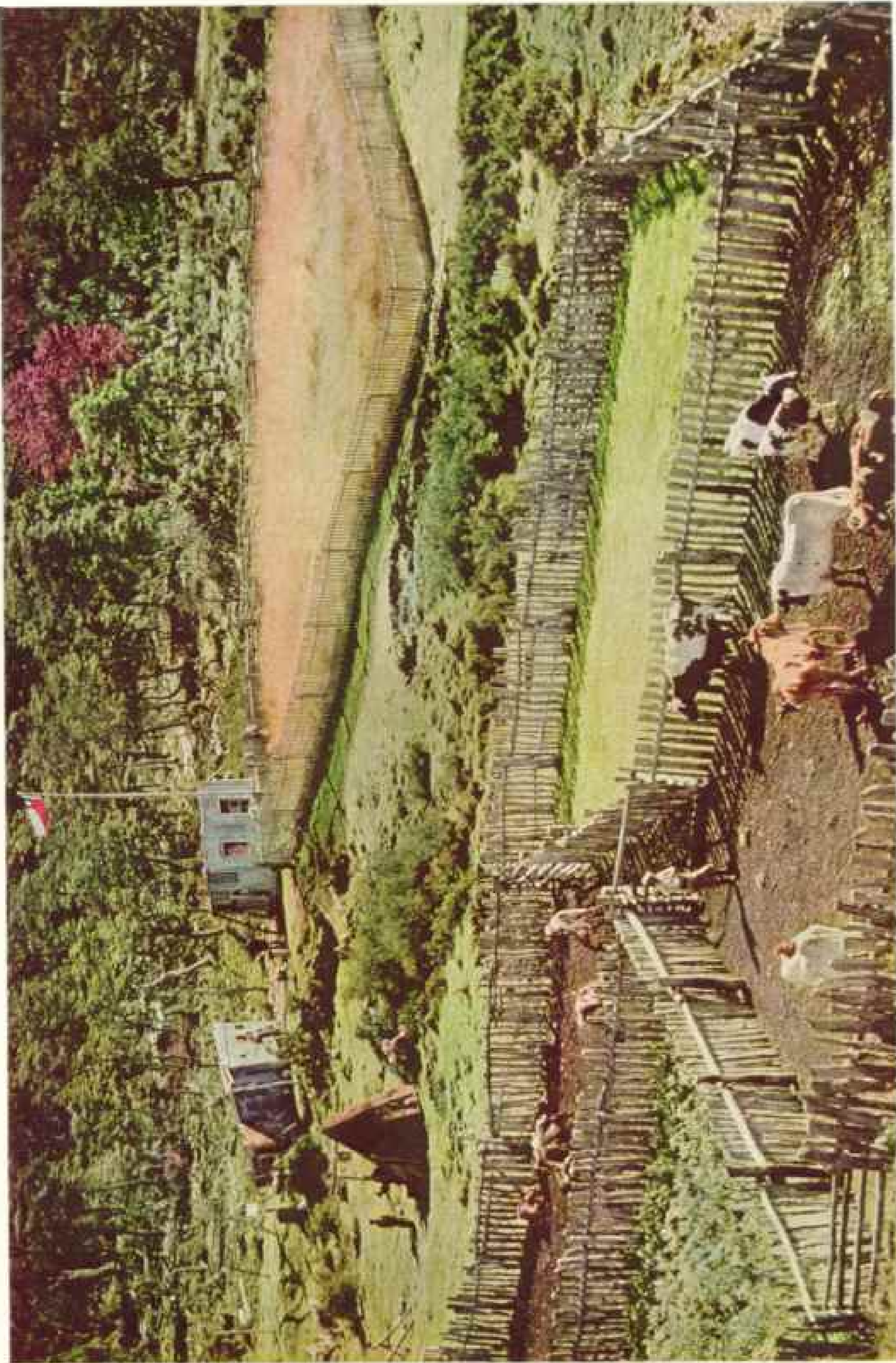


© National Geographic Society

Friday Photograph by Amos Barn

"WHITE HOUSE" OF THE CHILEAN GOVERNOR OF THE REGION IS THIS LONELY NAVARINO ISLAND HOME

In the red-roofed residence, looking across blue Beagle Channel to the Darwin Range on Tierra del Fuogo, lives the official (called a "subdelegado") who represents the Government of Chile in this southern outpost of the Republic. He supervises the maintenance of law and order in a wide and wild domain. Glistening white in the sun is tiny *Boqueron*, the author's boat, at anchor (nearest the shore). A Government supply ship, *Micaela*, sends ashore provisions for the trading store at the extreme right.



© National Geographic Society

COWS ARE CORRALLED FOR MILKING ON THE WORLD'S SOUTHERNMOST FARM

One building is a wigwam (left), for the occupant is Millisic, a Yaghan Indian chief, who stands beside the gate in the foreground inspecting the stock. The Chilean flag flies above his tract on Isla Hoste, south of Tierra del Fuego. However, sheep, not cattle, are the mainstay hereabouts

Finlay. Photograph by Anson Burg



© National Geographic Society

Fishly Photograph by Anna Berg

A CHILEAN NAVAL TRAINING SHIP THREADS THE MOUNTAIN-HEMMED PATAGONIAN CHANNELS

Autumn comes to Patagonia in May. Here, near Puerto Bueno, the mountains look wintry enough, but farther south the snow line at this season reaches the water's edge. Small roving bands of canoe Indians (Aikehuts) are the only inhabitants of the desolate lands that flank the Patagonian Channels. In these protected waterways ships escape the tempestuous seas encountered outside Cape Horn.



© National Geographic Society

GLINTING SNOW PEAKS, SHOULDERING OUT FROM TRANQUIL SEAS, THILL RIDERS ON DAWSON ISLAND

Finey Photograph by Amos Burg

Looking down Whiteside Channel from Cape Mirador, they see the magnificent white-crowned summits on Tierra del Fuego, "Land of Fire"—so named by Magellan because of the numerous campfires of Indians. The icy mountain wall borders Admiralty Sound, 45-mile-long funnel for howling westerly gales. *Doryan's* crew first sighted the range late one evening as the tiny boat rounded Cape Valentin, on the north tip of Dawson Island.





AFTER MONTHS OF MUTTON, CHILEANS WELCOME "WILD" BEEF

Horses are loaded with the meat of wild cattle that roam the forests of Dawson Island, south of the Strait of Magellan. When sheep raising became the chief grazing industry, steers wandered away and "went native." Hunters usually lasso them and lead them in to the town butcher.



© National Geographic Society

Finlay Photographs by Anna Burg

A PEACEFUL DAUGHTER OF THE ONCE DREADED ALIKULUFS STICKS TO HER KNITTING

Married and living comfortably on Dawson Island, she is far better off than most of her tribe, which exists miserably in a region of perpetual rains and gales. In the late nineteenth century the plunder-minded Alikulufs often savagely attacked the crews of passing vessels.

inland, through clay gullies hard packed by generations of penguin feet, to the most exclusive districts on the grassy heights. Each waddling bird seemed wholly preoccupied in avoiding misstep on the slippery slope that might send it tobogganing beachward, with consequent loss of dignity.

#### FLIGHTLESS BIRD PADDLES WITH WINGS

The Magellanic flightless steamer duck is another interesting bird of these waters. Whereas the penguin uses his wings for swimming, this species of the steamer (there also is a flying species) churns his like paddle wheels. We saw them on the rocks where their powerful bills crush the shellfish on which they feed. "Fleets of steamers" left anchorages as we entered them, propelling their long heavy bodies through splashing showers of spray.

Beyond Offing Island we sailed the *Dorjun* circuitously Hornward, via Whiteside and Gabriel Channels. For more than 30 days we saw only two habitations.

Rounding Cape Espectación into Gabriel Channel (page 775), we voyaged through an imperfectly charted labyrinth of channels formed by the partially submerged peaks of the Andean Range. Sunny seas were behind us. Here was rain, a dismal down-pour. Furious squalls beat down on us from the mountain peaks.

We had expected this. These thirteen gales, this endless succession of squalls, confirmed the lugubrious statements in our Sailing Directions, issued by the United States Navy's Hydrographic Office.

They read: "The climatic conditions of the Cordilleras region are bad under all conditions; the weather is worse in summer than in winter. It is probable that no portion of the globe frequented by man experiences, the year around, worse weather."

Rain fell with scarcely an interruption. West winds blowing over thousands of leagues of the South Pacific become charged with vapor and strike these mountains like wet sponges. Cordilleran "wringers" squeeze them dry. Moistureless, they tumble down the eastern slopes of the Andes and sweep across the sterile, thirsty plains of Patagonia.

In this excessive humidity, vegetation flourishes with luxuriance and beauty. Somber fringes of Antarctic beech upholstered with moss, tangled vines, and

windfallen trees reminded Darwin of the forests within the Tropics. Yet there is a difference; in these solitudes decay and death, not life, is the predominant spirit. Not even a bird's notes broke the silence.

On daily explorations I have floundered about the forests, slipping and falling through the deep ravines, sometimes sinking to my waist in the wet moldering wood of trees centuries dead.

Everywhere along the mountain were silvery cascades fed by glacier caps and mountain snows. In one stretch I counted 500 dropping into Cascada Bay. Three or four streams poured into every anchorage. Drinking water was no problem.

On New Year's Eve we were anchored in a landlocked cove on Tierra del Fuego where the northern end of Gabriel Channel opens up on Magdalena Sound.

Looking across the sound, we could see Cape Froward. There, at the bleak tip, ends the continental land.

It was snowing; the thermometer stood at freezing. This meant nothing to Pepper. He went ashore and gathered a bouquet of marigolds for our New Year's table. After dinner, under a flickering candle, we welcomed the New Year in the wilderness.

Next morning we landed at the tiny hut of a roving otter hunter on Cono Point, facing Magellan Strait. To our eager shouts rose no answering dog's howl on the wind. This meant desertion. Dogs hunt otter in the Land of the Horn. They occupy a place as important as the Eskimoan huskies I had seen at the northern end of the hemisphere.

#### "THANKS FOR THE CABBAGE"

Beside the cabin, in a tiny garden half as large as a tall windbreak protecting it, grew cabbages. I scribbled a note and left it with chocolate bars under the eaves. It read, "Thanks for the cabbage."

We rounded Anxious Point into Magdalena Sound and sailed westward toward the Pacific.

The *Dorjun* seemed insignificant, shut in by towering stone peaks of Mount Hurt and Mount Boqueron. Darwin from the decks of the *Beagle* called this "a gloomy passage leading into another and worse world."

Perpetual clouds and mists disappointingly screened the upper peaks and snowfields. Pinnacles on the broken faces of

the great Tierra del Fuego glaciers glistened like sapphires. We knew that we were sailing along the base of lofty Sarmiento, yet we could not see it, did not really know where it was.

We reconnoitered here for a fortnight, sailing from Acwalisnan Channel to Agostini Bay. We had been warned to protect ourselves against the piercingly cold winds. I climbed glaciers, rather carelessly clad. One morning I collapsed with influenza on Mount Boqueron.

We lay at anchor in Ideal Harbor behind an island. Propped up, I gazed through a port at sea lions swimming, steamer ducks scudding on their knoblike breasts. For hours a kingfisher dived from the top of our mast. Mostly I envied the ducks, which, unafflicted with human weaknesses, could stand in the rain day after day without a thought of chilblains.

Our family doctor had referred to my medical kit as his "absent treatments." Salt water had washed off some of the labels, so I took two of this and two of that, just to make sure.

#### STEERING BY ROAR OF WATERFALLS

On the eighth day, a heavy southwest gale blasted us from our anchorage at midnight. We rushed on deck. Our 120-pound anchor had dragged off a shelf of rock and dangled at the end of 30 fathoms of rope.

Swooping squalls drove the *Dorjun* toward the boom of surf we knew crashed against cliffs on the north shore. While Roy laboriously hoisted anchor, I steered our groping course in blinding snow back to the island, guided by the sound of three waterfalls roaring down the mountain.

In little inlets we found deserted huts, but no Alikulufs. We were sailing through the region where the aged Yankee circumnavigator, Captain Slocum, had scattered carpet tacks on the deck of his *Spray* for protection against night-prowling, bare-footed Alikulufs. The results he described as "howling."

The little wigwams reminded us that man sometimes wandered into these desolate regions. Nomadic Alikulufs ventured here in greater numbers until they took up the white man's ways and began to wear suspenders.

Little is known of the Alikulufs. Perhaps 200 members of this tribe paddle about these vast archipelagoes, 500 miles

north to the Gulf of Penas, and southward to Desolada Bay.

Mussels, the principal food of the Fuegian, cluster on protected rock shores everywhere, banishing threat of starvation from the land (page 776). To fry the meat with potatoes, Pepper and I broke the shells and sometimes our knives. Then we met an Indian family who showed us that placing stubborn mussels on hot stones both opened and cooked them.

On the outer coasts, mussels disappeared; yet with infallible regularity a pair of kelp geese appeared every few miles along the shore. Ammunition of .22 caliber had been so hard to get in Magalanes that we limited ourselves to three shells daily. Despite this handicap Pepper usually had a goose in the stew kettle.

By rounding Brecknock Peninsula, the most westerly point of Tierra del Fuego, we entered the Pacific the middle of January.

As the *Dorjun* climbed breaking crests, we sighted, through feathered spindrift, the fanlike burst of seas against the East and West Furies. A little farther to the north there are so many breakers that the sea is called the Milky Way. "One sight of such a coast," wrote Darwin, "is enough to make a landsman dream for a week about shipwreck, peril and death."

We stood in to enter Ocasion Channel through an avenue of thundering breakers; yet, through scudding Horn clouds, ragged patches of sunlight threw a soft glow over mountain and water.

As we tacked into anchorage, drowning mists swept over the mountain. We sat by the crackling fire in the cabin where a kelp goose boiled in a kettle.

#### THE MENACE OF WESTERLIES

Until we rounded Brecknock, our four-horse motor, so small that I could lift it with my little finger, had been pushing the *Dorjun* against the prevailing westerlies. Had it failed before reaching this point, we might have been driven back.

The westerlies are always accompanied by thick, wet weather, dangerous to beat against in a boat like the *Dorjun*. One voyager who sailed into Admiralty Sound found it impossible to beat his way out again. He abandoned his boat. Now a fair wind strained our canvas as we scudded southeast along the south coast of Tierra del Fuego.



THE MORRISONS ARE THE GEOGRAPHIC'S FARTHEST SOUTH AMERICAN MEMBERS

Isolated on Dawson Island in the Strait of Magellan, they "travel all over the world" through *THE NATIONAL GEOGRAPHIC MAGAZINE*. "Memories of their hospitality lingered with me through many lonely, perilous days at sea," writes the author, who was their guest on Christmas Day. Mary helps mother spin wool for rugs, stockings, shawls, and sweaters. Father has raised sheep here for a quarter of a century (Plate VII and page 750).

The brown peaks of Jorjina and Basket Islands on our starboard stood sentinel to the sea passes that end here in the Pacific breakers. At several anchorages we scaled their bare granite summits and looked down on the gray Pacific beyond.

When we entered Desolada Bay, the weather cleared after 30 days of rain. Beside us, as we sailed down the dawn track of the sun, deep, tortuous fjords intersected the snow-capped, unconquered mountain ramparts of Tierra del Fuego.

On Burnt Island in Desolada Bay we sighted Indians. It was the first inhabited hut, low, egg-shaped, and sagging with seal-skins.

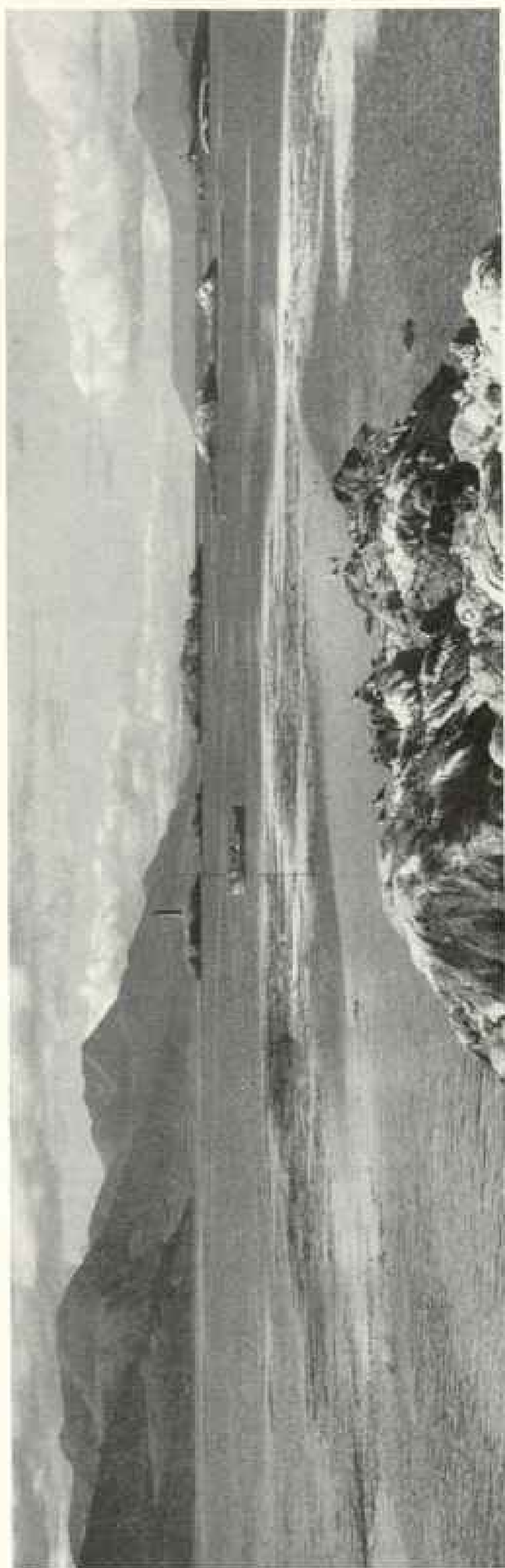
Our Sailing Directions described the Alikulufs as treacherous and aggressive. We steered in cautiously.

Two crudely hewn planked canoes were overturned on the beach. Smoke puffed from every crack of the shelter, from which emerged several ragged Indians resembling smoked hams. They gazed, rubbing their eyes and blinking in the light, mute to our pantomime salutations.

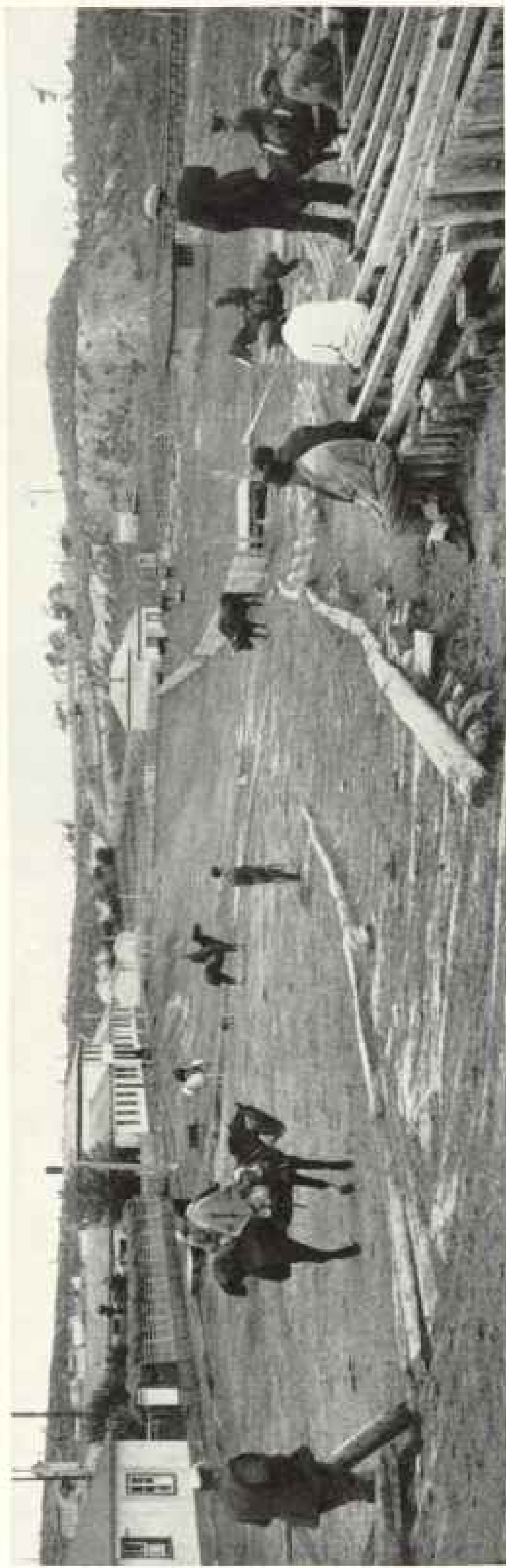
"Hi, toots!" Pepper shouted.

#### A BEGGAR IN ANY LANGUAGE

One Indian walked awkwardly on undeveloped canoe-cramped legs to a canoe and paddled toward us, jabbering in a medley of tongues from which we sorted English, Spanish, and Italian words. "Matches for baby. Matches for baby," he begged. Four centuries in the track of European voyagers had made these bold beggars linguists.



A BEACON AND A WRECKED STEAMER, "MONTE CERVANTES," WARN "DORJUN'S" CREW OF DANGERS THAT LURK IN BEAGLE CHANNEL.

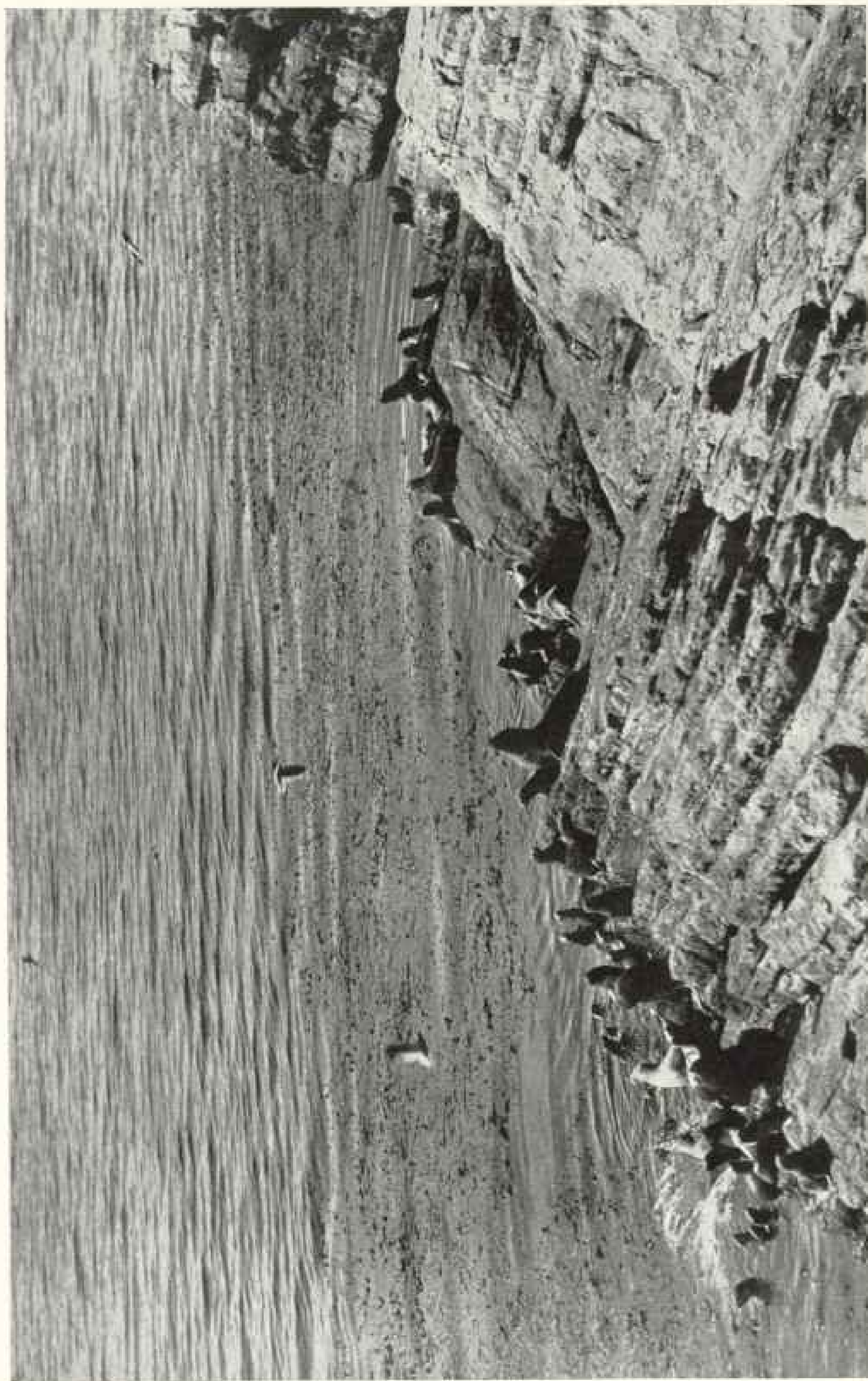


A WILD BULL OF DAWSON ISLAND DUCKS ITS HEAD FOR A LAST STAND, BUT IT HAS LITTLE CHANCE AGAINST CHILLIANS REARED IN SADDLES.



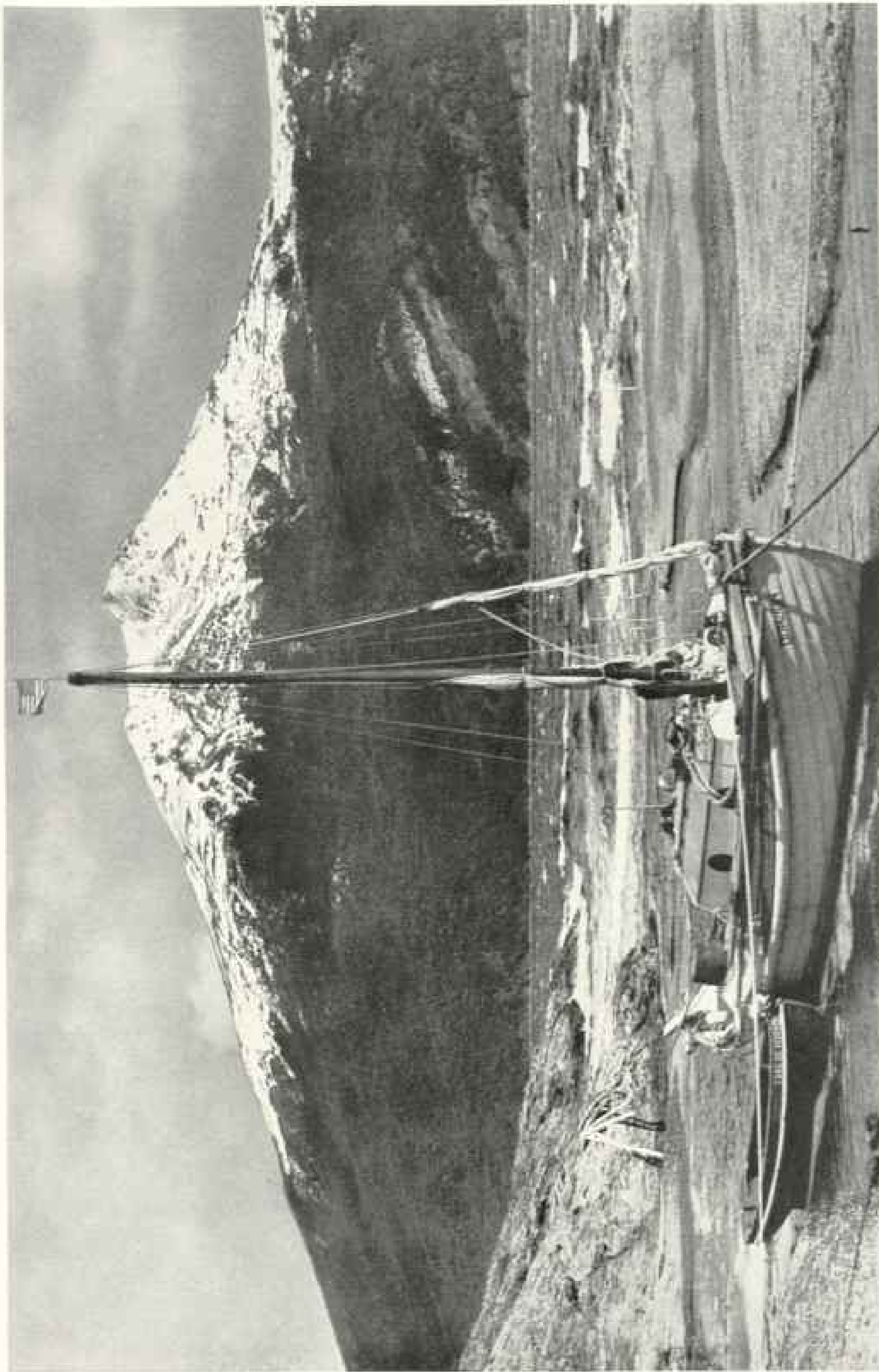
"MICALVI" ANCHORS IN VENDÉGALA BAY AFTER DELIVERING GASOLINE, FLOUR, AND POTATOES FOR "PORJUN"

Naval officers of the transport so generously provisioned the little boat in Beagle Channel that Pepper, grinning, warned, "If we don't get under way, they'll sink us!" Films and flash bulbs were taken on here. The *Micalvi* carried a motley crowd of good-natured prospectors, also otter and wal hunters, picked up on lonely Cape Horn beaches. Snow-dusted crags of the great Pyramids fringe the background (page 766).



SEA LIONS ABOUT-FACE TO SIZE UP STRANGE INTRUDERS

Large, external ears distinguish these animals from other seals. Hunters club hundreds of pups to death each year for skins, most valuable when taken from babies under 20 days old. Men enter dark sea caves where the young are born; there they would be hopelessly trapped if the water should rise upon them. This bird summer on the rocky ledges of Oiling Island.



"DORJUN" FOUND SHELTER BENEATH A SNOWY PEAK—AND THE FLAG WAS STILL THERE!

The shallow-draft boat could be run into many places as easily as a canoe. This was fortunate because Fingian shores are riddled with snug nooks, such as this mouth of a tidal stream in Yendegida Bay, where a small craft may find refuge (page 770). It was seldom necessary to inspect the hull; *Dorjun* did not strike a single rock while under way. The dory alongside once belonged to a Swedish miner.



His trousers, tattered and ancient, from all appearances might have been discarded by Magellan. A lady's nightcap slouched on the coarse, black hair that hung like thatch over his ears and forehead. In lieu of a shirt, he had laced around his greasy chest a small otter skin which he shifted according to the wind.

His blank expression lighted when we passed him tea, tobacco, and matches. "You know shipwreck?" he asked eagerly, "you know shipwreck?" I informed him of the latest, a Swedish steamer that piled up on a rock in western Magellan Strait.

The begging Alikuluf is plunder-minded. His wants are endless.

As we nosed into Thieves Bay we could see them running up the beach, waving their arms at us and no doubt still shouting, "Matches for baby!"

Beyond Desolada Bay extended Beagle Channel, a fine passage 120 miles long, bordered by ranges and majestic snow peaks. Scarcely had we begun our exploration of the unknown glacial fjords that indent the Darwin Range, east of Ventisquero Bay, than our motor sneezed and quit. Our gasoline exhausted, we rowed. In the fjords we battled constantly with treacherous williwaws rushing down the mountain.

#### THREE WEEKS AMONG THE FJORDS

For nearly three weeks we entered fjord after fjord, rowing always with the tide. Unlike the 40-foot tides that churn through the Atlantic entrance to the Strait of Magellan, the Pacific tides rise and fall only seven feet. The fjords are too deep for anchoring. Sometimes, after rowing all night, we found ourselves in magnificent ice-gorged canyons, rumbling with the discharge of bergs.

One evening a westerly gale rose in a twinkling. Pepper and I slipped on oilskins to save the *Dorjun* from being blown by savage winds toward a glacial precipice from which ice avalanches fell constantly.

Our oars were useless. We drifted nearer. Our fate—smothered by hundreds of tons of ice—seemed inevitable. Then suddenly the wind calmed.

After clearing the floes hours later, Pepper took off his oilskins and found that in the excitement he had been clad only in underwear. He looked dismayed.

"Gosh, if I had known this back there under that glacier, I'd have frozen," he said.

Our mile-an-hour progress with the oars consumed many extra days. Our labors worked up appetites. Provisions were running low. Tough flour-and-water sea biscuits we had burned for fuel and thrown derisively at sea birds had dwindled to a dozen, now cherished like jewels.

There were no mussels here. In some of the bays we speared small, sluggish-moving crabs with our boat hook. Pepper never got so he could shell them fast enough to keep up with his appetite.

"I'm slowly starving as I eat," he said.

One of the sportive, bottle-nosed porpoises that passed their days leaping around the *Dorjun* surely would satisfy his hunger. The plunging harpoon hit its mark. Zing! The line zizzed through our hands before we could snub it.

Down channel our lost harpoon cut water like a submarine's periscope. The scornful porpoises leaped happily after that around the *Dorjun*.

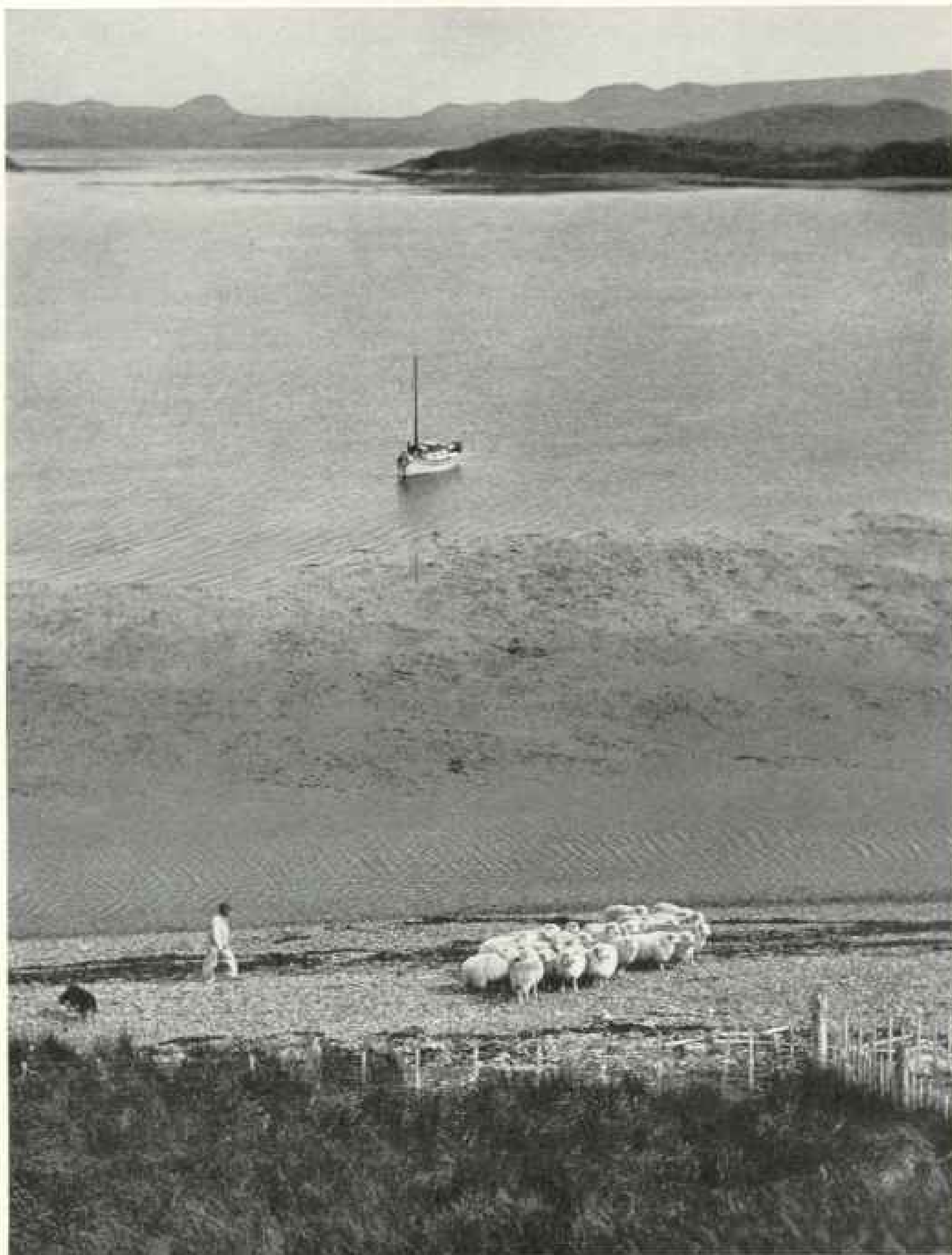
The sea is abundantly stocked. Myriads of living creatures owe their existence to the vast submarine forests of oceanic kelp, which grows everywhere in Magellanic waters (page 767). The amber leaf-streamers, buoying every menacing rock as a warning to seamen, grow on round, smooth, slimy stems down to great depths.

When we hoisted anchor, small fish, crabs of various kinds, shells, cuttlefish, starfish, sea eggs, and crawling nereidous animals of a multitude of forms would fall out together.

Cormorants, penguins, numerous species of fish, seals and porpoises find food and shelter among the leaves and stems of these amber forests. They make life possible for the Fuegian, providing his food, and for twenty centuries have protected his frail beech-bark canoe from destruction in the tempestuous seas where he must seek sustenance.

"I can only compare these great aquatic forests of the Southern Hemisphere with the terrestrial ones in the intertropical regions," wrote Darwin. "Yet, if in any country a forest was destroyed, I do not believe nearly so many species of animals would perish as would here, from the destruction of the kelp."

Long after losing hope of sighting the Chilean transport *Micalvi*, which carried our supplies, we sighted her smoke in Beagle Channel below Pia Bay (page 763). Our screeching siren brought her toward us.



ALL ASHORE—TO SHEAR SHEEP ON PACKSADDLE ISLAND

Ken Williams, who joined the *Dorjun's* crew at Douglas Bay, owned the fat and woolly group (page 778). They probably lived farther south than any others of their kind. Because the shears were dull, only two sheep were finished before a storm arose and forced the explorers to make all haste toward a sheltered cove. A kelp field lies offshore, marking the shoal water (page 783).



IN THESE GRIM WALLS THE AUTHOR TAUGHT CAMERA PORTRAITURE—FOR THE ROGUES' GALLERY!

Within the penitentiary live half the 1,400 inhabitants of Ushuaia, Argentina. A few convicts escape, explained the prison photographer, but they seldom get away because of the great snow peaks surrounding the town and those on Hoste Island, far in the distance. At the prison the author remained a week, introducing the latest methods of making prisoners' pictures (page 772).



A DUGOUT CANOE IS A HOUSEBOAT FOR DOMINGO AND FAMILY

In it he piles his wife, seven children—one a toddler—his dogs, and baggage. In the spring he left home with two weeks' supply of food, and was gone five months. It took him seven years to chisel the boat, last of the old-time Yahgan dugout fleet (page 773).



#### WHITE MEN'S RAIMENT BROUGHT SICKNESS TO THE YAHGAN'S WIGWAM

Formerly rain trickled from the redman's bare body, so kind-hearted missionaries sent clothes. The garments, damp from constant downpour, caused colds, pneumonia, and tuberculosis, which helped destroy the tribe. Now, as when Darwin visited here, many Fuegian homes merely consist of a few broken branches stuck in the ground and covered with sealskins or pieces of cloth.

A motley grinning crowd of adventurers, prospectors, and otter and seal hunters, picked up on lonely Horn beaches, crowded the rail and peered curiously down at us.

As I stepped on deck, a young officer saluted and said, "I have the honor to escort you to the commanding officer."

His smiling superior had the gracious and charming comradery that makes the Chilean naval man so beloved in these inhospitable seas. Naval, coast guard, lighthouse, revenue, salvage, and rescue services they perform courageously and efficiently, often with personal sacrifice.

Eighty gallons of gasoline and necessary photographic supplies brought from my

trunks in Magallanes were being lowered into the *Dorjun*. Did we need food? I modestly asked for five pounds of salt, some flour, and 15 pounds of potatoes.

Our voyage? Yes, we were doing much for Chile. But they were more impressed because they had heard I had once seen Norma Shearer at a Hollywood premiere.

High winds were springing up out of Darwin Bay. After much handshaking, gracious bows, and interchange of compliments, I climbed down the Jacob's ladder and stepped on piles of strange merchandise under which the hospitable naval officers had buried the *Dorjun*. Pepper was struggling with a large, heavy sack.



ACRES OF SHEEPSKINS DRY ON THE RACKS AT RIO SECO

In favorable weather, skins dry in from five to eight days; on rainy days a hot-air plant is used to complete the drying. Birds help clean the pelts by picking off surplus meat and fat. After being sorted and classified, they are packed, 75 to 125 in a bale, for shipment to wool and leather centers where they will become coats, mittens, motorcycle and bicycle seats.

"This is the five pounds of salt," he explained. "If we don't get under way, they'll sink us!"

Our self-bailing ports were already awash. We cast off just as the last hospitable gesture—and their sack of something—was ready to be lowered into the cockpit. With grateful waving and siren salutes we were off again down Beagle Channel.

#### AMONG GLACIERS AND ICEBERGS

It astonishes one who is inclined to think only of the tropical aspects of South America to learn that as near the Equator as Paris, in Eyre Sound, Patagonian Channels, within nine degrees of where palms grow, there are immense glaciers discharging bergs nearly 150 feet high.

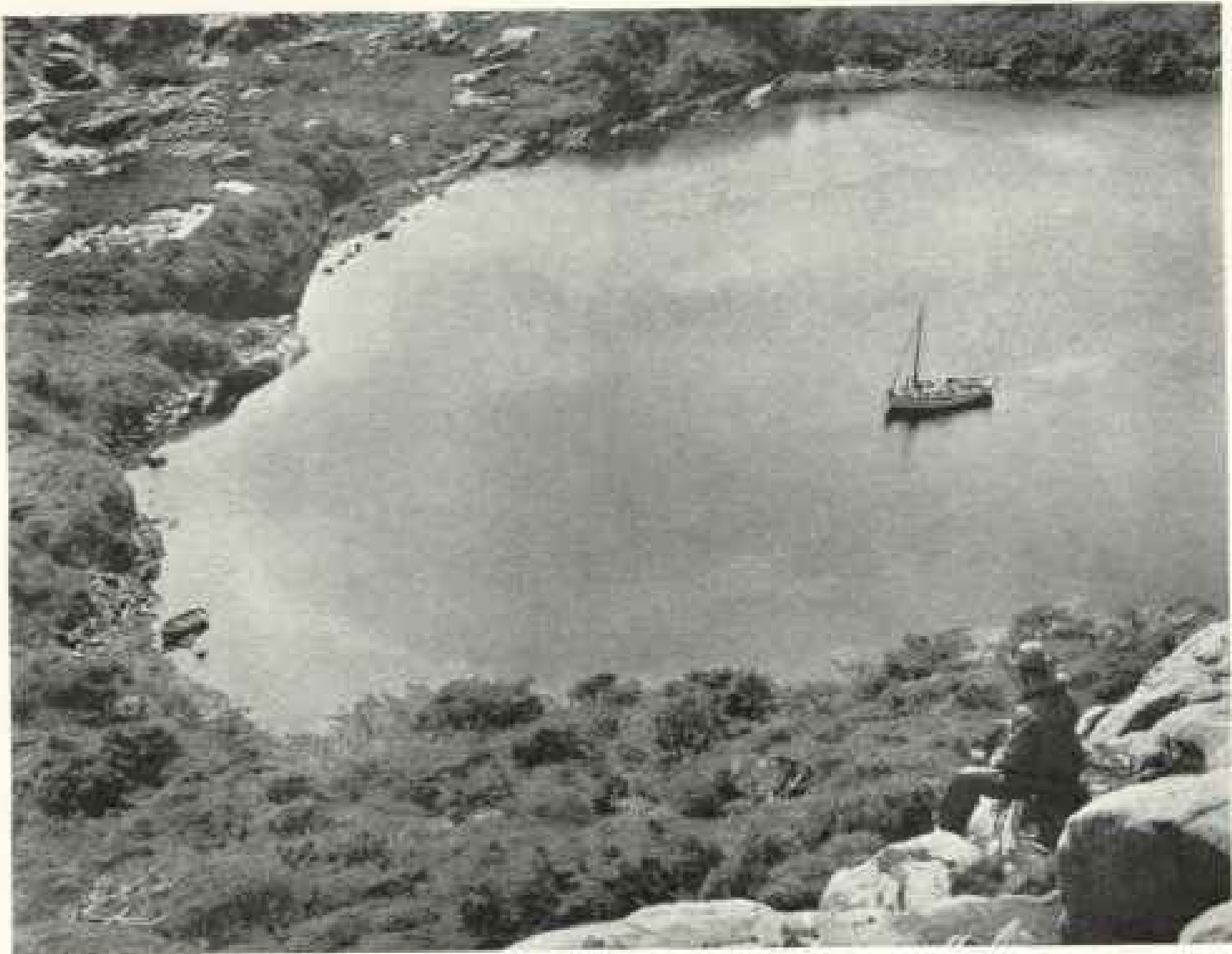
In Olla Cove in mid-February summer snow fell for three days in large, damp flakes that covered every tree and blade of grass. We beached the *Dorjun* at high

tide, but a strong wind blew the water out of the cove. Oars served as shovels to dig a channel to refloat her. Marigolds had nodded gaily to us on our arrival. Now their frozen faces peered expressionless through the snow.

After a short run, we rounded a point into Yendegaia Bay and steered for the smoking stack of the world's southernmost sawmill. Along the northern shore of the bay extend the Pyramids, remarkable peaks resembling the Egyptian monuments (page 763). Chilean millworkers gave us a lamb stew dinner.

#### FORESTS—SIX INCHES HIGH

Our voyage itself was inconsequential in this land of boats. Our fame had preceded us: I had seen a motion picture star at a Hollywood premiere! When conversation lagged, Roy brought forth our Swiss phonograph, the size of a baby alarm clock, and finished the evening with a concert.



WILLIWAWS RACKED—AND NEARLY WRECKED—"DORJUN" WHEN SHE ANCHORED IN BRECKNOCK PASS

Cold land gales burst upon her; squalls tossed her about all night even though she stood close to shore at the base of a peak. On the weather side of the same mountain, behind a low barrier cape or islet, the squalls might have passed over her, because wind never blows so hard against high land as when descending from it. Here she was in the very pocket of the blow.

Yoked oxen hauled logs down to the mill. The three-foot diameters of the noble trees (Antarctic beech) surprised me after the wind-blasted, stunted trees on the seaward coasts. There we had tramped over forests six inches high. Even here half the trees are ruined by frosts and terrific winds.

Our host, a young Slav, took us guanaco hunting. The gloomy, wet forests proved impassable. Great moldering trunks had fallen down in every direction. I decided to wait, to look at the guanaco in the zoo at Buenos Aires.

The guanaco, like its domesticated relative, the llama, is an American member of the camel group and has much of that animal's grotesqueness. The Indians, in hunting them, take advantage of the animal's extreme curiosity.

A 10-ton schooner put in for lumber. We became acquainted with the Sicilian captain, Pascalini. These cutter captains,

representing no particular nationality, are more skillful and fearless than cultured. Pascalini ventures on sealing expeditions to the Diego Ramirez Islands, 65 miles southwest of Cape Horn.

Beyond Yendegaia, Mount Olivia, its summer snow line at 3,500 feet, marked the site of Argentina's Fuegian capital (Plate I). As the *Dorjun* cut across Ushuaia's sun-flecked harbor, a reception committee formed on the stone pier.

"Come listen to Schenectady on my American radio," invited the governor of the prison. We had seen the grim walls of the penitentiary at the east end of the penal colony as we voyaged in. It holds half of Ushuaia's 1,400 population.

"You must be my guests while you are here," said the chief of harbor police. We lived aboard the *Dorjun*, serving tea in the afternoon, sometimes taking picnic parties voyaging down the channel.



PHILOMENA LAUGHS AT THE FUNNY WHITE MAN AND HIS BIG BLACK CAMERA

With her father, mother, and six brothers and sisters, she stops at Navarino Island while on a half-year's voyage in a dugout canoe. Other Yahgans may languish, but this up-and-coming family thrives by adopting the roving habits of their forbears (page 773).

I was employed for a week in the prison photographic laboratory, introducing latest Rochester methods in making better portraits for the rogues' gallery (page 768).

"We are so remote here," the prison photographer said. "No steamer came once for seven months. A few convicts escape, but they seldom get away. That stops them." He pointed to the snow-capped Martial Mountains rising boldly behind the town.

We found a helpful friend in Martin Lawrence. His father, an early mission-

ary among the Yahgans, helped found Ushuaia. It was a leisurely town. Two years ago Martin had given the tailor cloth for two suits of pajamas. One had just been completed.

These were squandered days. We hoisted anchor and sailed southward across Beagle Channel toward Cape Horn. The sun-warmed breeze had a bracing vigor that was never absent. I forgot the storms and temperamental winds that strummed antipodean songs on our rigging stays.

This was our longest calm, six days. That night the northwest wind rose again. I had missed the wind's song and welcomed it, although it meant another siege of Cape Horn gales.

Off the Eclaireurs Islands, we passed the round stone tower of the continent's most southerly light. Near it lay the nearly submerged hull of the German steamer *Monte Cervantes*, which had located a rock to place on sketchy Fuegian charts where none had appeared before (page 762).

We paused on Navarino Island to pay our respects to the Chilean official, who had seen little of the wild islands that are his domain (Plate IV). He didn't quite trust the cranky old boat given him to travel in. Going to Ushuaia, he said he could tell when he was almost there—his engineer would be bailing out the 250th bucket of water!

When we sailed again, he asked us to keep a look-out for Christoferson, an otter hunter, several months overdue with his cutter and two companions.

As we cruised by the Whaits Islands, we met Domingo, a Yahgan Indian returning with his wife and seven children from a six months' voyage in a large hollowed log that represented the last of the Yahgan dugout fleet (page 768). A row of dusky faces peered at us over the gunwale.

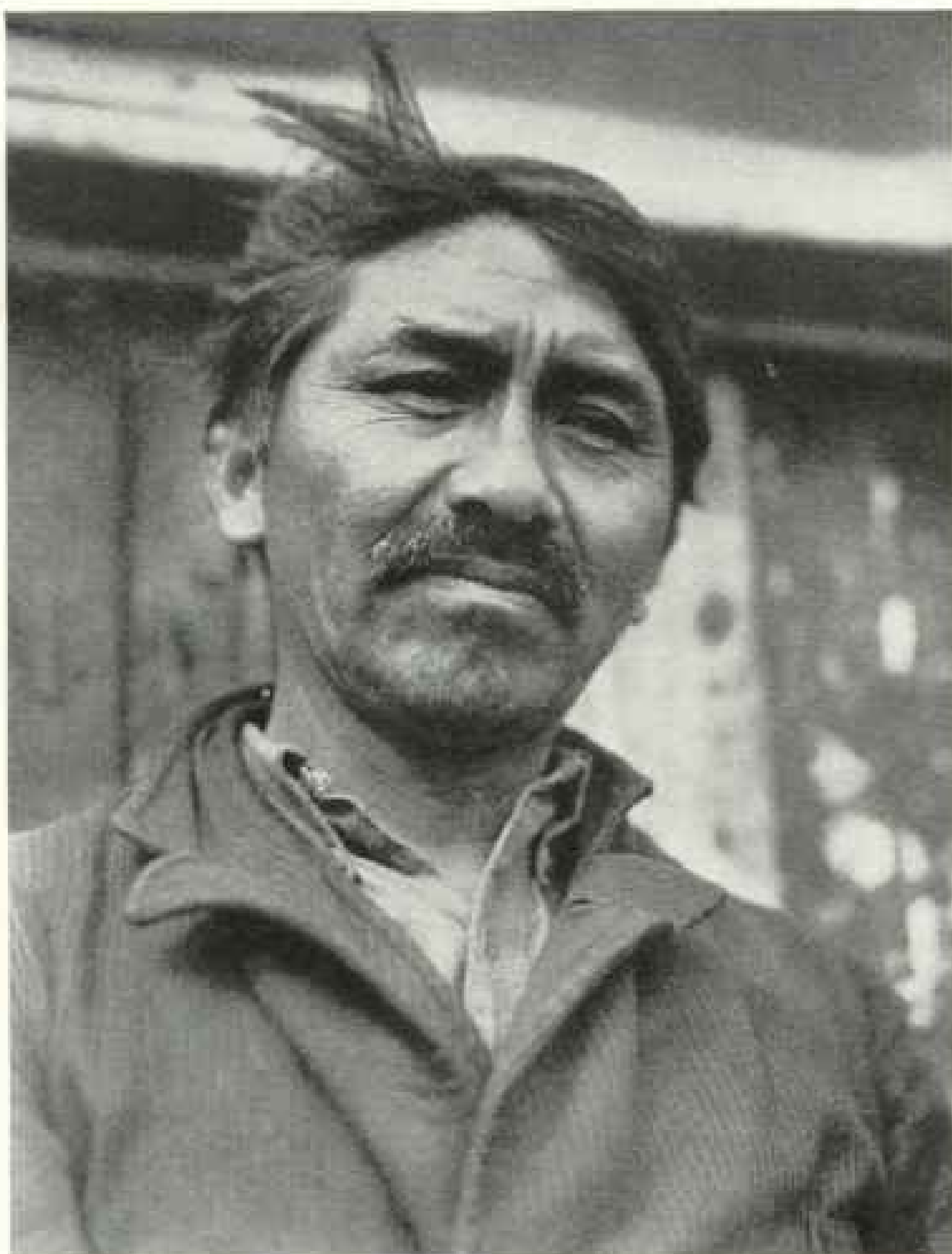
#### THE WORLD'S SOUTHERNMOST PEOPLE

D o m i n g o means "Sunday" in Spanish. "Why do they call you that?" I asked.

"Perhaps," he grinned, "because I always left on Sunday—just before mission services, or arrived on Sunday—right after them."

Domingo's family is the most primitive of the Yahgans and the healthiest. Once sole overlord of these inhospitable lands, these most southerly of the earth's inhabitants have dwindled in less than a hundred years from 3,000 to 50.

Domingo paddles about the mussel beaches. Other Yahgans, hopelessly resigned to their fate, stagnate on northern Navarino Island. Formerly they were canoe nomads, widely scattered in families about the Fuegian islands, and wandering in quest of food.



WHAT! AN INDIAN WITH WHISKERS? YES, CHIEF MILISIC

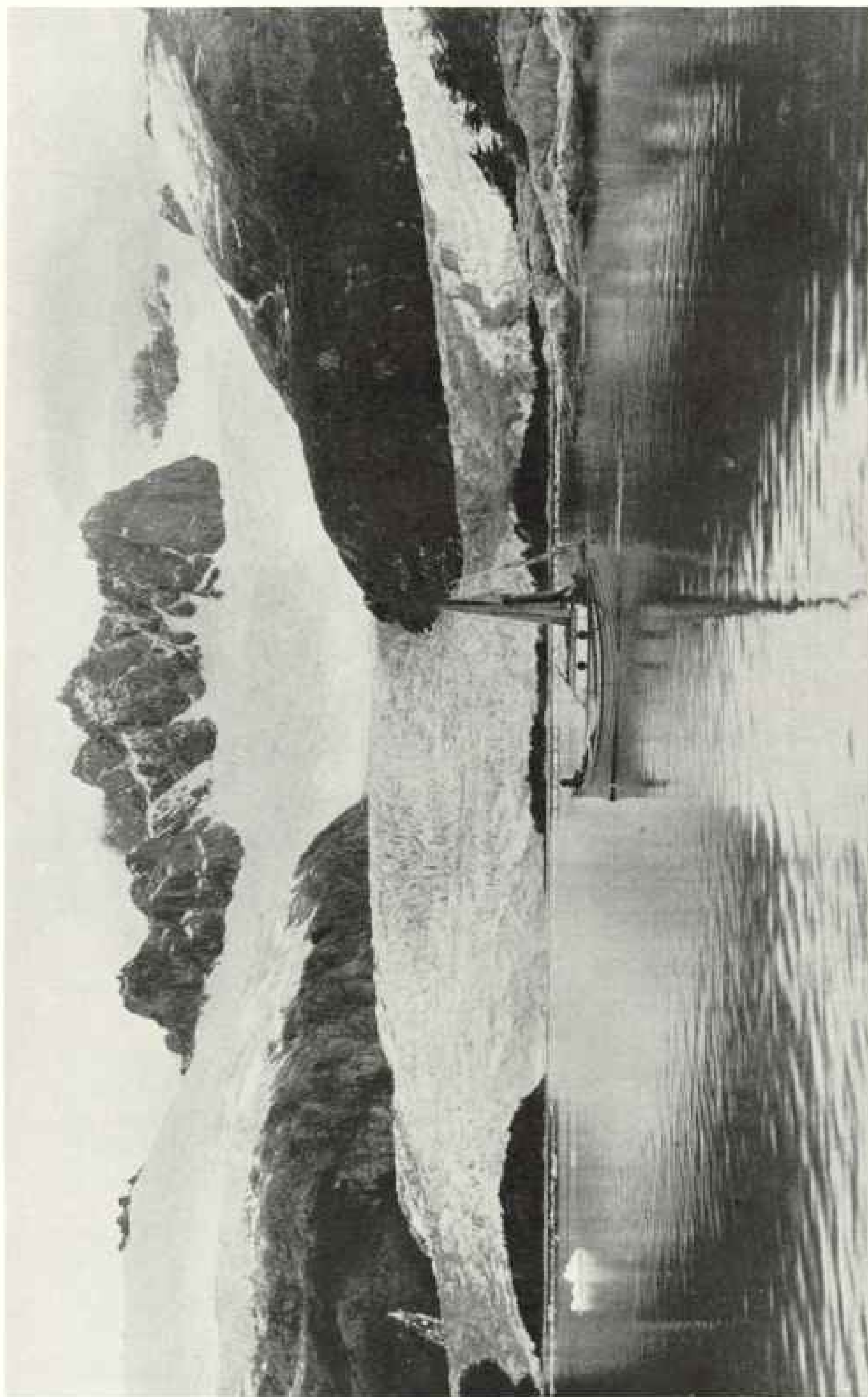
Contrary to popular belief, many redmen can grow beards, though facial hair is seldom so luxuriant as that of white men. This leader of the Yahgan tribe roams with his family in the region of Tierra del Fuego, Chile. (page 777).

Early voyagers, describing miserable, naked savages shivering in the snowy gales, caused blankets and clothes to be dumped on these islands. The effect was bad. Rain ran off a naked greased skin and did no harm. But Indians in wet clothes which were never changed caught cold at once (page 769).

Lack of sun and a prevailing low temperature with a yearly range of 20 degrees is the main defect of the Fuegian climate. The naked Yahgan with the aid of fire was able to maintain a rigorous existence.

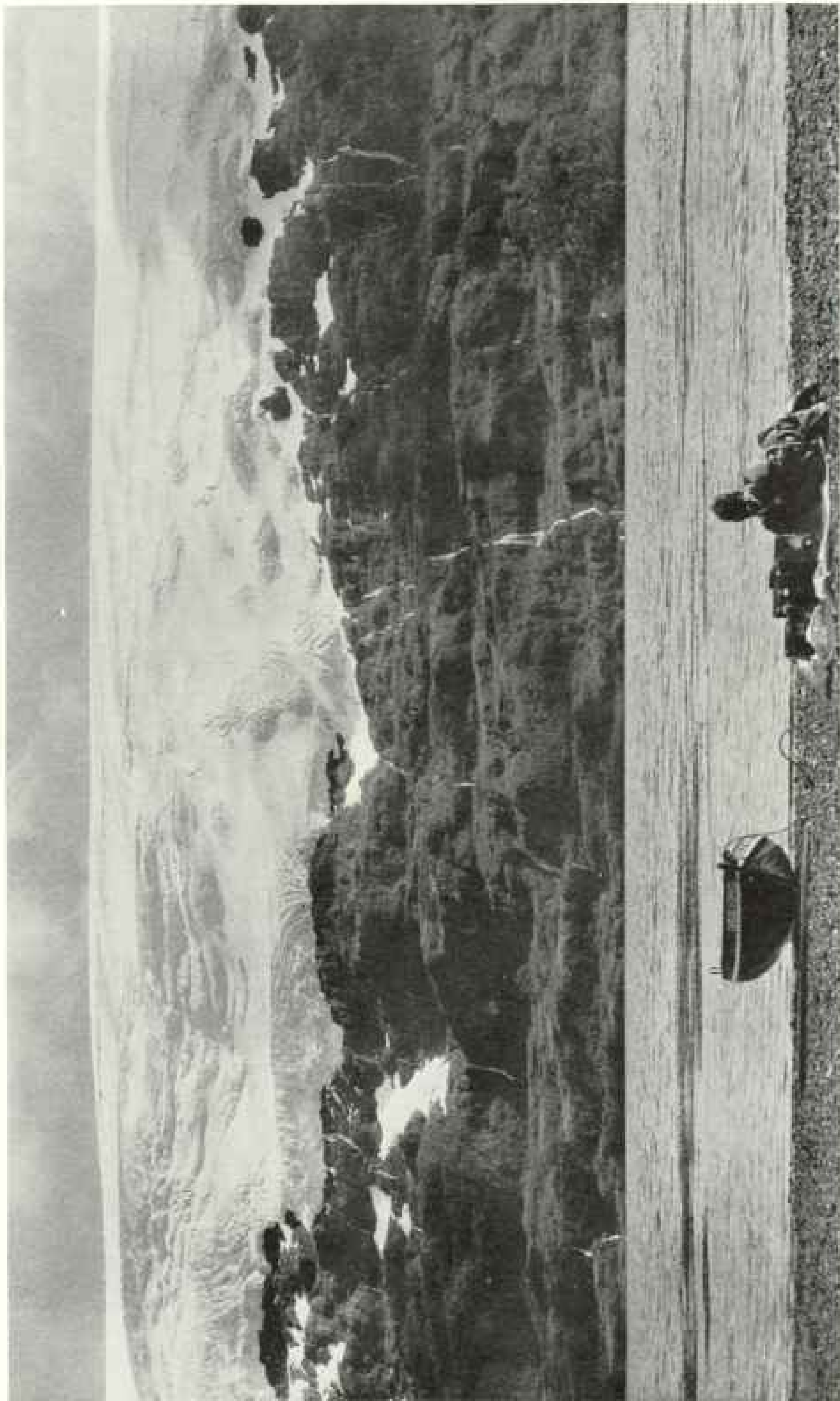
Charles Darwin, a century ago, found the Yahgan boisterous and aggressive,





ONLY A GLACIER'S ROAR BREAKS THE SUMMER SILENCE OF PIA BAY, WHILE "DORJUN" ROCKS GENTLY IN THE SHADOW OF THE PINNACLES

Day and night the five ice cap thunders through the wilderness, twisting, cracking, and shedding huge splinters into the crystal water. Terra del Fuogian glaciers flow in an area of about 8.5 miles long and 3.5 miles wide. Charles Darwin in 1844 saw huge icebergs, one 168 feet high, floating in the sea near here. Some of them carried massive blocks of granite scraped from the mountains as the frozen river ground its way toward the water.



A VAST GLACIER CREEPS TO THE EDGE OF GABRIEL CHANNEL, HALTS, AND TOPPLES HUNDREDS OF CASCADES TOWARD THE SEA

Pulling his dory ashore at the south end of the narrows, the author pauses to count more than 300 streams born of the great ice sheet. Some plunge a thousand feet before they reach the channel waters. Here the summer is cool, and more snow falls than melts during the year. The surplus, instead of piling up indefinitely, turns to ice under great pressure and gently flows toward the sea.



FINE FURS FROM BLEAK MAGALLANES WILL GRACE LOVELY SHOULDERS IN THE METROPOLITAN OPERA OR COVENT GARDEN

Guano capes and ostrich feather blankets from the Argentine pampa, otter skins from Patagonian Channels, and smaller furs from Cape Horn islands make up this dealer's stock. Seal-skins are salted in barrels and kept in a warehouse until they are shipped to Fifth Avenue or Regent Street.



KEN WILLIAMS CLAWS HIS DINNER FROM A ROCK

Mussels, choice tidbit of Fuegian Indians, cling to stones in Washington Channel. Fried with potatoes, they were often on the *Dorjan's* menu. Indians hereabouts rely upon shellfish for food and sometimes suffer famine when women, marooned by gales, cannot reach the mussel rocks.



JUANA IS THE WALTER WINCHELL COLUMN OF THIS BREAKFAST TABLE.

Fat and jolly, she knows every wisp of rumor for miles about, even though Pedro has not let her go to the village for more than seven years. At their ranch, near the south end of Murray Channel, the *Dorjun's* crew breakfasted on sea biscuits and coffee.

perfectly willing to kill shipwrecked sailors. We found them inoffensive and suspicious.

That evening we gave a concert in their wigwam with the Swiss phonograph. Repressed twinkles hovered in the children's eyes. The rest were stoical. Although his wife weighed more than 200 pounds, Domingo kept her behind him as if we might any minute dash off with her in our arms.

The phonograph concert was, to Domingo, merely a white man's trick to rob him of something (page 780). He let the fire go down, chilled us into departing.

Time means little to a Yahgan. It took Domingo seven years to hollow his canoe out of a log. He was four years more returning the chisel. Now his canoe was held in port because of a technicality in Chilean law.

We passed south through Murray Channel. A cluster of corrals and corrugated-iron huts lured us to anchorage at the south end of Dumas Peninsula. Milisic, a chief, rowed us ashore so we would not have to launch our dory (Plate V and pages 775, 781). Fully attired, even to vest and tie, he bore the disheveled appearance of a

man who had dressed some months before and then, forgetful, had gradually fallen sartorially to pieces.

#### WHITE MEN SHIVER: YAHGANS PERSPIRE

Despite the sunshine, the air was cool. Beside the house a fat Yahgan woman sat in the northwest wind mopping perspiration from her face and complaining about the heat. Darwin, a century ago near this spot, wrote that men of his party huddled about a fire in heavy woollens while naked Yahgans near by streamed with perspiration.

Juana's white husband had an enormous mustache that seemed to impoverish his slight body. To me this seemed a great waste; half would have been enough.

"He is a bad man," Juana told me. For seven years he has allowed her neither a new dress nor a glimpse of Ushuaia.

Life in sociable Yahgan wigwams has developed a rich and musical tongue, a variety of vocabulary and style far surpassing that of tribes superior to them in the arts and comforts of life. Juana's voice was vibrant and sweet; she created music simply by talking. Like all Yahgans, she loved to gossip.

Juana had no newspaper; she *was* a newspaper. She knew every wisp of rumor. The sleepest Yahgan, between yawns, can tell all the news and rate every individual between the Wollastons and Beagle Channel. A man's reputation tarnishes as quickly as his virtues are polished.

When we hoisted anchor next morning, the noise disturbed Juana, and she sent smoke signals streaming from her kitchen chimney—to call us to breakfast. We ate sea biscuits between gulps of coffee.

When the *Dorjun* entered Douglas Bay, Ken Williams was salting a smelly mountain of skins from seals clubbed in the caves on Hermite Island (pages 764 and 776). Williams knows the addresses and domestic details of the sea-otter families all the way to Horn Island.

#### LAST OF THE WOLLASTON HUNTERS

Since Christofferson vanished in the gales, he is the only hunter who ventures to the Wollastons. For days I had been inventing convincing reasons why he should accompany us. They were unnecessary.

"Wait! I get my hat," he answered, at my first request.

He came aboard trailed by his dog, Loco. Loco, once mistaken for an otter, has only three legs now. "He knows I didn't mean it—he's never blamed me," said Ken.

Williams was not one whit interested in the problems of the troublous world from whence we had come. His problem was sealskins. Douglas Bay had been a mission station founded by his father.

When the Fuegian missions were abandoned, Ken and his brother continued to live here, raising sheep (page 767). Two years in five, heavy snows killed many sheep. Sealing helped balance the budget.

Northwest winds blew hard all day. By sundown we sailed for Courcelle-Seneuil Bay on Hoste Island. After twisting through intricate passages, we dropped anchor before a slab cabin. Here lives the most southerly South American. A Chilote stood on the bank, silent as the shadowy lagoons among which he lived.

He wanted tobacco. Searching my pockets, I found and gave him a crumpled cigarette. It was all I had; we had given the rest away. Accepting it in pained surprise, he broke it in three parts and divided it with an old Yahgan couple who were visiting him. After a few meager puffs, they drooped, disconsolate. I felt miser-

able, the cause of such disappointment.

That we had come to see him was apparently not important. And although he lacked the gracious, lovable buoyancy of the Chilean, he didn't shirk on hospitality. We had mussel stew for dinner.

Sitting with my strange companions under a smoky lantern that swayed in the stray gusts of a moaning night wind, I was really dining twice. Mussel stew was the lesser meal. I was hungrily devouring the atmosphere. Imagination cannot sleep in the Land of the Horn.

The fat Yahgan woman sat beside me, complaining of her aching body, tormented by tyrannical rheumatism. Her clothes were rain-soaked. Records of the region taken on the French *Romanche* expedition of 1882-3 show five hours of rain daily throughout the year. Unless rainproofed, clothes for the Yahgan are as impractical as open-backed bathing suits for the Eskimo.

In a shadowy corner I tilted my chair and listened to Ken's digest of Beagle Channel news. Our host, absorbed in the broadcast, busily washed the dishes. Finishing everything, he poured the dishwater into a bucket. Knives and forks he threw out of the window. In a startled instant he realized what he had done and grinned sheepishly.

"It's the solitude," Williams explained. "Too much alone. Christofferson went off his head finally. Had hallucinations. Quarreled with his companions. When he sailed on his last voyage, murder walked the decks of his cutter. He's eight months overdue."

#### WHERE TIDES OF TWO OCEANS MEET

We steered next morning toward the sunrise above the blank horizon of the Gulf of Nassau. The last cabin in the Americas was behind us, wrapped in shadows. A cold rainy wind set in from the south as the *Dorjun* met the tides of two oceans off the stone nose of Cape Webley on Tekemica Bay. We could see both the Pacific and Atlantic Oceans from the cockpit of the *Dorjun*.

All the 230,000,000 inhabitants of the Americas lay astern of us now. Far to the south across the squally seas rose desolate peaks of the Cape Horn islands. At Pack-saddle Island, we turned southeast toward the Wollastons in the treacherous sweep of southwest gales.

We filled our gas tank many times before the sheer, brown cliffs of Cape Hall took



BOAT BECOMES ELEVATOR TO HOIST AN INDIAN FAMILY ONTO THE "MICALVI"

Boarding the Chilean transport in Beagle Channel, the migrants traveled to Port Edwards where they planned to hunt otters in Desolada Bay. Strands of kelp, the great life sustainer of the Cape Horn region, dangle from the rope slings under the boat.

form. The sulky south wind dropped; a more vigorous blow set in from the north.

The *Dorjun* rolled and plunged over the cross sea it raised. Williams remarked on the squalls gathering over Hermite. Our fair wind might in a few minutes change into a violent southwester. We battled tide rips past Dédalo Rock and anchored behind a brawling reef.

We awakened to a wild morning. The wind roared in swirling gusts through our anchorage. Outside the point the rising sea, black in early morning, broke white with crested foam.

#### OUTWITTING THE WIND

As the wind was with us, we ran for Sea Gull Anchorage. We drifted from the kelp to open water and beat our way out of the harbor. The motor stalled; wind and tide rushed the *Dorjun* toward the rocky point where seas were breaking.

With characteristic resourcefulness, Williams leaped to the steering oar. His efforts were puny against the blustering strength of the gale. Pepper quickly lowered the

centerboard. Our drift was checked, and we cleared. Outside the point rough seas and freshening winds closed in behind us.

Menacing grew the wind. It shifted quickly to the west and blew at gale strength off the land. The *Dorjun* heeled dangerously under a howling succession of squalls.

We had only a gallon of water. A mishap here and we should certainly be blown helplessly to sea before the gale.

"I never carry a life preserver," said Williams cheerfully. "To preserve life in these cold waters is only to prolong agony."

My calm companions might have been playing a quiet game of dominoes. While I steered, Ken warmed his chilled hands by the cabin stove. He said he had been frost-bitten once.

Pepper sat on the edge of the teetering cabin and yawned disrespectfully, right in the face of the Cape Horn gale.

Next to shooting an albatross, it was probably the worst thing he could have done. In five minutes the gale nearly avenged the insult.



PUPILS OF FIVE NATIONALITIES MASTER MORE THAN THE THREE R'S

Manual training for boys and domestic science for girls are part of the program from the first grade up, at Ushuaia. School ends after the sixth grade, and students must go to Buenos Aires if they wish to continue their work. Argentines, Spaniards, Chileans, Yugoslavs, and Italians make up the enrollment of 185 youngsters here taught by eight masters and two women.



MUSIC IN THE BLACK BOX? JUST ANOTHER WHITE MAN'S TRICK

Grown-ups in this Yahgan home on Navarino Island listened suspiciously; children were more impressed by trinkets. "How many are we?" inquire the posters announcing the taking of a national census. They form part of the papering on the wall. The question is apt for the Yahgans, who seem doomed to extinction (page 773).

The blackening southwestern horizon moved rapidly toward us. The squall, filled with hail and spray from smoking seas, struck the *Dorjun* with furious violence. The sail boom snapped and fell overboard. Our lee rail went under. The sea was blotted out. Pepper and Ken clung to the lee rail. Sea foam lathered their heads. Sea water half filled the cockpit. They stood in it. I let go the sheet.

#### TALES OF STORMY WATERS

The *Dorjun* steadied just enough for Ken. He pointed over the gunwale at a distant cape.

"I shot an otter there once," he shouted.

We put another reef in the mainsail. With the wind now out of the southwest, we raced, close-reefed, for Sea Gull Anchorage. Tilting dangerously, we shot through the passage between two reefs, steered up into the wind and dropped anchor, safe.

We needed wood and water, but we could not use the dory to get ashore; the wind was too powerful. So we sat in the cabin and listened to Ken's anecdotes on the Land of the Horn. Otters, sea lions, Yahgans, shipwrecks, storms, and disaster filled the tales of his adventures.

One tale made him sad. Years before, a full-rigged ship, cargo laden, drifted into



SOME DAY HE MAY LEAD HIS PEOPLE

Chief Millic's young son, with his unkempt hair and disheveled appearance, came near to fitting the descriptions given by early travelers among the Yahgans. A hundred years ago, the Indians were fearless and aggressive; now they are usually shy and suspicious (pages 773 and 777).

the Gulf of Nassau. She had been abandoned off Cape Horn. So sinister did she seem that Ken did not board her. She vanished. He had missed a chance to make a fortune.

By day we hunted otter with faithful Loco. From peaks on Baily Island we saw marvelous panoramas of the Hermite and Wollaston Islands. In hunting otter, Loco worked the bushes along the shore. Short yaps announced his progress and discoveries. Ken kept abreast along the beach with his 16-gauge shotgun.

Had there been two efficient dogs, the





OBSERVING A UNIVERSAL FEAST, CHRISTMAS DINNER, ON REMOTE DAWSON ISLAND

Natives gave the *Dorjun's* crew a hilarious welcome, offering lamb roasted on the spit and wine to wash it down. To season their meat, Chileans use a sauce of salt, pepper, vinegar, sugar, spice, and water. A predatory dog keeps just beyond foot reach.

hunter need not have fired a shot. One dog works the bushes; the other dog intercepts the otter on the beach when it is driven out. Ken said he seldom found more than one otter on an island.

The gale hung on. Some have been known to rage for three weeks or longer in the Strait of Le Maire. In one year 300 days of rain and 25 major gales have been recorded in the Wollastons. The remaining 65 days were not rainy, nor were they fair.

"Small wonder," said Ken, "that the dwarfish Wollaston Yahgans' minds were fogged with superstitions and gloomy forebodings."

In its 125th hour the gale weakened. I was not surprised. It had used up all the wind in the world.

Eagerly we hoisted anchor and steered south again. Gray portals of Washington Channel led to Franklin Channel.

#### THE SURGE OF THREE SEAS

Here the storm was not over. Mountainous seas driven by the prevailing westerlies pitched giant breakers against the coast. We skirted them, rolling so violently that

sometimes our propeller's spinning blades bit only empty air.

Three seas surged over our gunwale. Self-bailing ports released them quickly. We steered to shelter in a cove in Franklin Channel.

Ken and I loaded the cameras on a pack-board and next morning Pepper rowed us to the end of the cove. We were on the inner side of the Horn, a dozen miles from the Cape.

#### SEA LIONS AND FLOWERS

To sailors passing far at sea these coasts appear bald cliffs, stacked high by white sea drift and spuming breakers. Yet, as we left the cove, we stumbled through a glorious patch of boxwood flowers. Pepper sauntered up to the point to play with a herd of sea lions.

As we climbed Mount Hyde, he would split ship's spars for cooking. Wreckage is never absent from Fuegian shores. Ken said Christofferson burned nothing but teak.

Ken and I ascended the lower slopes of Mount Hyde to ravines choked with forests of Antarctic beech, gale-twisted, mat-



A CORMORANT FINDS GOOD FISHING IN VAST KELP PASTURES OF THE SEA

Numerous kinds of fish live among the floating streamers, finding there both food and shelter (page 756). Grasping some of the huge entangled roots, Charles Darwin shook out a pile of small fish, shells, cuttlefish, crabs, and starfish.

ted, impenetrable. We floundered over their tops.

Then we began to scale the talus slopes of loose volcanic rocks splintered by winter frosts. Now for the first time I noticed the intrepid voyager's expression on Ken's face furrowed by misgivings. He wondered just which rock was safe to cling to, and which, stepped on, might loose an avalanche.

We clambered up the final knifelike edge by the glacier until we stood on the highest summit of Mount Hyde. Around us rolled a panorama of the Wollaston and Hermite Islands. To the south, Horn Island finally lay at my feet, the last vestige of the cordilleran spine that ties the continents together.

#### AT LAST—CAPE HORN!

At its tip we saw Cape Horn.

Beyond the peak of that Cape rolled the waters of Drake Passage. They wash the ice cliffs of Antarctica, 400 miles farther south.

Standing there on the tail of the hemisphere, I swept my eyes around the encircling horizon to record this inspiring panorama. All that broke the great haunting

silence at the earth's ends was the clink of volcanic stones as Ken piled a pyramid to mark our ascent of the most southerly glacier-capped peak in the Americas.

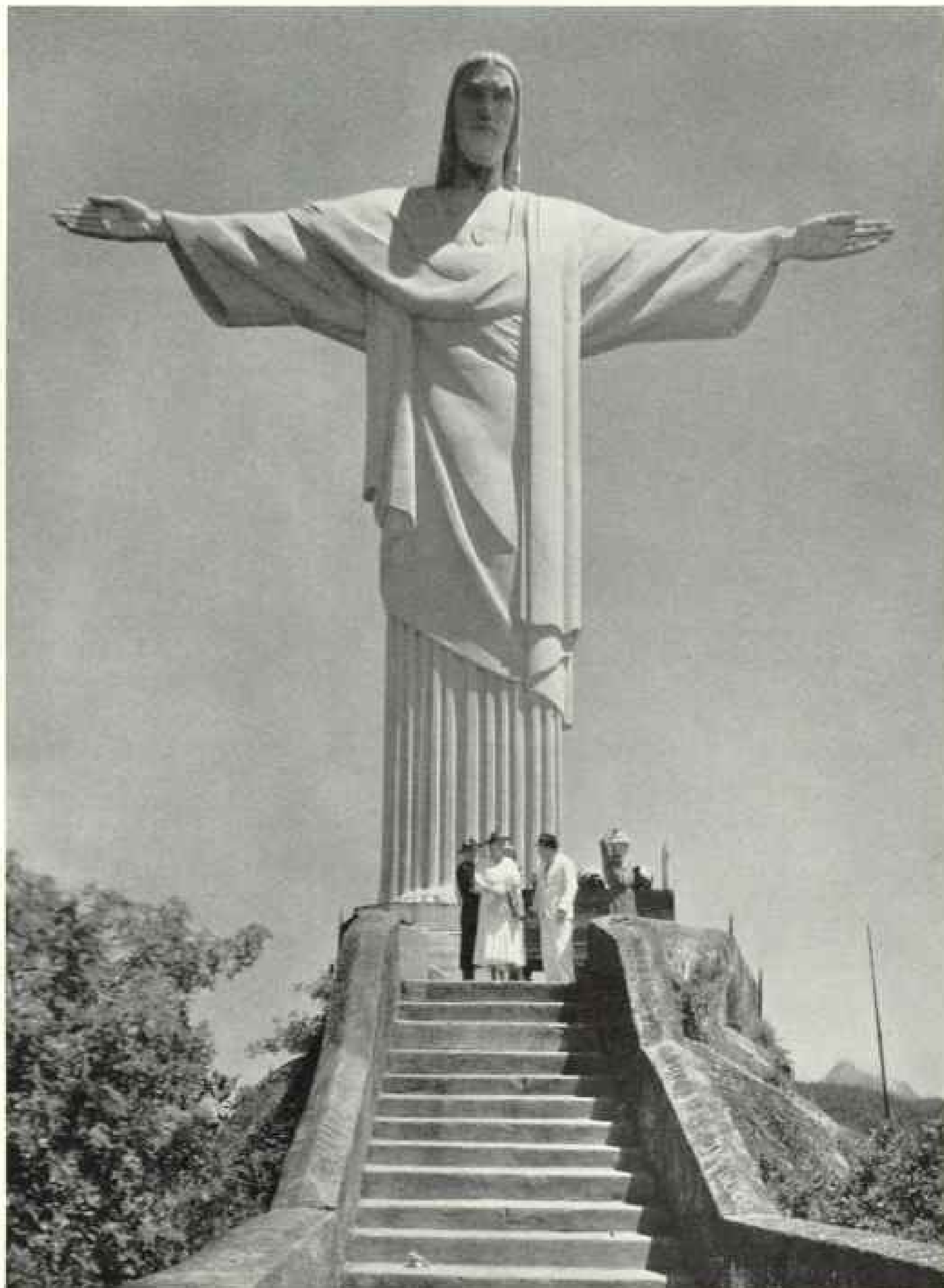
The barometer we carried was nose-diving toward another gale. I took a last look at the majestic cones on Hermite, and at False Cape Horn, directly westward. Then, after a farewell glance at the Horn, we descended as white mists rose on the west winds.

#### HOMeward BOUND

Two days later the *Dorjun* pounded north into wind and seas of a blustery northwest gale running from Milne Edwards Island to Douglas Bay. She pitched so heavily it was difficult to keep our balance. But I felt quiet inside.

I gave Ken the tiller and ducked into the cabin. Bracing myself in a corner, I plucked my old atlas from its shelf and ran my eyes across continents and oceans. Some time later Roy poked his good-natured face questioningly into the cabin.

"Just looking over the East Indies," I explained. "Look like fine voyaging waters. I wonder if the *Dorjun* is seaworthy?"



Photograph from Publishers Photo Service

"COME YE TO THE WATERS" SEEMS TO SAY CHRIST'S HEROIC FIGURE, WITH ARMS OUTSTRETCHED HIGH ABOVE RIO DE JANEIRO AND ITS SPARKLING HARBOR

Rising more than 100 feet from its pedestal, set on the 2,300-foot crest of Corcovado, this heroic statue, facing east, is visible for miles around, especially when illuminated at night with flood lamps (page 795). Made of steel, concrete, and mosaic, from a distance it looks like a giant cross.

# BONDS BETWEEN THE AMERICAS

BY FREDERICK SIMPICH

"FOREIGN trade has long arms," said a rancher on the Argentine pampa. "I buy a Chicago windmill to pump water for my cattle, miles of barbed wire to fence my pastures, or a tractor from Detroit; I pay by selling you North Americans a load of hides for your tanneries, a cargo of flaxseed for your paint factories—or I sell my hogs and cattle to a local packing plant that ships meat to London, and pay you in cash."

Such is the essence of world trade.

On the new economic Map of South America, shown on the supplement with this issue of *THE NATIONAL GEOGRAPHIC MAGAZINE*, are indicated that continent's most important products.

Look at the map, and you see from what regions in South America we buy such items as coffee, cacao, and nitrates. At some spots marked "Oil" and "Copper" huge United States capital is also invested; but, since we have domestic oil and copper, most of these products are sold elsewhere.

In this trade we use capital, credit, diplomacy, management, and *communications*. Only the latter can be shown on the map; there they appear as steamship lanes, railways, and air lines.

To such communications must be added cables, land wires, and radio nets, of which more later (page 799).

Briefly sketching the past of this ever-shifting South American trade geography will better enable us to understand our own position today, and the profound significance of this new map.

## AMERICA'S EARLIEST INDUSTRIES

Portuguese had founded the old town of Olinda, near what is now Recife (Pernambuco) in Brazil, about 100 years before Henry Hudson saw Manhattan Island; by the time Massachusetts Colony was being formed, they had already built many sugar factories thereabouts. Soon afterward, Dutch traders established Pernambuco, where centuries later the German transatlantic dirigible long tied up.

How gold-hunting Spaniards blazed trails from Panama to Argentina, conquered and sacked Indian settlements, and built their own cities and churches is an oft-told tale.

No less familiar is the record of English exploration, with the adventures of Sebas-

tian Cabot, Sir Francis Drake, Hawkins, and others. To a curious degree England's and all Europe's knowledge of early navigation routes and possibilities for trade grew out of the daring voyages of pirates and freebooters.

Early New England whalers sailed these southern waters, and during the Napoleonic wars American ships did a brisk carrying trade between Europe and South America. There was the romance of the Horn, of course, with all the hardy Yankee traders who sailed around it to China—forerunners of those to pass this way after 1849, bound for the California gold fields.

But it was not until after the 1820's, when revolutions against Spain began to succeed and the new republics were asking recognition by the United States, that our country awoke to deep and abiding interest in South America.

Up to the time of our Civil War, probably no man anywhere imagined what a destiny lay ahead of this continent, or even dreamed that from the vast, mysterious, slave-holding Portuguese colony below the Amazon was one day to emerge the rich, powerful United States of Brazil, larger in area than our own 48 States.\*

## ENGLAND A PIONEER IN TRADE

Of course these young nations needed credit, capital, immigration—besides advice—just as did our own land in its youth. As with us, too, it was from Europe these things first came, in return for South America's raw materials.

England, particularly, took the lead. Though she did not send emigrants by hundreds of thousands, as Italy later did, she gave credit, supplied capital and business brains, started ocean ship lines, laid cables, and built railways until by 1900 she dominated the finances and commerce of all South America. Germany, France, and other powers were there, too, but England was supreme.

\* See, in *THE NATIONAL GEOGRAPHIC MAGAZINE*, "Gigantic Brazil and Its Glittering Capital," by Frederick Simpich, December, 1930; "How Latin America Looks from the Air," by Maj. Herbert A. Dargue, October, 1927; "Skypaths Through Latin America," by Frederick Simpich, January, 1931; "Exploring the Valley of the Amazon in a Hydroplane," by Capt. Albert W. Stevens, April, 1926; and "By Seaplane to Six Continents," by Commander Francesco de Pinedo, September, 1928.

Guano from Peru was coming around the Horn to Baltimore, for use on our Atlantic coast farms, when the Mexicans still owned California. In 1809 Brazil sent us her first coffee, a cargo of 1,522 bags, landed at Salem, Massachusetts, from the ship *Marquis de Someruelas*. From that first small shipment this trade has grown till now it takes 7,000,000 or 8,000,000 bags of Brazilian coffee each year to meet our needs.

Even before our Civil War we were Brazil's best customer, taking much also of what Venezuela and Colombia had to sell. Until after the War with Spain, however, South America meant more to us as the source of raw materials and exotic foods than as a market for the things we made.

#### FROM ROUGH RIDERS TO TRADERS

While campaigning in Cuba and the Philippines, many young Americans learned the Spanish language, between 1898 and 1900, and so fortuitously fitted into the changing picture which, in the last years of the 19th century, saw Uncle Sam taking his sample case and starting a trip around South America, looking for new business.

Many of these veterans of Rough Rider days are still scattered through seaport banks and trading firms, or out in the mines and oil fields of South America.

Like Cecil Rhodes in Africa, certain foreign pioneers played conspicuous roles in South America's early development.

Some were English, some Irish, some from the United States. There was William Wheelwright, a Yankee who founded the historic Pacific Steam Navigation Company, built railways, and had monuments raised in his honor. And Henry Meiggs, from California, who "flung the amazing Oroya Railway across the sky-piercing passes of the Peruvian Andes"; and the two Harmans of Virginia, John and Archer, of "Guayaquil to Quito" fame.

In that miraculous rail-laying task, they say fever took one human life for every tie laid through 50 miles of jungle. Both brothers were dead before this job was done—one killed by a landslide; but not before the hardest work was finished and the rails well on their way to lofty, isolated Quito—built like some other Spanish colonial towns, remote from risk of pirates and fever.

Fresh from County Cork, 200 young Irishmen landed in Peru one day in 1850. Among them was William R. Grace. Malaria killed most of the band; other sur-

vivors went on to Australia, but Grace stuck.

He started business with a store ship serving Peru's Chincha Islands guano fleet and lived to see a passenger fleet of his own swarm over two seas, a fleet that was later to send one of the first ships through the Panama Canal and the first under the new Golden Gate Bridge at San Francisco.

When Grace died, long eventful years after his guano adventure, he had been twice Mayor of New York City and had built up an organization which for far-flung diversity of operations was and is without parallel under the American flag.

Its span of life from pioneer schooners and round-the-Horn full-rigged ships of the 1870's to the fast, powerful Douglas airliners of its South American Panagra fleet is one phase of its remarkable transition (page 800).

Opening of the Panama Canal speeded up sale and travel between the Americas and saw the Grace operations broaden almost to resemble such historic firms as the East India or Hudson's Bay Companies.

Besides its sea and air ships, its two-way barter with South America is a perfect example of how commerce flows. Southbound, its boats may carry food, steel, farm implements, or other machines needed there, and bring back to us anything from tin and nitrate to balsa wood and coffee.

Merely to list its manifold works ashore would fill pages. It has done everything from mining Chilean nitrate to reorganizing the national debt of Peru and building the Transandine Railroad. Its industrial interests include such diversified enterprises as sugar estates and refineries, cotton and woolen textile mills, cottonseed oil and lye mills, flour and cement mills, and coffee plants; it has branch offices in most of the major South American republics, competing with old-established European traders.

#### AMERICAN-BUILT LOCOMOTIVES

"Since 1862, when we sold our first engine to South America, we have had some odd adventures down that way," said an official of the Baldwin Locomotive Works.

"Once a boiler fell overboard in rough Brazilian coastal waters; it lay under the sea more than 50 days before we could fish it up, with the help of divers.

"When we put ten locomotives into the hold of one ship and then set 15 passenger coaches crosswise on the deck, and started



Photograph from S. C. Johnson & Son, Inc.

#### HERE IS WHERE YOUR TEA DANCE BEGINS

Brazilian palm-leaf cutters load their patient *ase* with the fibrous leaves from the carnauba palm, which yields a valuable wax. Shine your shoes, polish the floors, put on a record for a fox trot to soft candlelight—shoe polish, floor wax, phonograph disk, and candles all may contain ingredients from this tree. More than a century ago Europe burned carnauba wax candles in churches. (page 791).

this curious-looking load off for Chile, even that country's Ambassador in Washington came to see the strange sight. The coaches were so long they stuck far out over the sides of the ship. The whole load represented about two full-fledged passenger trains and eight extra engines. Pessimists said, "In any blow that ship'll capsize!" But we got to Chile all right (page 803).

"Back in 1878 we built a locomotive, the *John Lucas*, for the old Camden and Atlantic Railway. Somehow it got sold to an American who was mining gold in Dutch Guiana. His mine petered out. Long years afterward, when the jungle guides of a New York architect exploring Dutch Guiana (Surinam) were cutting their way through vines and brush, they came upon an old engine. A plate on it read: 'Baldwin Loco-

motive Works, Philadelphia, 1878. No. 4287.' It was the old *John Lucas*!"

"In more than seventy years we have sold about 3,000 locomotives to South America; their work has done a lot to build up that continent's wealth."

#### FORD GROWS RUBBER TREES IN BRAZIL

Most of the world's rubber once came from the Amazon Valley.\* After the discovery of vulcanization, rubber's uses multiplied and demand for it raised prices to \$3 a pound. Brazilians made fabulous fortunes almost overnight. Manáos, 1,000 miles upstream from the Atlantic, boomed from an obscure village to what was, for a time,

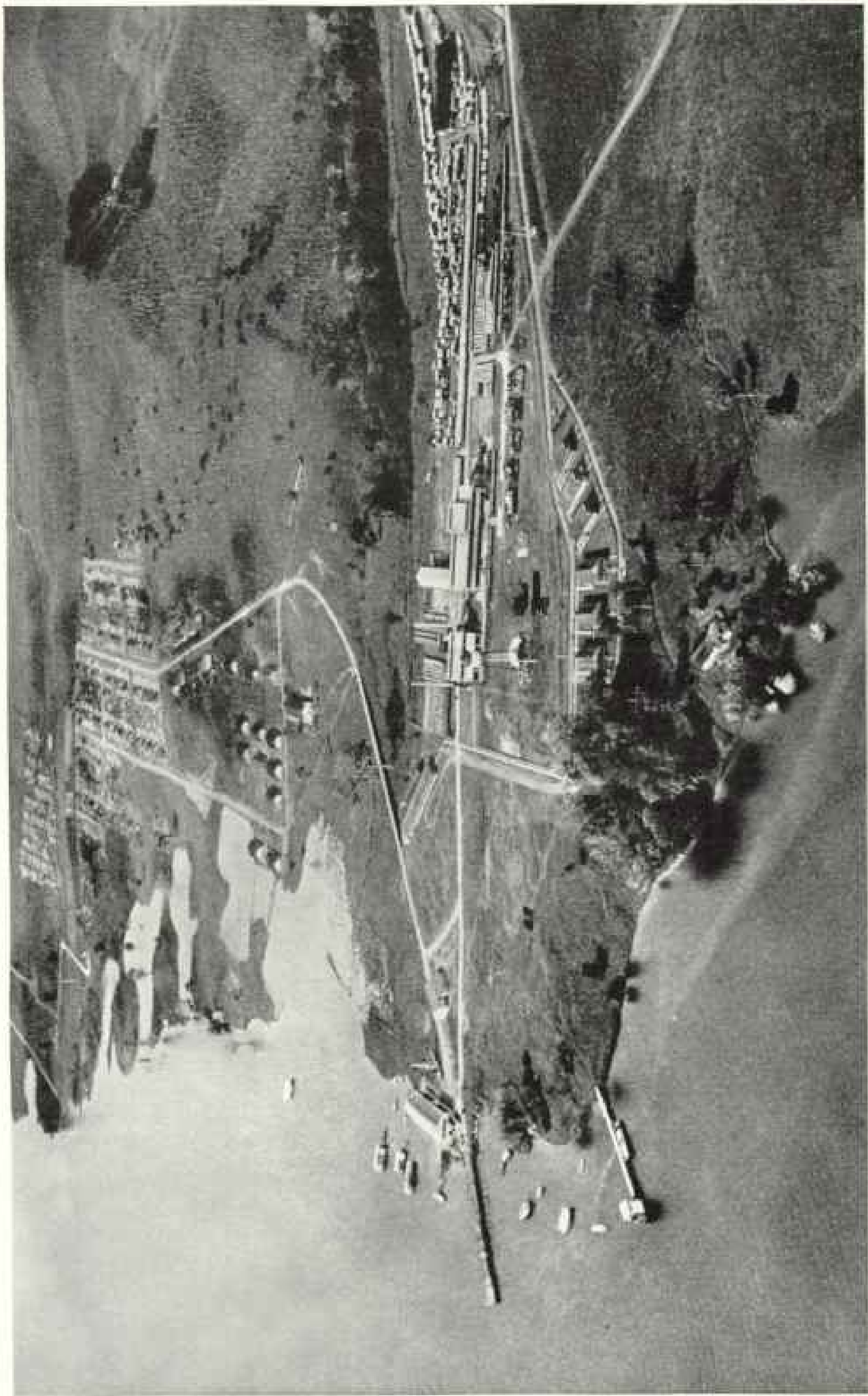
\* See "Amazon, Father of Waters," by W. L. Schurz, in *THE NATIONAL GEOGRAPHIC MAGAZINE* for April, 1926.



© Scipio

**OIL FOR THE LAMPS OF SOUTH AMERICA AND GAS FOR HER CARS COME FROM WIDELY SCATTERED FIELDS**

Colombia, Venezuela, Peru, and Argentina are among the continent's oil-producing areas. Newspaper editors hope that nothing important will happen at a place with a name like this, which would not fit a headline—Barrancabermeja, on the Magdalena River, in Colombia. Here stands a refinery of the Tropical Oil Company, an American concern whose hundreds of wells produce millions of barrels a year.



Photograph from Campinas: Ford Industrial do Brasil

DEEP IN THE AMAZON VALLEY RISES THE NEW RUBBER PLANTATION TOWN OF FORDLANDIA

Far from travel lanes or frequent steamers, in the heart of tropic wilderness on the Tapajós River, a Brazilian subsidiary of the Ford Motor Company grows millions of trees whose latex in years to come may add substantially to the world's crude-rubber output (page 787).





Photograph by James C. Swinton

LIKE A DISPLAY OF PRIZES AT AN AMUSEMENT PARK IS THIS "RIO" TOY SHOP

The proprietor watches the cameraman, while two customers hesitate before a dizzy jumble of dolls, popguns, punching bags, and all-day suckers. Many of the toys are made in Brazil.

Brazil's wealthiest city, Belém (Pará), near the Amazon's mouth, believed itself destined to become South America's largest city—and built accordingly.

Then this rubber goose that laid the eggs of gold was slain. Rubber seeds, smuggled out, were used to start new plantations in Malaysia; now *they* supply most of the world's needs, and Brazil's output has dwindled to a few thousand tons.

#### THE RETURN OF A NATIVE—RUBBER

However, following studies by the American Rubber Commission, a Brazilian subsidiary of the Ford Motor Company began operations in 1927 in the Amazon Valley, original home of the rubber tree.

It is expected that, within the next ten

years, these Ford plantations will play an important role in world production of crude rubber (page 789).

Comprising some 2,500,000 acres, the rubber lands lie along the Tapajóz River, a big tributary of the Amazon. At Fordlandia, 110 miles from the Amazon, the first trees were planted in 1929, and this year the first tapplings of latex were made.

At Belterra, about 30 miles above the Tapajóz's mouth, another plantation is being started. This one is laid out in squares, and 25-foot roads run straight through at mile-and-a-half intervals. No effort is being made to extend plantings rapidly, because of unknown problems that may be encountered.

Up to July 31, 1937, on both rubber

farms more than 12,000 acres have been cleared and planted to 2,200,000 seedlings.

In a nursery about five million more young trees are being grown. The company has built its own town, with water works, sewers, hospital, stores, homes for the United States staff and native workers, a sawmill, dry kilns, electric plant, miles of roads, docks, warehouses, etc. It is also experimenting with a view to growing and marketing other tropical products, such as fibers, nuts, and vegetable oils.

At Santarem, near Ford's new town, a now vanished colony of "unreconstructed" Southern States citizens settled after our Civil War.

#### FLOOR WAX FROM AN AMAZON PALM

Carnauba wax, the map shows, originates in northeast Brazil. It comes from a palm. Europe burned carnauba wax candles more than a century ago. Brazilian natives call this palm "the tree of life"; to them it is anything from food, drink, and medicine to hat, mat, broom, hammock, and cow feed.

Only its wax interests us; we use it to help make talking-machine records, to cover coils in radios, but mostly in floor wax and polishes (page 787).

At Fortaleza, chief port of Ceará, the Johnson Company, of Racine, Wisconsin, operates its own laboratory and also owns experimental palm farms in the interior. Few angles of our trade geography reveal modern trends more graphically than do the adventures of the airplane exploring party sent to Brazil by this company. Says H. F. Johnson, Jr., who led the expedition:

"We not only flew all the way from Racine to Brazil in our plane, but flew it up the Amazon to see Ford's rubber farms on the Tapajóz; hunting palm trees, we made many flights along the Parnahyba; we flew up the wild, little-known Tocantins, over savage Indian country and vast, trackless forests, and back and forth, up and down streams that didn't show at all on our maps. Along the Jaguaribe we saw heavy stands of carnauba palms.

"Flying over high country between Ceará and Pernambuco, with all its canyons, rocks, and palisades, reminded us of the high plateau described in Conan Doyle's *Lost World*. Landing was often a problem. One native had told us we could come down on a large lake near Iguatú; the lake proved to be just where he said it was, and just as large—but it was too full of trees!

"Every day brought some new experience. Often I caught and sketched colored insects, butterflies, lizards; one little fellow had glue on his feet, and stuck to my hand. I watched monkeys swinging from rope-like vines. Such vines were sometimes hundreds of feet long. I tried swinging on them, like Tarzan in the movies, and found they would support my weight.

"I heard many strange bird calls. One bird had a cry that sounded like the declension of the Latin pronoun—'hic, haec, hoc.' I named it the 'Latin Bird.'"

Who says foreign trade is all dull, nothing but figures!

Booming, bustling Venezuela graphically reflects the give-and-take of our foreign trade. With fewer people than Chicago and more area than any European nation except Russia, it has neither a domestic nor a foreign debt!

"There must be oil here," men said, when they found a 1,000-acre asphalt lake in the State of Monagas and more like it around the Lake of Maracaibo. And there was!

Beneath that lake and the swampy lands of its old bed lies one of earth's greatest petroleum pools. Along with Anglo-Netherlands corporations, several United States companies hold concessions here.

Special light-draft tankers and novel ways of drilling in the shallow Lake of Maracaibo are aspects of these operations.

Anglo-Dutch firms have been as busy as the Yankees in drilling here; but most machinery, tools, and pipe-line supplies came from the United States.

Dizzy oil millions dumped into Venezuela's lucky lap pay now for her huge public-works program, for new roads, harbors, model factories, theaters, hotels, and bus lines.

#### MEAT AND BANANAS CROSS THE SEAS

With almost dramatic swiftness Uncle Sam lost his job as the world's biggest butcher when his beef-export business shifted to Argentina. Fly over that land now, or over Uruguay or Brazil, and you see herds of meat-bearing animals bound for packing plants known here as *frigoríficos* (page 794).\*

\* See, in THE NATIONAL GEOGRAPHIC MAGAZINE, "Life on the Argentine Pampa," by Frederick Simpich, October, 1933, and "Buenos Aires and Its River of Silver," by Harriet Chalmers Adams, October, 1921.



Photograph by Alfred T. Falmer

#### BRAZILIAN PRESIDENTIAL GUARDS ARE MOUNTED ON AMERICAN MOTORCYCLES

Motor-conscious North Americans always are amazed at places one can't go by automobile in South America because of lack of roads. Of the world's 40,000,000 or more motor vehicles, comparatively few are used in Latin America. In recent years, however, road building has been a major program of the more progressive republics, and the day is not remote when a comfortable coast-to-coast drive may be made, from Venezuela to Argentina.

Swift, Armour, Wilson, Morris—they're all there—an interesting example of modern, three-cornered trade geography, where capital from one country works in a second to make goods for markets in yet a third land! In Brazil, Wilson and Armour fatten cattle on their own ranches.

World food trade, of which meat traffic is part, is a fascinating thing. Each year about 50,000,000 tons of food are hauled across the seas. Over half is grain; a fifth is sugar. Only one twenty-fifth is meat; many nations eat so little meat. By weight, bananas are twice as important in sea trade as beef. Even the coffee, cacao, and tea shipped weigh more than the meat.

Most beef and mutton from South America go to Great Britain; she buys two-thirds of all beef and nearly all the mutton that move overseas.

In another odd way our trade with South America has affected farm life at home. We used to ship much Pacific coast wheat to England. In 1882, a bumper crop year, more than 500 sailing ships cleared from Oregon and California ports with wheat and

barley. Today that export trade has vanished. But grain elevators, American style, rise on the Argentine pampa. What happened?

Americans built farm machines of magic powers. With advertising, clever salesmen, and scientific crop advisers, we put these machines into the hands of potential competitors in grain-growing lands all over the world.

#### RAW MATERIALS RETURN AS FINISHED PRODUCTS

Argentina is a perfect example. Its vast, rich fields are not only covered with United States-made farm implements, but it has also bought our windmills, motor vehicles, and barbed wire by the fleetload.

To Argentina we even sent our famous Kansas red wheat, as seed for sowing the rich pampa "wheat crescent," and thus further aided Argentine grain exporters to compete with us for world markets! To add a final touch to this scene of transplanted Yankee farm methods, you may see an American veterinary running around over



Photograph by Amos Burg

#### BURNING TRAINLOADS OF COFFEE NEAR SÃO PAULO TO STABILIZE WORLD PRICES

Plagued by similar surplus and riddles of distribution, in recent years the United States Government controlled production of wine and paid farmers not to plant certain acreage. Now Brazil's problem of too much coffee is being somewhat solved by the rise of a cotton crop almost equal in value to her coffee (page 807).

the great pampa ranches in his own rolling motor-truck laboratory, looking after the health of livestock (page 798).

Often machines we send to South America contain metals mined down there.

Stand on the dock at Mobile, Alabama, and you see a ship from Surinam or British Guiana unloading bauxite, ore of aluminum.

Some open-pit mines along the Cottica River in Surinam are controlled by the Aluminum Company of America; here big Diesel shovels tear at the tropic earth, lifting out the ore that goes to refining plants in Mobile, or by Mississippi barge up to St. Louis. Your kitchen pans, or parts of your car, or the plane that flies you back to South America, may have come from these Guiana jungle mines.

Just another romance of raw material.

Trade's two-way stream is shown in some aspects of Du Pont's operations. This diversified chemical enterprise may buy South American vegetable wax, linseed oil, or rubber, and then ship these same items back to South America converted into such new forms as paints, coated textiles, and other materials. Du Pont also owns in-

terests in factories in Argentina, Brazil, and Chile which make rayon, artificial leather, chemicals, dynamite, etc.

#### ELECTRICITY COMES TO A CONTINENT

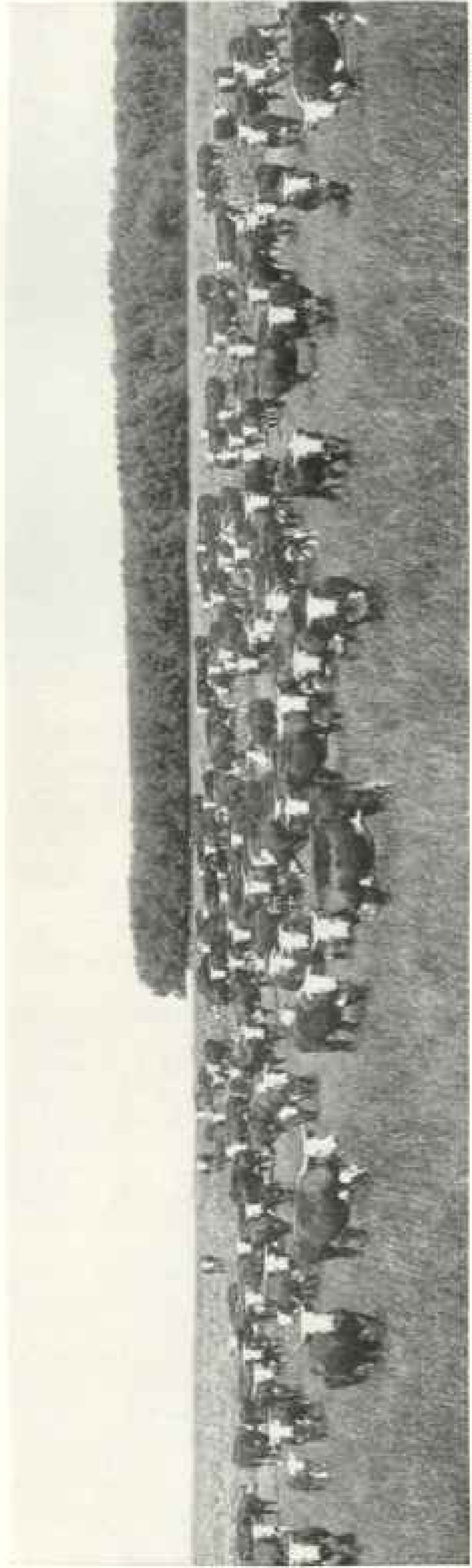
"Electricity and aviation epitomize in two words the most potent forces which have brought miraculous transformation in the life and business of many Latin-American regions," says James S. Carson, Vice President of the American and Foreign Power Company, Inc. "The fact that United States money, organizing ability, and experience contributed very largely to this is an outstanding example of what a real 'good neighbor policy' can become.

"Electricity's rapidly growing use now changes the living habits of whole communities. Any night, ten years ago, one might have walked along the principal thoroughfare of many a beautiful little South American city and found most shop windows darkened by the rolled-down steel shutters which merchants had used for decades. Tonight such avenues are as brilliant as Broadway. This is typical of hundreds of cities, large and small.



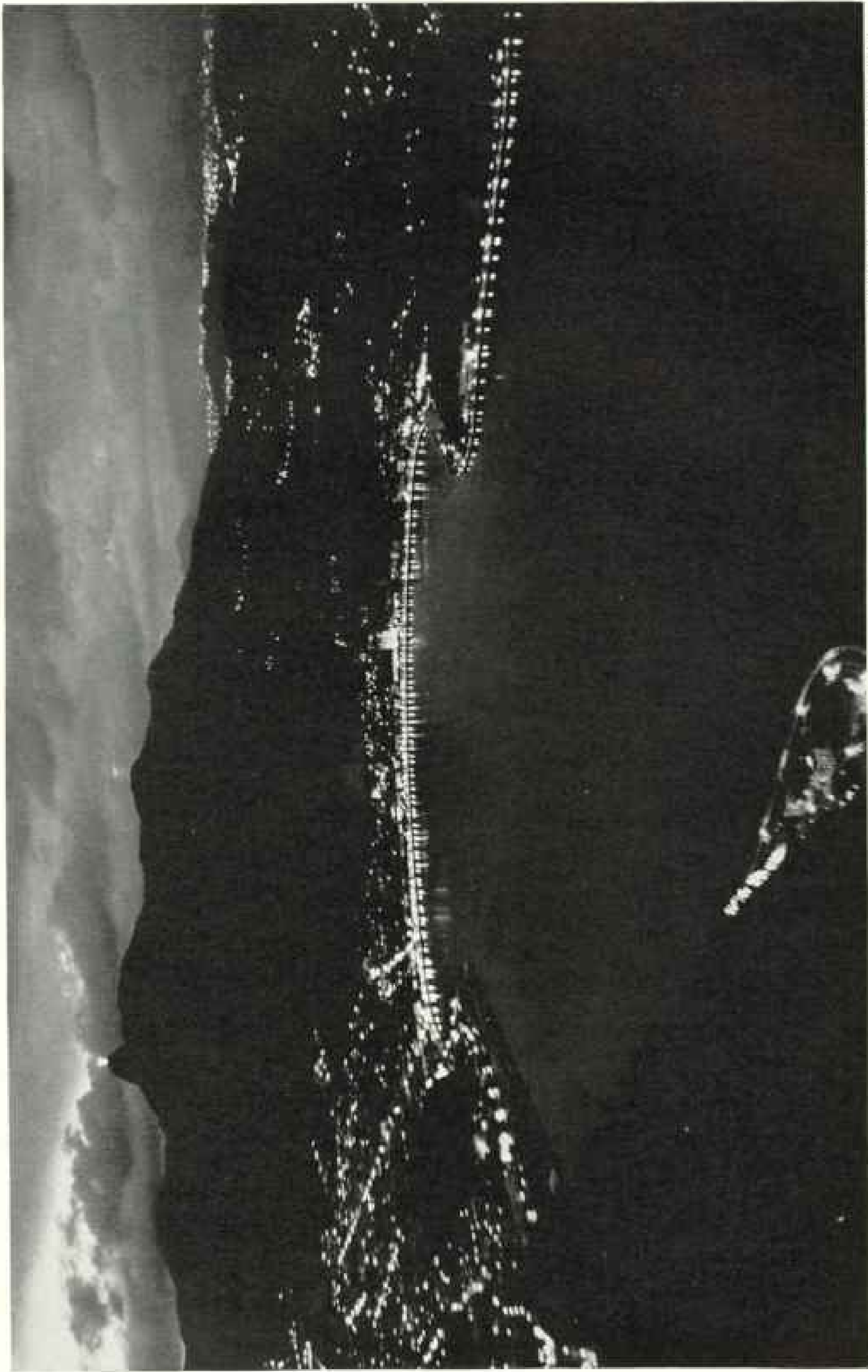
Photograph from Publishers Photo Service

VISITORS FROM THE UNITED STATES ADMIRE THE DE HOZ MODEL RANCHE NEAR MAR DEL PLATA, ARGENTINA



Photograph by H. G. Lobb

ONCE MOSTLY HOOPS, HORNS, AND TAILS, ARGENTINA'S HERDS HAVE NOW BEEN BREED UP TO HIGH MEAT-BEARING STANDARDS



Photograph from Publishers Photo Service

**TWINKLING LIGHTS AT DUSK ETCH RIO DE JANEIRO'S GLITTERING SHORE LINE AGAINST DARK MOUNTAIN BACKGROUNDS**

Seen from atop Sugar Loaf Mountain (Pão d'Azúcar), this inspiring nocturnal panorama sweeps west and up to Corcovado's 2,100-foot peak, with its illuminated figure of Christ outlined against the clouds (page 784). Botafogo Bay, with its glistening white beaches, is one of the world's most spectacular harbors.



Photograph from Wide World

BUENOS AIRES' HARBOR FLEET TOOTS WELCOME TO PRESIDENT ROOSEVELT

Aboard the United States cruiser *Indianapolis* the President and his party slowly enter the inner harbor from the Río de la Plata, to attend an inter-American conference held in 1936. For more than a century the various nations of the two Americas have been holding such diplomatic gatherings to promote peace and welfare (page 808).

"More than 200,000 homes of the humbler classes now have the convenience of electric light through the use of a single unit system. Flatirons, vacuum cleaners, and even the electric washer have invaded these lands of relatively cheap servants; our wires connect now with more than 30,000 electric refrigerators, in homes that once had no satisfactory way of keeping milk, meat, and other foods cool.

"In some places salesgirls help introduce these things into homes. Thousands of electric ranges have replaced the charcoal brazier which for centuries was standard in kitchens.

"Our company has helped native associated organizations obtain more than \$500,000,000, to provide electricity for nearly a thousand cities and towns in 12 of the most important countries of Latin

America. In theaters, public buildings, and in a few private homes air conditioning has also been installed.

"In one country alone approximately 15,000 men and women are employed; at the peak of the construction we worked more than 20,000."

From the United States came equipment to electrify some steam railways in Chile and Brazil. Most streetcars in use down there were built in the United States.

Between 60 and 70 per cent of South America's radio receiving sets and nearly all its refrigerators are of United States origin. Recently the Westinghouse Company sent a standard-model refrigerator by airplane from New York to Pará, as an advertising feat.

Andean mines, from gold in Colombia and copper in Peru and Chile to tin in



Photograph from Austin-Western Road Machinery Co.

#### AMERICAN-MADE MOTOR SWEEPERS HELP BUENOS AIRES CLEAN THE STREETS

Parked at the curb are 10 new sweepers, just unloaded from a ship. Streetcars, buses, taxis, trucks, tractors, motorcycles, road-making and farm machinery from the United States are all widely used in Argentina (page 802). Demand for cars leads to more road building; the new roads encourage cross-country bus lines.

Bolivia, are operated largely with generators, motors, shovels, drills, hoists, and transformers made in the United States.

The new Avenida General Salaverry, the "Golden Road of Lima," is illuminated with the rich yellow light from General Electric sodium vapor lamps. The same light that arches the darkened sky on the magnificent bridges at San Francisco Bay and illuminates many of the world's imposing highways, prolongs the effect of the setting sun on the road from Lima to the sea.

Already famous for many an exquisite avenue, the city of Pizarro now reaches out with another path of beauty across the Rimac Valley.

So it goes. Statues, monuments, public buildings, parks, avenues, highways, swimming pools, athletic fields, and many a

private home and garden are illuminated by lights from the laboratories and factories of the United States.

#### COLOMBIA'S BEST CUSTOMER, UNCLE SAM

Historic Colombia, famed for gold, platinum, and emerald mines, and for a coffee of delicious mildness, finds in Uncle Sam her best customer. We take 90 per cent of all coffee from her 450,000,000 trees.

From his plantation high up among the steep hillsides of Santa Marta district, one United States grower sends coffee berries rattling down to his mill through a long galvanized iron pipe! Sluiced by this flume, transport is faster than by mule.

United Fruit's banana colony at Santa Marta is another example of transplanted United States methods and standards of living.





Photograph from *Compañía Swift de la Plata*

MILLIONS OF CATTLE, SHEEP, AND SWINE MAKE THE ARGENTINE PAMPA A VETERINARIANS' PARADISE

English, Scottish, and Irish settlers largely started and developed the country's enormous ranches, but North Americans fostered the rise of the packing industry. Here animal-husbandry experts, trained by United States veterinarians, operate a rolling laboratory with instruments, medicines, and serums, moving swiftly from herd to herd (page 797).

Automatic conveyers load the company's familiar white ships. Its "company town," the Prado, is a model of tropical comfort and cleanliness. Even the banana farm centers, many miles inland, have their club-houses, amusement parks, pools—and dairy cows insured against fever by crossing Jerseys with the humped zebus of India!

MONEY RIDES ABOUT THE MAP

Today about two and a half billions of United States capital are invested in South America; but Great Britain's share is almost twice as much.

Some of this, as hinted at by South American government, city, and industrial bonds and stocks listed on New York's "big board," are bought and sold for yield, or speculation.

Most of our investments down there, however, are in oil fields, mines, railways, etc., owned by giant United States corporations which operate in South America. Here, as in other foreign lands, they seek to expand sales and profits from their local operations by such investments.

All this has no political aspect whatever; it reflects no United States ambition to own more land or to dominate any smaller country. Money, whether from England, France, or from the United States, flows to South America simply because its countries welcome this outside capital, needed for their growth and development.

These mass-production giants tend to take the place now of former individual traders in laying a stronger foundation for South American economy.

"There is no exportation of capital from the United States to the industry of South America which is not an extension of the domestic business of industrial concerns in the United States," writes J. F. Normano, of Brazil.

Engineers, technical men, and managers in American companies working here usually are United States citizens.

Yet, despite our huge interests, only about 12,380 North Americans reside in this whole continent, as compared with millions of Italians, Spaniards, and Portuguese, hundreds of thousands of Germans, and



Photograph by Edmundo Lira Lira

"NICE HORSEY! COME AND DANCE WITH PAPA!"

This two-year-old, his four feet hobbled, is being tamed by a Chilean cowboy in boots and spurs. The man, shaking his *poncho*, acquaints the wild colt with man's ways, sounds, and smells. Chileans are good horsemen, as United States Cavalry officers, competing with them in horse shows, can testify.

many English, Scots, Irish, French, and some Japanese.

The workers on United States pay-rolls are mostly native men and women.

#### THE HEAVY TRADE IN WORDS

Cables strung between North and South America total 27,000 nautical miles. Over these, and the invisible radio paths, there flow now some 55,000,000 words a year, or about 100 per minute, day and night. Much is news, being received and sent by press associations. Added to this word tide are all the long-distance telephone talks.\*

With Europe, over transatlantic cables and also by air, flow other millions of words. To foster their trade, and for other reasons, powerful government-controlled stations in Europe bombard South America with programs, speeches, and news.

No such broadcasts are sponsored by our Government; but the National Broadcasting Company, as a patriotic duty, broadcasts

\* See, in THE NATIONAL GEOGRAPHIC MAGAZINE, "World's Highest International Telephone Cable," December, 1930, and "Miracle of Talking by Telephone," by F. Barrows Colton, October, 1937.

programs from the United States. From Radio Corporation of America stations at Bound Brook, New Jersey, and Rocky Point, Long Island, it sends music, speeches, even domestic science and beauty-culture talks for women. Directional beam antennas carry free daily news broadcasts in Spanish and Portuguese straight to South America. R. C. A. also operates direct commercial radiotelegraph circuits and accepts hundreds of messages daily to and from all important South American cities.

First cables to reach this southern continent landed early in the 1870's, via the West Indies from Europe. Today the direct radio press rate is only five cents a word, as against \$5, first charged between New York and London!

Now the All America Cables company, owned by the International Telephone and Telegraph, has three lines operating to South America.

Founded in 1878 as the Mexican Telegraph Company, it reached Colombia, Ecuador, and Peru in 1882, a significant event celebrated on both continents.

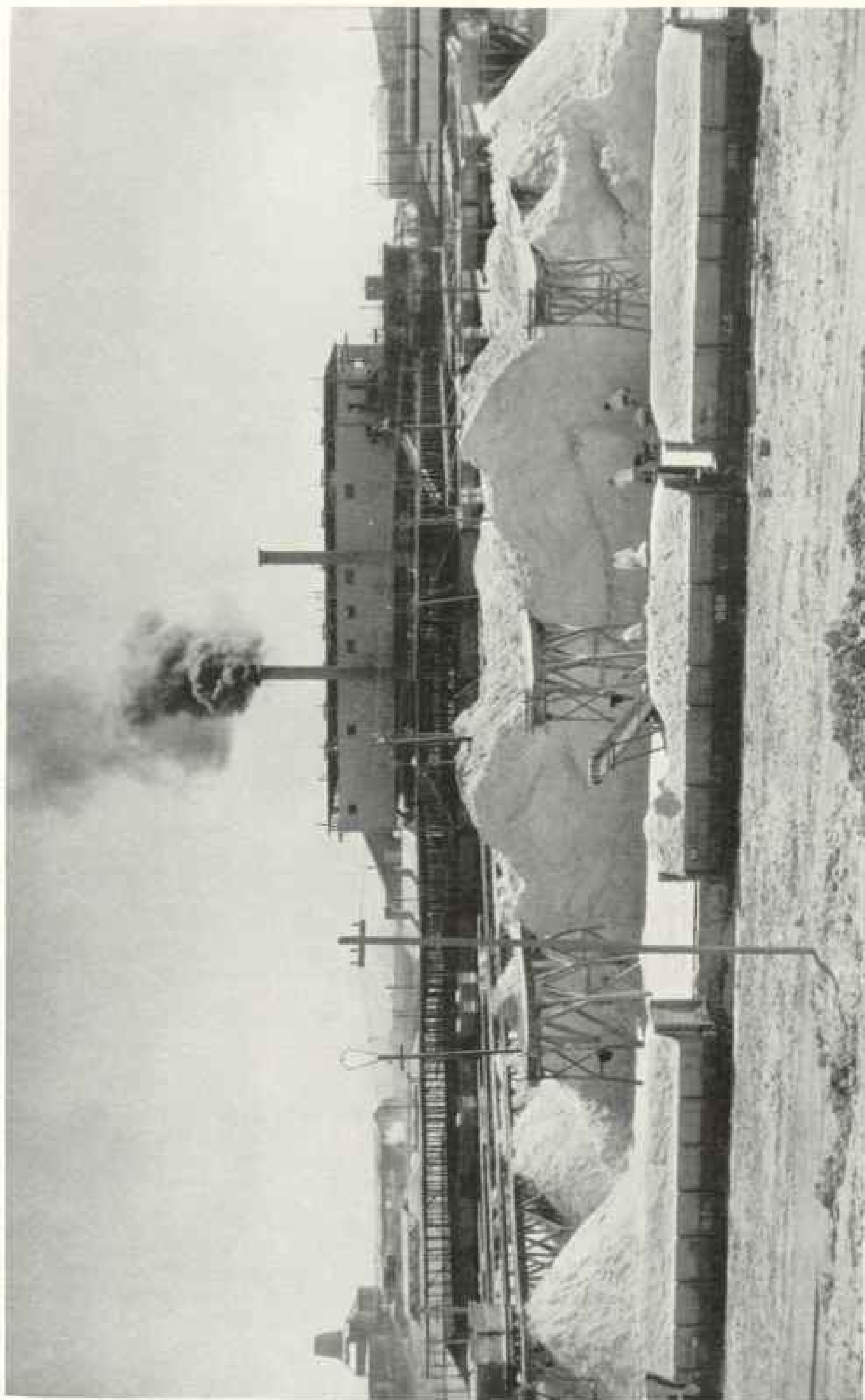
Since 1927, when the I. T. & T. bought



Photograph by Henry Clay Gifford

THE SKY ROAD OFTEN IS THE ONLY ROAD ACROSS THE LOFTY ANDES FROM CHILE TO ARGENTINA

Here a powerful passenger plane of Pan American-Grace Airways passes 13,681-foot Aconcagua Peak, with its scarf of snow. Though a famous cog railway also climbs Andean slopes and crawls through long tunnels and snow sheds, paralleled roughly by a motor highway, snow and avalanches often block these routes, so that mail and passengers can cross only by air—when bad weather doesn't also halt the planes.



Photograph by Frank Edmeston

#### SUN-DRIED PLAINS OF NORTHERN CHILE MAKE FERTILE ACRES IN FARAWAY PLACES.

For decades Chilean nitrate has been mined and sold to many foreign lands as a fertilizer. Cotton planters in our Southern States formerly helped support the Chilean Government by their huge nitrate purchases. We still import shiploads, but the advent of synthetic nitrates makes us now not entirely dependent on Chile. Here at Tarapacá piles of nitrate are heaped, ready for loading (page 802).



Photograph by Frank Eberford

#### POWDER AIDS PLOWSHARES BY BLASTING CHILEAN NITRATE

Taking an electric spark from the high-tension railway power line near Iquique, the man in the foreground "shoots" five tons of powder set in 400 drilled holes. From here the loosened crude nitrate is hauled to mills for refining treatment. For years Chile enjoyed enormous income from what was practically a world monopoly; now nitrates extracted from air diminish her receipts.

All America Cables' system, its wire and radiotelegraph service has spread into every country from Panama to Patagonia.

Prior to 1928, you could not telephone from one South American country to another; now they can talk not only with each other, but with about 94 per cent of all telephones scattered over the world.

In I. T. & T.'s world-wide operations it employs four cable ships. One is based at Panama, for work around South America.

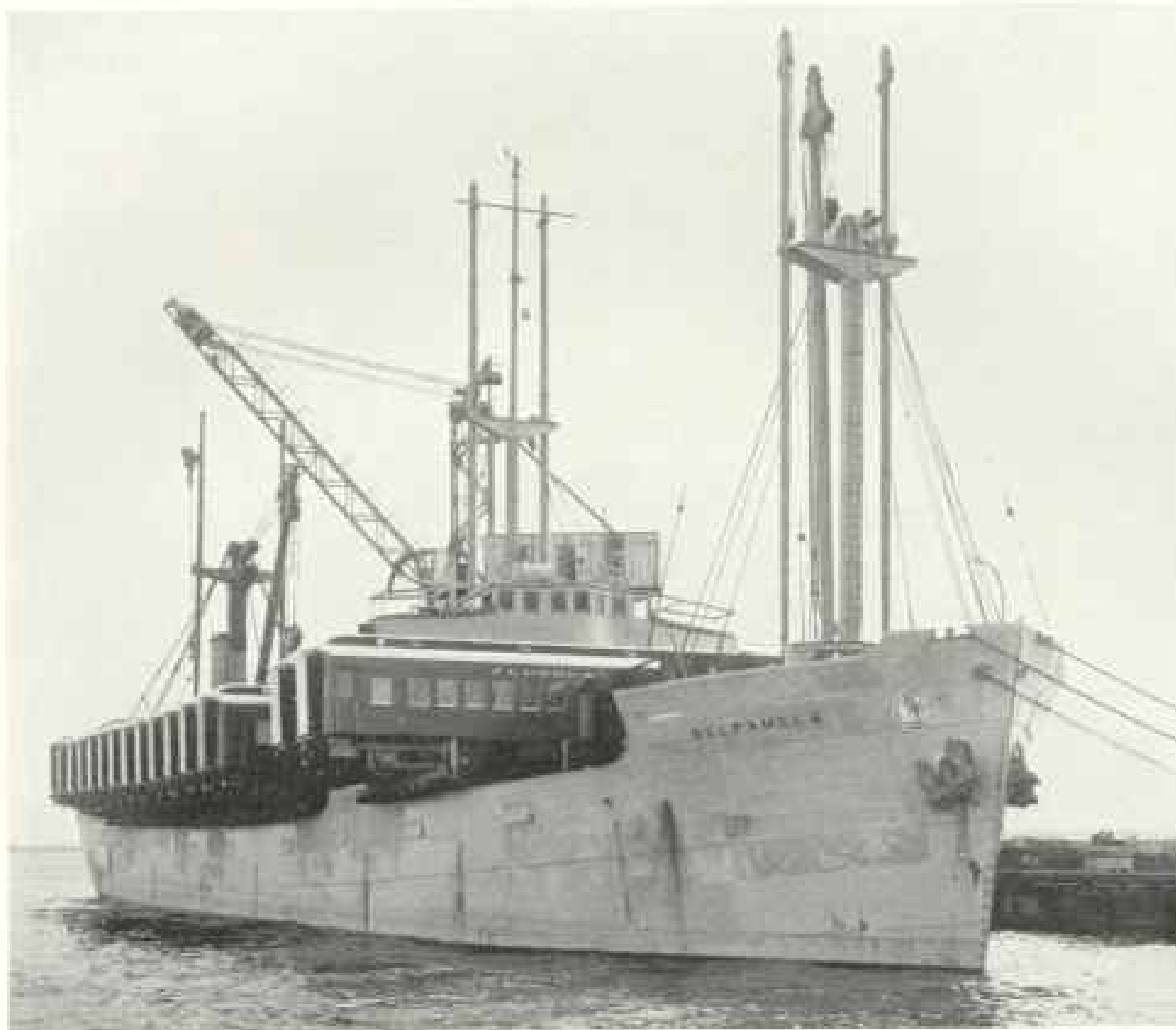
"Yes, we can confirm the old yarn that whales interfere with cables," said an I. T. & T. official. "When our ship's grapnel brought up one end of a broken cable off Peru, a dead whale came up with it. He had drowned; he must have been scratching his back on the cable to get rid of barnacles and somehow got caught on it; maybe he got it in his mouth."

"The old argument, 'Do roads bring wheels or do wheels make roads?' seems to have been won by the wheels in South America," said James D. Mooney, Vice President of General Motors Corporation.

#### AUTO IMPORTS SPEED ROAD BUILDING

"Increasing use of motorcars, trucks, and buses, especially in Argentina and Brazil, is causing new roads to be built into many regions where heretofore were only mule trails (page 797).

"Although General Motors has three factories operating in South America, the potential market of that continent has hardly been scratched. Both Argentina and Brazil are fertile fields for American motorcars. Their progressive characteristics make them receptive to methods which have proved effective with their northern neighbors.



A TRAIN TAKES A LONG FERRY RIDE TO CHILEAN TRACKS!

From the Baldwin Works near Philadelphia this ship sailed with a deckload of passenger coaches and ten locomotives in its hold. Set ashore on tracks at Valparaiso, engines got up steam, bells rang, whistles blew, and the shiny new trains rolled away for steep climbs among Chilean mountains (page 786).

"Mass production, aggressive advertising, and sales campaigns appeal to their imagination."

You can't drive your car, as yet, from New York to Buenos Aires. But that day is coming.

Uncle Sam for years has worked with nations from Mexico to Argentina to build a great inter-American highway. With money from Congress our Bureau of Public Roads has helped with surveys; in many countries sections of the road are already open.

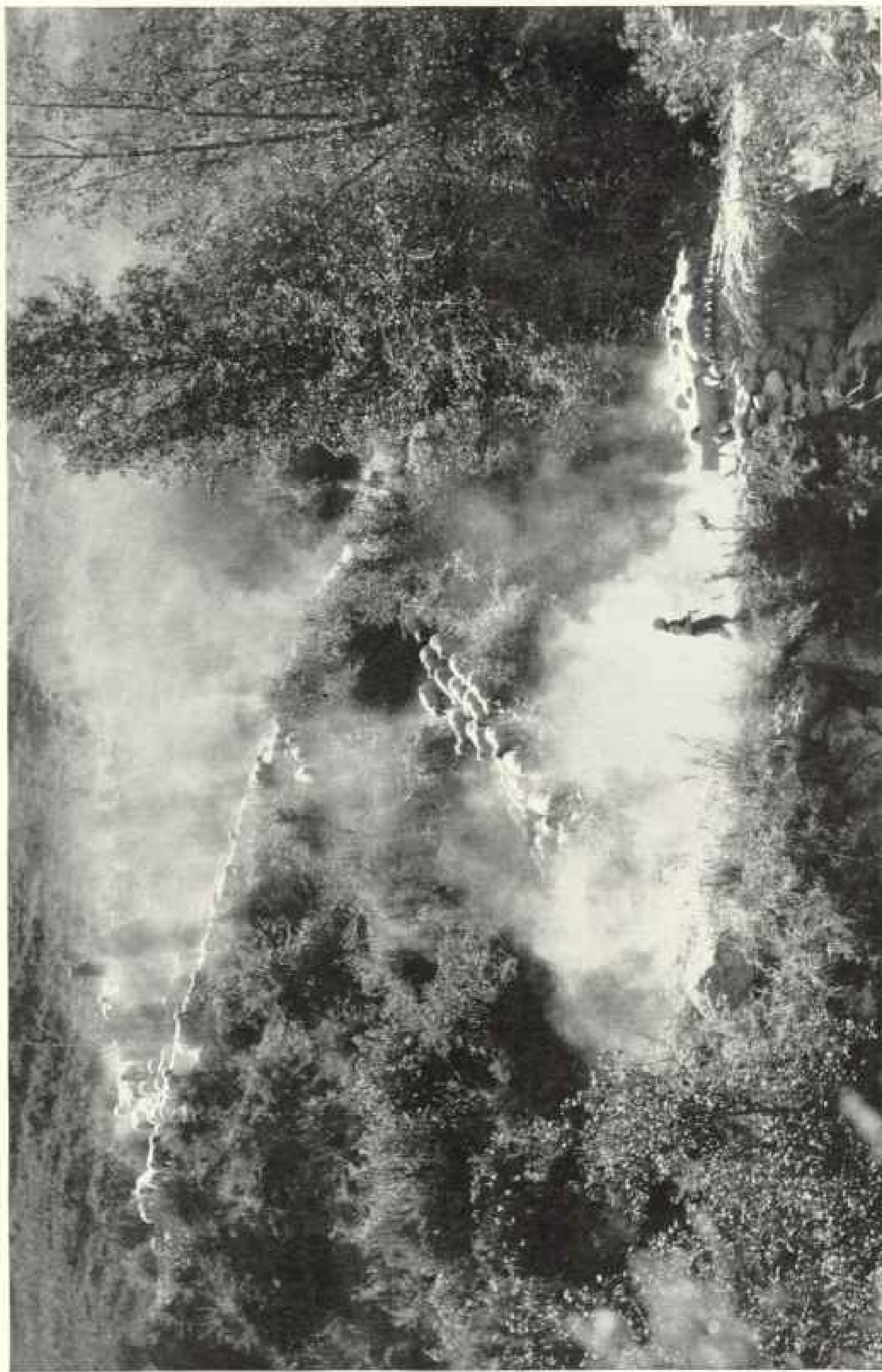
From Caracas, in Venezuela, you can now drive southwest nearly 1,100 miles, via Cúcuta, to Bogotá, and from that high capital on down another 685 miles almost to the border of Ecuador. Through that land there yet remains to be built some 800 miles of road, to form another link in the inter-American highway.

Peru is spending \$12,500,000 on better roads (page 805).

Car traffic from Concordia, on Chile's north frontier, to Santiago, 1,577 miles south, has been open since 1932. Parts of this road are not good, but it is passable the year round.

Between Chile and Argentina, via the Andean passes to Mendoza, motorcars and buses are running—when this cold, crooked road is not blocked with snow. Plans are afoot to relocate this Trans-Andine road and cross the divide farther south, in the lake region, to save trouble with snow and slides.

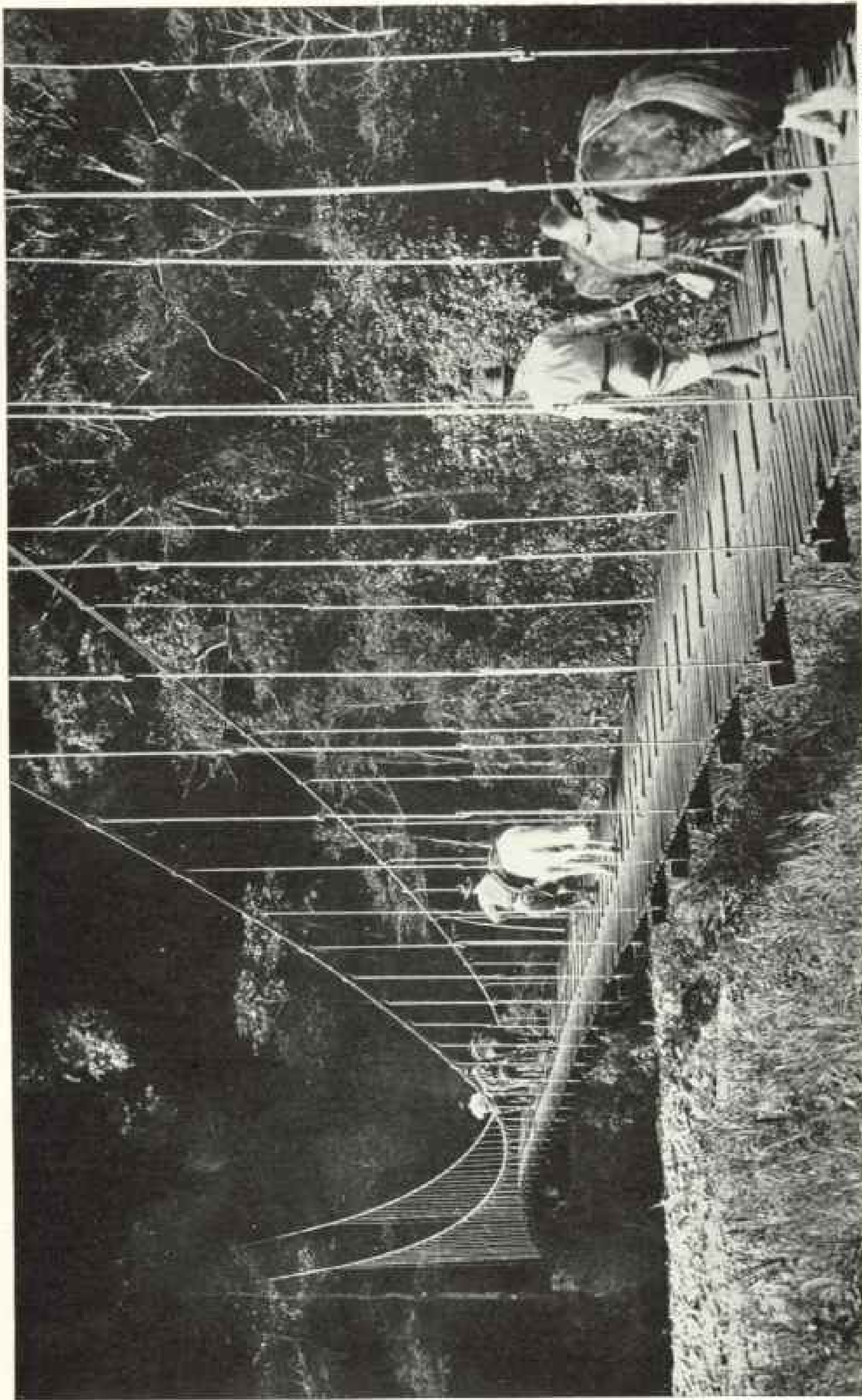
Besides these longer roads, with many bad stretches, shorter pieces of excellent paved highways occur. One 95-mile slab lies between Montevideo and Colonia, in Uruguay.



Photograph from Aerial Explorations, Inc.

A SHEPHERD OF THE HILLS HERDS THIS FLOCK IN PERU'S MOUNTAIN PASSES

His flock lies down beside rushing waters; green pastures are scarce, and the sheep forage through lofty valleys in the shadow of tall trees. Descending the high sierra, these sheep were photographed near Huancayo, at 11,000 feet elevation. Peru's flocks have been improved by highly bred sheep from England, Australia, and Argentina.

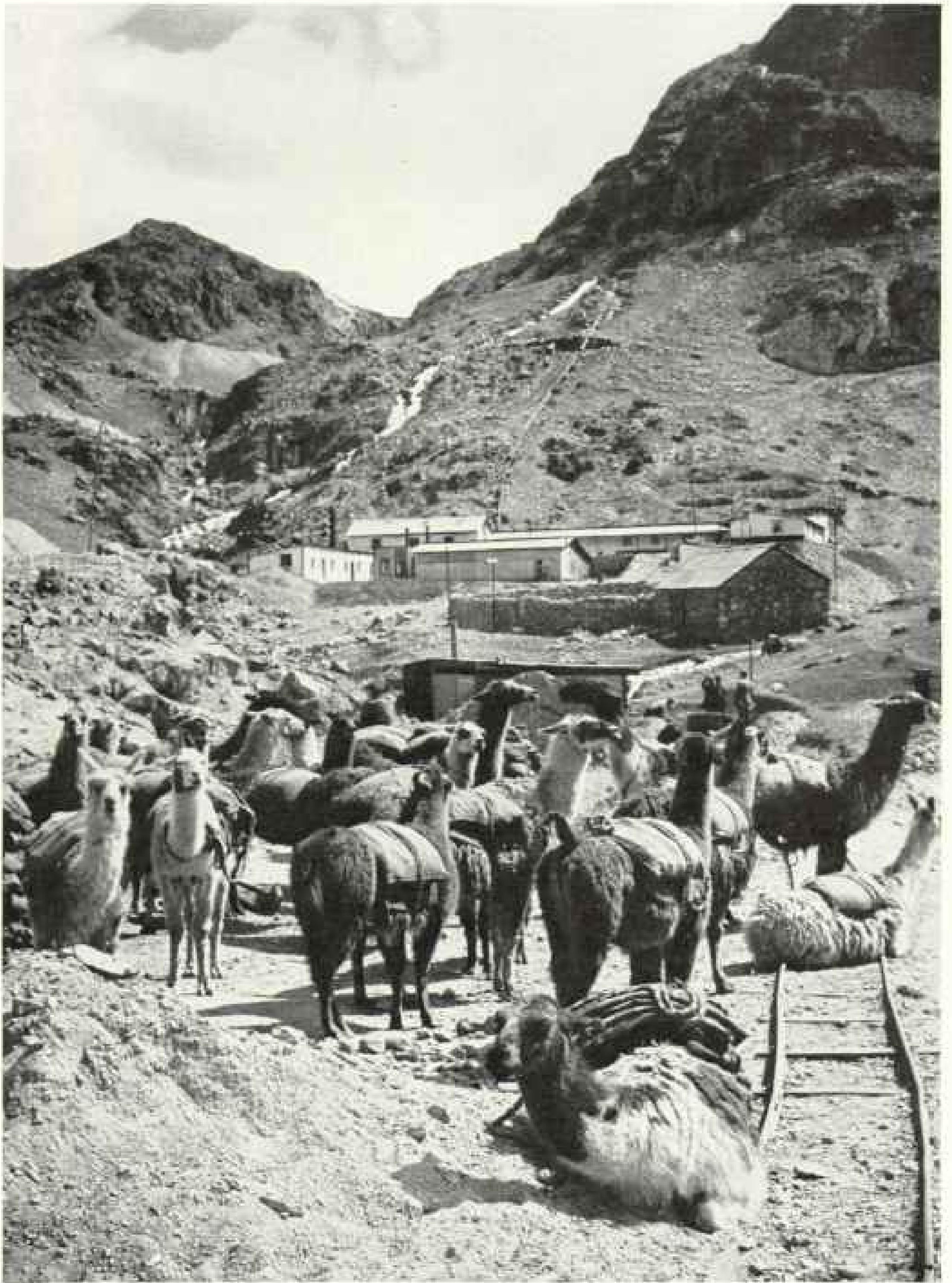


© Ewing Galloway

IT'S SAFER TO LEAD YOUR HORSE ACROSS THIS SWAYING BRIDGE IN PERU

Wheels call for roads, and roads for bridges. In some more wild and remote South American regions pack animals still handle much traffic, over trails impassable for vehicles. This bridge spans a stream on such a trail. Recently Peru has begun extensive road making which will eventually add her link to the inter-American highway system (page 803).





© Publishers Photo Service

SEDATE, NIMBLE-FOOTED, SNEEZING LLAMAS ARE THE CAMELS OF THE ANDES

This group freights in and out of silver mines near Motococha, Peru, a land which has yielded almost fabulous riches in gold and silver. Today Americans and others mine much copper in Peru. Mining was the chief industry under Spanish rule; Spanish conquerors took fortunes in precious metals from the Inca.

On the new map you see how airplane lines now crisscross the southern continent and link it with North America; mail planes also link it with Europe, via Africa.\*

#### AIR LINES LINK TWO AMERICAS

Most important to trade, this swift transport of mail speeds up business letters, expedites the sending of samples and express, and saves bank interest by cutting down the much longer time it once took to transmit banking papers.

Often odd cargoes ride these planes; one carried gold bars, snakes for a zoo, and a profane parrot. In another rode thousands of live chicks in paper coops.

Fresh United States fruits are regularly flown south to Colombia. In Peru air transport of machinery to mines slow of access by mule is common, and ores are brought out the same way.

Transport of the sick and injured to hospitals is frequent, and hardly a plane flies without one or more salesmen aboard. Orchids, toy fish, and botanical specimens, as well as "host" insects used in combating plant pests, are often shipped by air.

Incidentally, the cube root we import from Peru is not the mathematical one, but a poisonous root used, like the deadly timbo root brought from Brazil, in our manufacture of insecticides.

These roots tend now to replace the derris from the Malay States, long the chief source of poison used in our constant war against plant pests.

#### TRADE WITH ALL THE WORLD

Only about a third of this trade is ours. Europe and Japan get their part; and, to a growing extent, the South American countries trade among themselves.

Chile, for example, trades grain and other foods, lumber, and glassware to Peru for raw sugar and oil. Besides such major currents, border barter goes on, as when Ecuador transships soap, cloth, and shoes to southern Colombia, a region not easily reached from her own industrial centers.

In a Rio de Janeiro department store I asked, "How much of what you sell is made in Brazil?"

To my astonishment the manager said,

\* See, in THE NATIONAL GEOGRAPHIC MAGAZINE, "Flying the World's Longest Air-Mail Route," by Junius B. Wood, March, 1930, and "Flying the 'Hump' of the Andes," by Capt. Albert W. Stevens, May, 1931.

"About eighty per cent." That shows how fast some South American lands are getting industrialized. In this store I saw dishes, ready-to-wear clothes, cotton goods, soaps, toys, fine-looking shoes—all made locally.

Years ago we used to ship huge orders of shoes to South America. Later, we began to lease them our shoe-making machinery and teach them how to run it. Now they're making their own—another phenomenon of commercial geography.

Far more than most people realize, citizens of the United States have helped South America to make progress in many directions.

Roaring out of a black, wet squall, we flew suddenly into bright sunshine, and below us glittered a great suspension bridge.

It ties the city of Florianopolis, built on an island, with the mainland of Brazil, and is the longest bridge span in South America.

Built by the American Bridge Company of Pittsburgh, giving months of labor to hundreds of Brazilians at good wages and taking from the States carloads of steel, cable, paint, etc., this structure is only one of many built by United States engineers to speed up travel in South America.

The Yunguita Bridge, which crosses the Suaza River, in Colombia, had to be carried in, a piece at a time, on mule-back. No piece could weigh over 250 pounds—another aspect of problems in foreign trade.

Nearly all these southern countries have had the aid of American agronomists to combat plant pests and improve cultivation. Argentina, to build up its fruit industry, brought in nursery stock and orchard experts from the United States. California's navel oranges, on the other hand, were introduced from the State of Bahia.

Brazil, whose cotton crop is now worth almost as much as her coffee, used American experts to put that crop on a sound basis, and incidentally lured some American millowners to move their operations to that country.

Young men of these southern countries who have been working there for North American firms importing machinery, radios, drugs, etc., not only get useful training in such local plants but are constantly being sent to parent factories in the United States for higher instruction.

Along with these seekers after more practical experience come about 1,000 students a year, entering American universities.

For a long time, at the University of Cali-



Photograph by James C. Sowden

STARTING WITH A HANK OF STRAW, ECUADOR GIRLS CONTRIVE A "PANAMA HAT"

Since remote antiquity widely scattered races have woven garments from grass and fibers. Exquisite hats have long been made in the Philippines; Japanese make a good imitation "Panama" from paper, and most of our "Panamas" are from Ecuador.

fornia Professor Herbert E. Bolton has given his famous courses in the "History of the Americas." In this approach settlement and nation-building in North America by British, French, Dutch, etc., are shown in their proper relation to colonization and nation-building by Spanish and Portuguese pioneers to the south. This viewpoint now finds its way into our public schools, so that "United States History" becomes "American History."

On request, our Navy Department has sent its officers to certain South American countries to aid and instruct them in naval affairs. In the same way, Peru and other Latin-American nations have asked the help of North American financial advisers in problems affecting their monetary and tax systems.

You can't put any money price on the services of the Pan American Sanitary Bureau, or the yellow-fever control work of the Rockefeller Foundation.

But if you ever saw what a pile of dead rats health officials may take from a fumigated ship at the Panama Canal; or if you ever spent a day in the Rockefeller

yellow-fever laboratory at São Salvador (Bahia) and heard the doctors tell how they now control this deadly plague, you would at least get a vague idea of how medical science also figures in trade geography.

Since 1826, when the Panama Congress met at the call of Simón Bolívar, South American liberator, we have held an average of one conference of American states per year (page 296). They talk about trade; also about health, highways, geography, journalism, arbitration of quarrels, education, child welfare—anything from aviation to radio broadcasts.

If South America likes our movies, and if some boom towns down there like to build bungalows and swimming pools à la Hollywood, we also like their dance music, their sopranos and tenors, their tennis and polo players, their Brazil nuts and other exotic foods, and "Panama" hats. And whether we like it or not, we must take their quinine!

To both Americas, thanks to trade, faster ships, aviation, cables, radio, and treaties, comes a closer understanding.

# THE SOCIETY'S MAP OF SOUTH AMERICA

BY GILBERT GROSVENOR

*President, National Geographic Society*

THE continent of South America is less well known, geographically, than any other large inhabited region of the earth. Only about a quarter of its total area has been surveyed, and there are vast expanses which are practically unexplored.

New explorations and surveys are constantly being made: older source material is being superseded. A full year of exhaustive research was devoted to the preparation of The Society's new Map of South America, distributed to members with this issue of their NATIONAL GEOGRAPHIC MAGAZINE. Incorporated upon it are all recent and valid data obtainable up to the very week of going to press.\*

The map is  $26\frac{3}{4} \times 37\frac{1}{2}$  inches in size, and is printed in ten colors. It is drawn to a scale of 1:8,500,000, which is to say that one inch spans 134.2 miles.

The main map on the supplement shows political boundaries of the ten sovereign nations of South America and the three Guiana colonies. It indicates the disputed areas between Ecuador and Peru, and between Bolivia and Paraguay, demarcating the claims of each.

## BRAZIL, TOO, HAS STATES

Moreover, the boundaries of the States, Departments, and Territories, as the various political subdivisions are called, are shown in all countries where they exist as important governmental units. Brazil, for example, is larger than the United States, and it is as important to know the State in addressing mail there, and in locating places, as it is to know the State within our own United States.

Mail directed to "Washington, U. S. A." might go to Georgia, Indiana, Iowa, Kansas, Missouri, North Carolina, Pennsylvania, or the District of Columbia, to mention only a few. A letter addressed to "Santa Cruz, Brazil," might land in any one of seven States or the Federal District; a wire to Boa Vista might go to Rio de Janeiro, Pernambuco, Espirito Santo, Goyaz, Minas Geraes, Paraná, or São Paulo.

\* Members wishing additional copies of the new Map of South America may obtain them by writing the National Geographic Society's Washington, D. C., headquarters, at 50 cents, paper (unfolded); 75 cents, mounted on linen; index, 25 cents.

South America surpasses any other continent in the tremendous extent of its inland waterways. It also is a continent of magnificent distances between its great cities, and mighty mountain barriers impeding overland transport. Therefore, river routes and airplane lines are especially important.

## AIRPLANES SHORTEN ROUTES

A few years ago, before the advent of the airplane, a traveler from Lima, the capital of Peru, to Iquitos, important interior city, found it easier to go by ship through the Panama Canal and up the Amazon, nearly 6,000 miles, rather than follow the direct route of some 1,200 miles by railroad, mule train, and boat, which took him over the mountains and down the Ucayali. Now the trip can be made by train, automobile, and air in three or four days.

On the main map prominent black lines show railways, and anchors mark the limits of important river navigation. In some places the navigability of a river is broken by extensive rapids or falls, such as those on the São Francisco River between Pão de Assucar and Petrolina, or on the Madeira River between Porto Velho and Villa Murinho. Here anchors are placed at each end of the obstruction. Above the upper one, each river is again used between that point and the other heads shown.

On the main map, also, the important steamship lines connecting South American ports with the rest of the world are traced, and the distances between terminal ports are given in nautical miles. The heads of navigation for ocean-going ships are indicated by heavy anchor symbols.

## OCEAN LINERS SAIL A THOUSAND MILES INLAND

One line goes from Liverpool to Manaus, the Brazilian city lying on the Amazon at the sixtieth meridian, nearly a thousand miles from the coast. That city, deep in the interior of Brazil, is due south of Sydney, Nova Scotia. Detroit, Michigan, some 500 miles from the Atlantic coast, is directly north of westernmost South America. Reminders, these, that the two continents might more accurately be named Northwestern America and Southeastern America.

Members will note many new features on

this map. Towns which have sprung up with recent industrial developments, such as Caripito in Venezuela, La Libertad in Ecuador, Bahía Solano in Colombia, Boa Vista (or Fordlandia) in Brazil, and many others appear here. Then there are extensive regions, notably that common to Colombia, Venezuela, and Brazil, where the whole physiography is radically changed in the light of new explorations.

The newly named Cordillera de Agostini, commemorating the work of the famous Italian geographer-missionary, Alberto M. de Agostini, is shown in Patagonia, replacing the old name of Cordillera Patagonica.

#### A NEW PROJECTION USED

For this chart—complete, comprehensive, and up to date—The Society's chief cartographer, Albert H. Bumstead, has designed a new projection upon which the outlines of the continent and the countries appear more nearly as they would on a globe than on any other projection so far devised.

Technical students of map making will be interested to know how this was achieved. The continent, broad in the equatorial region and narrow in the southern portion, was divided into zones running east and west, each having a width of five degrees of latitude. Each zone is given its own two standard meridians, placed to reduce the distortion of that zone to a minimum.

The broadest zones still suffer a distortion at their extremities and centers because their standard meridians are remote from these parts. But the narrower zones have no measurable distortion. Each parallel of latitude is drawn in correct curvature.

The spacing between the parallels and that between the meridians is such as to make all areas on the map in exact proportion to corresponding areas on the ground.

The large inset, scale 1:28,000,000, in the lower right-hand corner of the map shows the major physical features, such as the great mountain ranges and pampas, and nonpolitical regional names.

#### A CONTRAST IN COASTAL WATERS

On this inset also depth contours are shown to indicate the remarkable difference between the Atlantic and Pacific coasts. On the eastern shore the continental shelf extends out hundreds of miles into the sea, while on the west the coastal mountains drop off precipitously into the abyssal depths of the great Pacific crater.

The commercial airways of South America are shown in red lines, and most of the station towns which they serve are included.

Air traffic is being expanded so rapidly and new lines so frequently inaugurated that a map showing them soon becomes out of date. On this map new lines appear, such as those from Valparaiso to Magallanes, from Rio de Janeiro to Asunción and Buenos Aires, from Manaus to Porto Velho and Rio Branco, and from Maracay to Curaçao. However, within a year probably many more will be opened.

On the climate map rainfall regions of 0-10, 10-20, 20-40, 40-80, and 80 or more inches per year are shown in colored areas, while mean annual isotherms of 40, 50, 60, 70, and 80 degrees Fahrenheit indicate the temperature of various parts of the continent. On so small a scale these regions are broadly summarized. In the high mountains the variation in small areas is tremendous.

There are farms in the Andes devoted to such tropical products as sugar cane which contain higher land on which corn, wheat, and potatoes are grown, and still higher land covered with perpetual glaciation. In a single day an Indian with a mule may start out from an hacienda surrounded by orange trees, make the trip to the foot of a glacier, and return with a load of ice.

#### RESOURCES ARE MAPPED

On the resources inset, in the lower left-hand corner, land utilization in South America is indicated in two ways.

First, the great divisions, which are determined by climate, topography, and nature of the soil, are indicated by colored areas. These are divided into the three major classifications of forested lands, grazing lands, and lands of intensive agriculture.

Considerable areas, such as the deserts of Peru and Chile, the high mountains, and the dry Caatingas of Brazil, are tinted yellow, suggestive of the desert sands. They are not at present agriculturally productive.

In these areas the chief products have been written, such as sheep in Patagonia; wheat, corn, and cattle in the pampas; quebracho, mate, and rubber in the forest areas, and coffee on the slopes of Brazil, Colombia, and Venezuela. Only the chief crops of the various regions are shown.

Mining operations are located by the symbols of the various minerals, placed where these products occur.

# NATIONAL GEOGRAPHIC SOCIETY

GEOGRAPHIC ADMINISTRATION BUILDINGS

SIXTEENTH AND M STREETS NORTHWEST, WASHINGTON, D. C.

GILBERT GROSVENOR, President

ROBERT V. FLEMING, Treasurer

HERBERT A. POOLE, Assistant Treasurer

LYMAN J. BRIGGS, Chairman; ALEXANDER WETMORE, Vice Chairman, Committee on Research

JOHN OLIVER LA GORCE, Vice-President

GEORGE W. HUTCHISON, Secretary

THOMAS W. McKNEW, Assistant Secretary

## EXECUTIVE STAFF OF THE NATIONAL GEOGRAPHIC MAGAZINE

**GILBERT GROSVENOR, EDITOR**

**JOHN OLIVER LA GORCE, Associate Editor**

J. R. HILDEBRAND

Assistant Editor

MELVILLE BELL GROSVENOR

Assistant Editor

McFALL KERBEY

Chief of School Service

LEO A. BORAH

Editorial Staff

FREDERICK SIMPICH

Assistant Editor

ALBERT H. BUMSTEAD

Chief Cartographer

E. JOHN LONG

Editorial Staff

FRANKLIN L. FISHER

Chief Illustrations Division

MAYNARD OWEN WILLIAMS

Chief Foreign Editorial Staff

CHARLES MARTIN

Chief Photographic Laboratory

LEONARD C. ROY

Editorial Staff

## BOARD OF TRUSTEES

ROBERT V. FLEMING

President and Chairman of the Board, Riggs National Bank

WALTER S. GIFFORD

President American Telephone and Telegraph Co.

DAVID FAIRCHILD

Special Agricultural Explorer, U. S. Department of Agriculture

C. HART MERRIAM

Member National Academy of Sciences

LYMAN J. BRIGGS

Director National Bureau of Standards

GEORGE R. PUTNAM

Commissioner of Lighthouses, Retired

THEODORE W. NOYES

Editor of The Evening Star

GEORGE W. HUTCHISON

Secretary National Geographic Society

CHARLES EVANS HUGHES

Chief Justice of the United States

WILLIAM V. PRATT

Rear Admiral U. S. Navy, Retired

RAYMOND S. PATTON

Rear Admiral, Director, U. S. Coast and Geodetic Survey

ALEXANDER WETMORE

Assistant Secretary, Smithsonian Institution

GILBERT GROSVENOR

Editor of National Geographic Magazine

J. HOWARD GORE

Prof. Emeritus Mathematics, The George Washington University

ELISHA HANSON

Lawyer and Naturalist

JOHN J. PERSHING

General of the Armies of the United States

GEORGE OTIS SMITH

Formerly Director U. S. Geological Survey

O. H. TITTMANN

Formerly Superintendent U. S. Coast and Geodetic Survey

JOHN OLIVER LA GORCE

Associate Editor of the National Geographic Magazine

CHARLES G. DAWES

Formerly Vice-President of the United States

GEORGE SHIRAS, 3d

Formerly Member U. S. Congress, Faunal Naturalist and Wild-Game Photographer

OSCAR WESTOVER

Major General, Chief, U. S. Army Air Corps

CHARLES F. KETTERING

President, General Motors Research Corporation

## ORGANIZED FOR "THE INCREASE AND DIFFUSION OF GEOGRAPHIC KNOWLEDGE"

To carry out the purposes for which it was founded forty-nine years ago, the National Geographic Society publishes this Magazine monthly. All receipts are invested in The Magazine itself or expended directly to promote geographic knowledge.

Articles and photographs are desired. For material which The Magazine can use, generous remuneration is made. Contributions should be accompanied by addressed return envelope and postage.

Immediately after the terrific eruption of the world's largest crater, Mt. Katmai, in Alaska, a National Geographic Society expedition was sent to make observations of this remarkable phenomenon. Four expeditions have followed and the extraordinary scientific data resulting given to the world. In this vicinity an eighth wonder of the world was discovered and explored—"The Valley of Ten Thousand Smokes," a vast area of steaming, spouting fissures. As a result of The Society's discoveries this area has been created a National Monument by proclamation of the President of the United States.

The Society cooperated with Dr. William Beebe in a deep-sea exploration of undersea life off Bermuda, during which a world record depth of 3,028 feet was attained August 15, 1934, enabling observations of hitherto unknown submarine creatures.

The Society also had the honor of subscribing a substantial sum to the expedition of Admiral Peary, who discovered the North Pole, and contributed \$100,000 to Admiral Byrd's Antarctic Expeditions.

The Society granted \$25,000, and in addition \$75,000 was given by individual members, to the Government when the congressional appropriation for the purpose was insufficient, and the finest of the giant sequoia trees in the Giant Forest of Sequoia National Park of California were thereby saved for the American people.

The Society's notable expeditions to New Mexico have pushed back the historic horizons of the southwestern United States to a period nearly eight centuries before Columbus crossed the Atlantic. By dating the ruins of the vast communal dwellings in that region, The Society's researches have solved secrets that have puzzled historians for three hundred years. The Society is sponsoring an ornithological survey of Venezuela.

On November 11, 1935, in a flight sponsored jointly by the National Geographic Society and the U. S. Army Air Corps, the world's largest balloon, *Explorer II*, ascended to an officially recognized altitude record of 72,395 feet. Capt. Albert W. Stevens and Capt. Orvil A. Anderson took aloft in the gondola nearly a ton of scientific instruments, and obtained results of extraordinary value.



LANGTRY, 17 jewels. 14K yellow gold only. Silk coral and solid gold fittings . . . \$55

CONSTANCE, 17 jewels. 14K gold-filled. Raised numeral dial. With bracelet . . . \$50

CELIA, 17 jewels. 10K gold-filled, white or yellow. With raised numeral dial . . . \$40

CLARISSA, 17 jewels. 10% iridium-platinum case set with 28 fine diamonds . . . \$275

PAULA, 17 jewels. 10K gold-filled case, white or yellow. With silk ribbon . . . \$37.50

WINONA, 17 jewels. 10K gold-filled, white or yellow. Marked numeral dial . . . \$40



FOR A Merry Christmas  
AND AN Accurate New Year

... GIVE A  
HAMILTON



ELLIOTT, 17 jewels. 14K gold-filled case, natural yellow only. Inlaid black enamel numeral dial. \$50

HARRIS, 17 jewels. 10K gold-filled case, natural yellow only. With applied gold numeral dial . . . \$40

CARLISLE, 17 jewels. 14K gold-filled, yellow only. With applied gold numeral dial . . . \$52.50

(Top to bottom)  
SPECIAL LADY'S WATCH, 17 jewels. 10% iridium platinum with 24 diamonds. Bracelet contains 131 diamonds. Price given on request.  
CAMERON, 19 jewel watch. 14K gold . . . \$60  
GOULD, 21 jewel pocket size. 14K gold . . . \$150

When you give a Hamilton, your gift carries the proud conviction there is nothing finer. No Hamilton has fewer than 17 jewels. None is cased in less than precious metal. \$37.50 to \$5000. Write for folder. Hamilton Watch Co., 882 Columbia Ave., Lancaster, Pennsylvania.

"Mention the Geographic—It identifies you."



Put this Pedigreed Beauty  
on Your "Must" List



New Jewel Case  
Included with Pen  
and Pencil Sets at  
\$12.50 and \$13.

# The Gift that Your Loved Ones will Carry *Over their Hearts!*



**KLOCK-8**—8-Day Desk Clock on wood base, complete with Vacuumatic Desk Pen and Pencil—\$20

**LAMPDOM**—Moderne metal Desk Lamp, wood base, complete with Vacuumatic Desk Pen and Pencil—\$25

**BB CLASSIC**—Black Glass Base complete with Vacuumatic Desk Pen and Pencil—\$22

## Parker's de luxe Major and Maxima Vacuumatic ... First Christmas Ever Shown

*The revolutionary Pen that gives people Second Sight—that shows when to refill, hence writes years on end without running dry unexpectedly.*

If you want the ones whom you adore to be enraptured 100% with your Christmas Gift, put this millionaire's Pen on your "must" list. They'll carry it over their hearts for life!

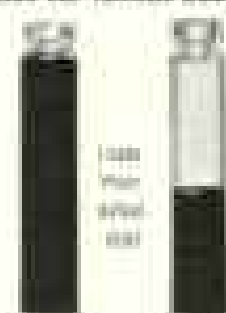
Go to any good pen counter today and see Parker's two new de luxe editions—the Major and Maxima Vacuumatics—in smartly laminated Pearl style with double ink capacity and Television barrel, now gracefully slenderized for restful balance.

And see the stunning new Parker Vacuumatic Desk Sets,—and the new Pen and Pencil Sets in regal Gift Box illustrated.

The Parker Vacuumatic is a marvelous invention that eliminates the old-time rubber ink sac and piston pump, and thus has room for 102% more ink than our famous Duofold. Hence this modern marvel requires filling only 3 or 4 times from one Christmas to the next.

See this Pedigreed Beauty today. And look for the smart ARROW clip. This identifies the genuine Parker Vacuumatic and saves time in making gift selections. The Parker Pen Company, Janesville, Wisconsin.

Holds 102% More Ink than our famous Duofold



**Parker**

**VACUMATIC**

GUARANTEED MECHANICALLY PERFECT

Junior or Junorette, \$5 • Standard or Slender Standard, \$7.50  
Major, \$8.75 • Maxima or Senior Maxima, \$10  
Pencils to match, \$2.50, \$3.50, \$3.75, \$5

**\$7.50**  
**\$8.75**  
**\$10**

"Mention the Geographic—It identifies you."



# Things You'll See in the New Plymouth

LOOK! EXCITING STYLE... NEW LUXURY AND EASE OF HANDLING, WITH NEW COMFORT, NEW SAFETY! CLIMAXES 10 YEARS OF BUILDING GREAT CARS!

## HISTORY-MAKING CAR

The new 1938 Plymouth celebrates 10 years of building great cars!

Plymouth started in '28, a newcomer. Today, Plymouth owners number millions! Because Plymouth offers more value.

The 1938 Plymouth is the biggest, finest Plymouth ever built. Go see it!



**PRICED WITH THE LOWEST**—The Commercial Credit Company offers very convenient terms on a new Plymouth, through Dodge, De Soto and Chrysler dealers. Remember to tune in Major Bowes' Original Amateur Hour... Columbia Network, Thurs., 9 to 10 P. M., E. S. T.

**1** Thrilling New Style. And under that long hood is an 82-horsepower engine with improved Floating Power engine mountings!



**2** Under the Child's Hands is a new instrument panel... "Safety Styled"—for greater protection!



**3** What Luggage Space! Bigger than ever. And there's even a light for the inside!



**4** A Steel House! Plymouth's body is all steel... welded into one unit!



**5** This "Gasometer" shows Plymouth's amazing economy. Ask a dealer about it.



**6** The 1938 Plymouth—the only low-priced car with scientific sound-proofing, double-action hydraulic brakes, rubber body mountings. See it! PLYMOUTH DIVISION OF CHRYSLER CORPORATION, Detroit, Mich.

PLYMOUTH BUILDS GREAT CARS

# See the 1938 Plymouth

"Mention the Geographic—It identifies you."

SCIENCE



THE "BATHTUB" is the General Motors proving ground — only one among scores of tests used to check engineering features on new cars.



**UNISTEEL BODY**

— fused solidly together, top, bottom and sides — providing safety with style which glorifies steel construction

**KNEE-ACTION**

— the true gliding ride — makes every mile you travel more comfortable and assures better control of steering in emergency

**HYDRAULIC BRAKES**

— improved in design to match the flashing performance of the new cars with the safety of smooth and powerfully sure straight-line stops

**O**UT on the General Motors proving ground — in the research laboratories — along the assembly line — men are busy working to the same broad purpose. Their steady aim is to give the public *extra value*. The benefits of these activities are clearly shown in what you



# GENERAL MOTORS M

CHEVROLET • PONTIAC • OLDSMOB



SKILL

**TURRET TOP**

*—puts the safety of solid steel over your head in every closed car of the General Motors family*

**NO DRAFT VENTILATION**

*—keeps the air you breathe healthfully free from drafts and makes driving safer by keeping the inside of the windshield and windows fog-free*

**STREAMLINE STYLING**

*—matched to the popular taste, and approved by millions of car-owners as the expression of modern beauty of design*

**AN ARMY OF EXPERTS** mans every General Motors plant—specialists who insure the value of the whole by building worth into each part.



get for what you pay when you buy any car in the GM family. How well these cars serve human needs —for more comfort—more safety—better performance— is known by millions of car-owners. The next time *you* buy a car, remember—General Motors means Good Measure.

# MEANS GOOD MEASURE

ILE • BUICK • LA SALLE • CADILLAC

# WHICH Southern California DO YOU MEAN?

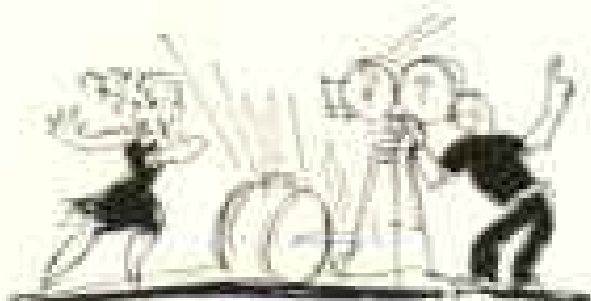


YOU'LL never be able to describe Southern California the same way two days in a row, because every time you take another look it's a different place!

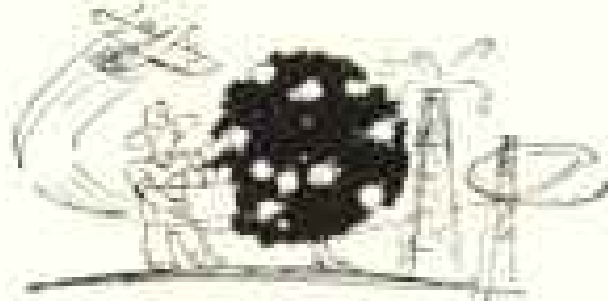
Today you're "lost" in the purple dust of a mysterious desert, or playing on a tropic island; tomorrow it's Santa Anita giving you high blood pressure. Next day you lunch in a cafe next to a Dietrich, or a Crosby. So tomorrow you hardly expect a land of oil wells, orange groves and ships of the seven seas; nor are you prepared to find the No. 1 U. S. airplane manufacturing center right under your sun-tanned nose. And if you don't look out you'll miss Cal Tech

where the cosmic ray got its start, or a chance to see the broadcast of a coast-to-coast radio show in Hollywood, or—Well, you get the idea! Come out and see not *one* but a *hundred* Southern Californias!

Los Angeles County and its neighbors are full of fascinating resort cities like Los Angeles, Pasadena, Long Beach, Glendale, Beverly Hills, Santa Monica, Pomona...scores of others. And all this fun, even from New York is just overnight by plane; 2½ to 3 days by train, 5 to 7 by auto or bus; 2 weeks by ship via Panama. Vacation costs here average 22.8% under those of 20 other leading U. S. resorts.



TODAY: We watched a movie company "on location" and ate our lunch in a pepper grove.



TODAY: We saw them drill for oil, pick oranges, test a bomber and stage a swimming meet.



TODAY: We played golf in shorts, dined in a famous artist colony, saw lights of 55 cities.

## FREE: Automatic Trip Planner

This 80-page Official Guide Book—widely acclaimed by travel experts—plans your trip for you from start to finish: what to see and do, how to get here, time required, itemized cost schedules, plus over 100 photographs, maps, etc....authentic facts available only through this non-profit community organization. Coupon brings it FREE by return mail.

When you arrive be sure to visit our new Official Information Bureau, 505 West 6th St., Los Angeles, for expert help in getting the most enjoyment out of your stay here. FREE, of course.

**ALL-YEAR CLUB OF SOUTHERN CALIFORNIA**

## MAIL COUPON TODAY

All-Year Club of Southern California,  
Dept. 12-H, 629 So. Hill St., Los Angeles, Calif.

Send me free book with complete details (including cost) of a Southern California vacation. Also send free routing by  auto,  rail,  plane,  bus,  steamship. Also send free booklets about counties checked:  Los Angeles,  Orange,  Riverside,  Santa Barbara,  Inyo,  San Diego,  Imperial,  San Bernardino,  Ventura,  Kern.

Name \_\_\_\_\_  
Street \_\_\_\_\_  
City \_\_\_\_\_  
State \_\_\_\_\_

(Please print name and address)

Come to California for a glorious vacation. Advise anyone not to come seeking employment, lest he be disappointed; but for tourists, the attractions are unlimited.

# A Gift that Increases in Value

## A Gift for Today and Tomorrow

For anyone whose future is your immediate interest, United States Savings Bonds are appropriate reminders for every gift occasion.

Savings Bonds make distinctly personal gifts, for they are registered on the books of the United States Treasury in the name of the person for whom you purchase them.

The person in whose name a Savings Bond is registered may hold the bond for ten years and receive in cash its full maturity value, which is 33 1/3% more than its purchase price, or the owner may redeem it at any time after sixty days from its issue date.

Savings Bonds may be purchased at post offices or direct by mail from the Treasurer of the United States or any Federal Reserve Bank.

### SEND THIS COUPON WHEN ORDERING BONDS FOR GIFTS

PERSONS OF THE UNITED STATES, TERR. AND POSSESSIONS, D. C.  
Please issue the following bonds for which I enclose check, draft or money order.

..... \$25 U. S. Savings Bonds at \$18.75 \$.....  
 ..... \$50 U. S. Savings Bonds at \$37.50 \$.....  
 ..... \$100 U. S. Savings Bonds at \$75.00 \$.....  
 ..... \$500 U. S. Savings Bonds at \$375.00 \$.....  
 ..... \$1000 U. S. Savings Bonds at \$750.00 \$.....  
 Total \$.....

It is understood that not more than \$10,000 (Maturity Value) of these bonds issued during each of any calendar year (January 1 to December 31) may be held by any one person.

Register on the name of: { Name \_\_\_\_\_ Miss Mrs. Mr.  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_

Purchaser's name and address where bonds are to be sent: { Name \_\_\_\_\_ Miss Mrs. Mr.  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_

Make all remittances payable to Treasurer of the United States. For instant delivery before Christmas, mail orders should be received any later than December 15.

Savings Bonds may be purchased at Post Offices at any time.



# A Practical Way to Establish Financial Independence

By saving systematically and buying United States Savings Bonds at regular intervals, thousands of investors are providing specific funds for future use. Each \$75 invested in these bonds today becomes \$100 in ten years. More than a million persons have invested approximately a billion dollars in these securities.

Your investment in Savings Bonds cannot shrink in dollar value. The cash surrender value is never less than the purchase price and increases at the end of the first year and each six months thereafter to maturity.

In ordering these bonds by mail your check will be accepted subject to collection. A Savings Bond may be issued in the names of two individuals and is redeemable by either.

### SEND THIS COUPON WHEN BUYING BONDS IN YOUR OWN NAME

PERSONS OF THE UNITED STATES, TERR. AND POSSESSIONS, D. C.  
 Please send me, without obligation, your Regular Purchase Plan and form for my consideration and optional use.

Send me the following bonds for which I enclose check, draft or money order.

..... \$25 U. S. Savings Bonds at \$18.75 \$.....  
 ..... \$50 U. S. Savings Bonds at \$37.50 \$.....  
 ..... \$100 U. S. Savings Bonds at \$75.00 \$.....  
 ..... \$500 U. S. Savings Bonds at \$375.00 \$.....  
 ..... \$1000 U. S. Savings Bonds at \$750.00 \$.....  
 Total \$.....

It is understood that not more than \$10,000 (Maturity Value) of these bonds issued during each of any calendar year (January 1 to December 31) may be held by any one person.

Register in the name of: { Miss \_\_\_\_\_  
 Mrs. \_\_\_\_\_  
 Mr. \_\_\_\_\_ (If for a firm or corporation, state whether incorporated or unincorporated)  
 and send to: { Street Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_

Make all remittances payable to Treasurer of the United States.



## Bread, Butter, and Jam for 13,000,000 People

**A**RE you one of these 13,000,000 people? Does the income which supports you come from making or selling automobiles, radios, electric refrigerators, or movie films? If so, you are one of them. You are one if that income comes from the rayon or aluminum industry, or any of the other industries which have grown up in a single generation.

Automobiles, radios, gasoline, aluminum—these and many other products exist today because industry sought new products and better ways of building old ones. And after unearthing these

new products, industry developed them, found ways to build them better, means to sell them at lower prices.

Today, these industries not only employ millions but—through demands for steel, coal, cotton, transportation—they help support millions more.

Some of the greatest advances in this work have been made through the use of electricity. Through it new products have been developed, and the efficiency of all industries has been increased. In most of these modern electrical developments, General Electric research and engineering have pioneered.

*G-E research has saved the public from ten to one hundred dollars for every dollar it has earned for General Electric*

**GENERAL**  **ELECTRIC**

90-8E

LISTEN TO THE G-E HOUR OF CHARM, MONDAYS, 9:30 P.M., E.S.T., NBC RED NETWORK

"Mention the Geographic—It identifies you."



**That's why the new DYNAFLASH ENGINE, and TORQUE-FREE SPRINGING, make the 1938 Buick chassis the Most Modern in the World**

It's literal fact that you ride the whirlwind when your foot is on the treadle that bosses the new Buick DYNAFLASH engine.

Every five inches this thrilling car travels a fist-size hurricane lets go in a cylinder head, lending tornadic force to the downward power-push of the piston.

It is not mere high-compression — it is *cyclompression*. For a specially patterned Turbulator, built into the face of the piston, churns each fuel charge into a whirling cyclone.

And the turbulence that results means you get more good from gasoline!

Slip into the driver's seat and sample for yourself the inspired engineering that sets the 1938 Buick head and shoulders above the field.

Measure the astounding *performance* of it, the *ride* that matches its astonishing stride.

That level, floating, jarless going is given you by Buick's new TORQUE-FREE SPRINGING, which, adding new safety to new comfort, also lengthens rear tire life and blessedly reduces skidding.

Not one but *both* of the standout engineering features of 1938 are yours in the new Buick—which tells you how to make your every new-car dollar do its full duty next year!



**"Better buy Buick!"**

A GENERAL  MOTORS VALUE

"Mention the Geographic—It identifies you."

YOURS IS THE POWER TO COMMAND  
*the world's finest music* WHENEVER YOU WISH



*Capehart*

### THE CHIPPENDALE

*Combination Phonograph and Radio, completely automatic. Handles three to twenty records, up to 10 selections, of both 10-inch and 12-inch sizes intermixed. Plays both sides of each record in sequence, one side only, or repeats any record as desired. Reproduces entire symphonies, operas and album sets of recordings in their correct sequence. Twenty-three tube custom-built Capehart radio in combination. The CHIPPENDALE, illustrated here, is but one of the beautiful and authentic cabinet stylings available.*

THERE is magic in the power of good music to contribute to the happiness of living. The right music, chosen to satisfy your mood, will entertain you, refresh you, lift you up . . . will soothe, exalt, inspire . . .

Likewise, good music, properly selected for the occasion, is invaluable in entertaining guests, adding immeasurably to the charm of your home.

But music to be effective for occasion or mood, is dependent upon availability—you must be able to get the music you want when you want it.

The Capehart, the modern fully automatic phonograph, with radio in combination, gives you the power to command instantly anything you want anytime, from the entire world of music. You can recapture, whenever you will, the indescribable beauties of the classic masterpieces by the great artists of the past. Likewise, you can enjoy over and over again the current music most appealing to you.

The Capehart is world renowned as the

"finest musical instrument of its kind" because of its fidelity in reproducing both recorded music and broadcasts with incomparable beauty of tone, and also because of the superiority of its automatic features.

It is the only fully automatic phonograph-radio with the exclusive Capehart record changer, which plays both sides of each record in succession, reproducing complete operas, symphonies and album sets of music in their correct sequence. In fine homes everywhere, from the modest to the pretentious, where culture and high standards of excellence dictate the purchase of the best, Capehart is considered the indispensable musical instrument.

With a Capehart, you, too, will thrill to the new power that is yours in satisfying your musical needs and desires, no matter how varied they may be. Not until you see and hear the Capehart will you fully appreciate the wealth of musical satisfaction that this instrument will bring to you. Illustrated brochure and your dealer's name on request. The Capehart, Incorporated, Fort Wayne, Ind.

**THE FINEST IN MUSIC PLUS RADIO ENTERTAINMENT**

"Mention the Geographic—It identifies you."



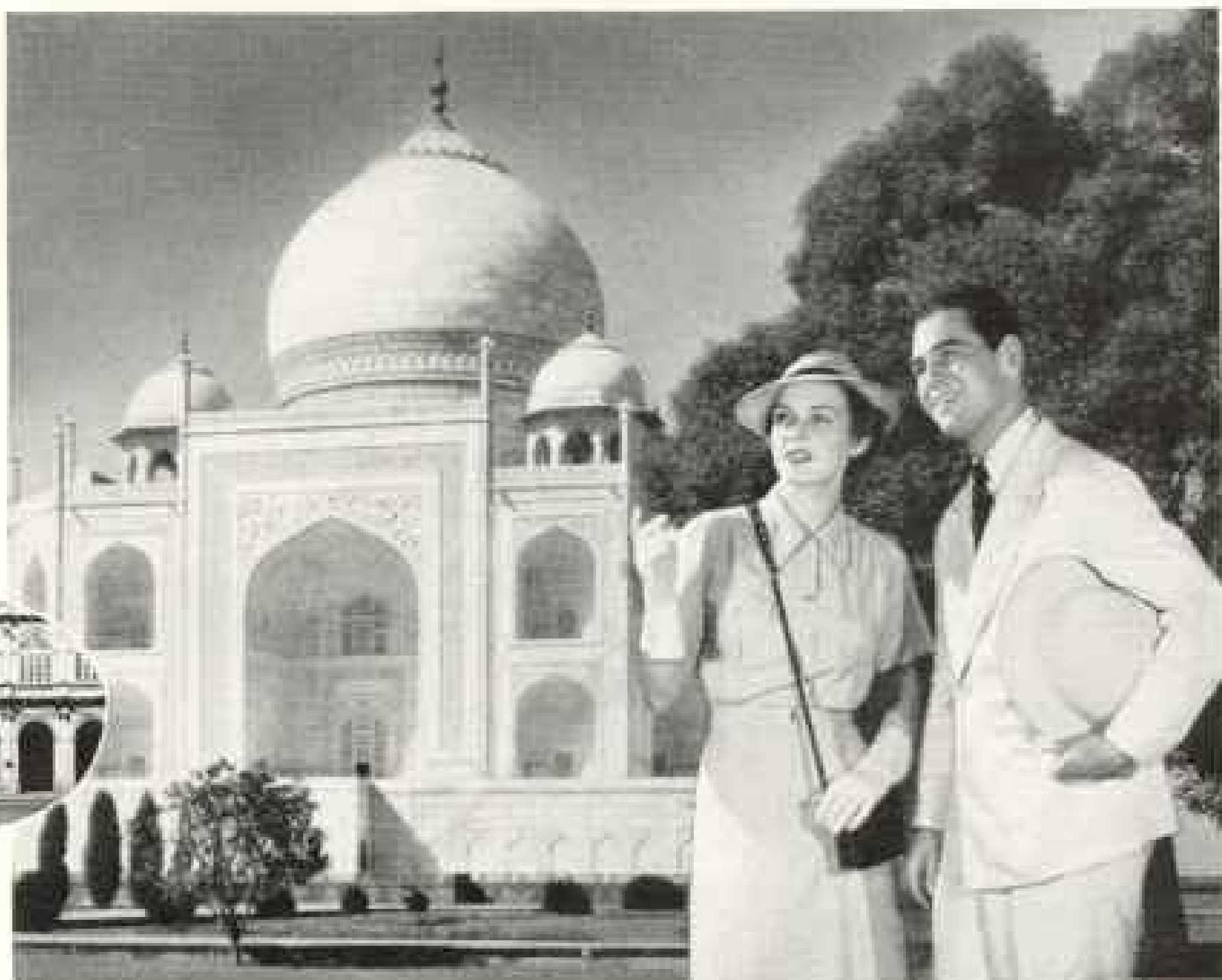


Wherever you go!

WORLD-WIDE  
AMERICAN EXPRESS TRAVEL SERVICE  
SMOOTHS YOUR WAY...



The office of American Express Travel Service in distant Bombay...



London...Paris...Rio de Janeiro...Bombay...wherever you wish to go, the great authority on travel, the American Express Travel Service, with a brilliant international prestige in the world of travel and finance, offers you carefree, effortless travel... *planned in advance*. No last minute disappointments due to over-flowing trains or hotels... no "slip-ups" in sightseeing arrangements to mar your pleasure, because American Express Travel Service plans an itinerary with you point-by-point according to your own ideas. All transportation by land, by sea, by air... hotel accommodations... sightseeing... Travelers Cheques to safeguard your funds... all are arranged for you *before you start your trip!*

Abroad, experienced English-speaking interpreters assist you at principal frontiers, piers, depots... help to make your journey even more pleasant. And in most of the countries of the world, you'll find that welcome sign: "American Express Travel Service"... your *personal* headquarters while you travel, where you may receive your mail, do your banking, and meet your

friends in an atmosphere that is cordially American.

Wherever you go, you'll find that the experience and efficiency of American Express Travel Service smooths the way... leaving you free to enjoy your travels... completely! A visit, telephone call, or letter to your local office will bring you the advantage of unbiased and accurate travel advice and assistance.

Offices in Atlanta, Baltimore, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Dallas, Denver, Detroit, Kansas City, Los Angeles, Miami, Milwaukee, Minneapolis, Montreal, Newark, New Orleans, New York, Philadelphia, Pittsburgh, Portland, St. Louis, Salt Lake City, San Francisco, Seattle, Toronto and Washington and in principal cities throughout the world.

Ask your own Travel Agent for American Express Travel Service

**AMERICAN EXPRESS**

*America's Foremost Travel Organization*

AMERICAN EXPRESS TRAVELERS CHEQUES ALWAYS PROTECT YOUR FUNDS

"Mention the Geographic—It identifies you."

"Even the simplest tune can be played a hundred different ways!"



Mr. E. L. Davis, 1841 Mountain Rd., Milwaukee, had played only the piano before he acquired his Hammond Organ. But he writes, "Within a short time I was playing music very much richer and more colorful than I ever had before!"

"I WAS by no means an expert pianist," writes Mr. Davis, "so I was delighted by the interesting musical experience the Hammond brought me. I never grow tired of experimenting with its varied tone colors. Why, even the simplest tune can be played a hundred different ways!"

The dream you've always cherished, that some day you yourself might play really lovely music—it can come true with the new Hammond Organ!

If you have even a little knowledge of the piano keyboard, you can easily pick up the Hammond's simple technique. You'll find it's like conducting a superbly trained orchestra . . . countless lovely instrumental voices are at your bidding, ready to give ever-varied interpretations to your melodies.

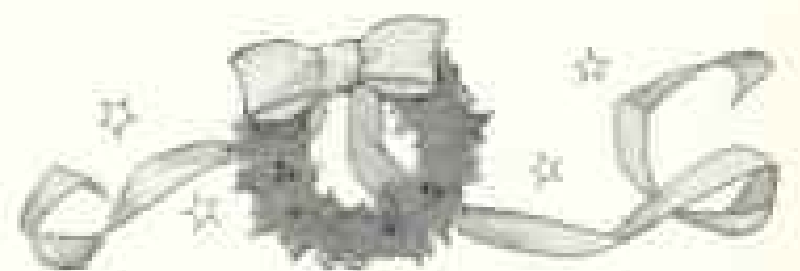


The Hammond has received an ovation from the world of music. It is used with a number of symphonies . . . is played in over 1,000 churches. Yet it is an instrument completely practical for your home—easier to move and no more expensive than a fine piano!

#### A CONCERT ORGAN THAT FITS IN A FOUR-FOOT SQUARE

Designed on an absolutely new principle, the Hammond creates the familiar organ voices—strings, diapasons, woodwinds—and an almost infinite number of new tone colors, all by electric impulses. With no pipes whatever, its console is small and graceful as a spinet desk. Easily moved and installed, the Hammond is ready to play wherever there is an ordinary electric outlet. It positively cannot get out of tune!

Your leading musical merchant is probably a Hammond dealer. Go to him, as soon as you can, and hear your favorite melodies interpreted by the Hammond! Or for an interesting brochure giving full information, write to The Hammond Organ, 2959 N. Western Ave., Chicago. In Canada address Northern Electric Co., Ltd., Montreal.



For your entire family there could be no more lastingly treasured gift than a Hammond Organ

THE HAMMOND ORGAN \$1250 and up f.o.b. Chicago—slightly higher for large installations

THE HAMMOND IS THE LARGEST SELLING ORGAN IN THE WORLD

# "By the mark, ten... the deep, twelve..."



**Cunard White Star**

**sounds the seven seas for your  
pleasure travel**

Off Tourane or Rio or Cherbourg you'll hear the leadsman's cry... "By the mark, ten", as his first cast reaches the 10-fathom leather marker... "the deep, twelve", as the next try shows a depth between markers. Symbolic soundings! They plumb beneath the pleasure world which Cunard White Star has built through nearly a century. They show you its solid foundation... British seamanship, backed by its ultimate safeguard, human vigilance. Book Cunard White Star wherever you go... through your local agent or Cunard White Star Line, 25 Broadway and 638 Fifth Ave., N. Y.

*Brilliance...* **FOR YOUR WINTER CRUISING**  
**THE AQUITANIA to RIO**

The ship people speak of as a person—proud, beloved, with a devoted staff. And a spectacular route that includes not only Bahia and more than four days in Rio de Janeiro, but the whole rich variety of the Caribbean! From fashionable Nassau to motley Trinidad, from pastoral Bermuda to tropical Barbados, from the man-made wonder of the Panama Canal to Nature's majesty in the Venezuelan Andes!

NASSAU COLON LA GUAIRA TRINIDAD BAHIA  
 RIO DE JANEIRO BARBADOS BERMUDA  
 FROM NEW YORK FEB. 17 . . . 33 DAYS . . . RATES FROM \$415

**SAILINGS TO EUROPE**

*By the largest fleet on the Atlantic*

Enjoy the splendor of this season in Europe... theatres, cabarets, opera in full glory... Paris Exposition, too! Sail from New York any Wednesday in the world's newest liner Queen Mary, fastest direct to France... or in the Aquitania, Berengaria, among the world's largest ships... calling first at Cherbourg, then Southampton. Or choose from 15 famous 'leisure liners' to Britain and the Continent. Low round trip fares start at

**\$275 Cabin Class**

**\$224 Tourist Class, \$167 Third Class**

**TO THE WEST INDIES**

*A great program of Sunshine Cruises*

From N.Y.	Ship	Days	Min. Rate
Dec. 23	Georgic	10	\$130.00
Dec. 28	Berengaria	5	80.00
Jan. 7	Georgic	6	80.00
Jan. 13	Georgic	8	105.00
Jan. 21	Britannic	12	157.50
Jan. 26	Georgic	18	225.00
Feb. 5	Britannic	18	225.00
Feb. 16	Georgic	18	225.00
Feb. 26	Britannic	18	225.00
Mar. 4	Georgic	14	180.00
Mar. 19	Britannic	12	157.50
Apr. 2	Britannic	8	105.00

6-day Corinthia Cruises to Nassau every Saturday, Jan. 29 through Mar. 26... \$75 up, one way  
 \$65 up, round trip with stop-over \$95 up.

**AROUND THE WORLD**

*31 Ports . . . 146 days . . . \$1900 up*

A wondrous new itinerary featuring not only the first world-cruise excursion to Hue, fabulous capital of Annam... but two other brilliant 'first-time' calls: Amboina in the Moluccas, Hobart in Tasmania! From New York January 6. The rate includes a complete shore program.

*The New Franconia Itinerary:*

Trinidad	Ceylon	Ambona
Bahia	Penang	New Guinea
Rio de Janeiro	Singapore	Australia
St. Helena	Siam	Tasmania
Cape Town	French	New Zealand
Port Elizabeth	Indo-China	Fiji Islands
Durban	Philippines	Hawaii
Madagascar	Java	California
Seychelles	Bali	Panama Canal
India	Kalshahai	



**THE BRITISH TRADITION DISTINGUISHES CUNARD WHITE STAR**



# FLASH FROM NORTH POLE..

"MY 1937 GIFT SUGGESTION--  
TAYLOR THERMOMETERS AND WEATHER  
INSTRUMENTS"--SAINT NICHOLAS

*Gifts that grow in value as the days go by*

<p><b>1</b> Taylor Window Thermometer—at retail \$2.50*</p> <p><b>2</b> Taylor Fairmont Combination—Thermometer, Stormguide and Humidigide combination—at retail \$20.00*</p> <p><b>3</b> Taylor Fairfax Stormguide—at retail \$12.00*</p> <p><b>4</b> Taylor Indoor Thermometer—5109—at retail \$2.00*</p>	<p><b>5</b> Taylor Brentford Pendolot Stormguide—at retail \$16.50*</p> <p><b>6</b> Taylor Yacht Stormguide—at retail \$10.00*</p> <p><b>7</b> Taylor Belmont Humidigide—at retail \$5.00*</p> <p><b>8</b> Taylor Luminette Compass—at retail \$5.00*</p> <p><b>9</b> Taylor Auto-Altimeter, 5000 ft. range—at retail \$25.00*</p>
---	--

\*Price slightly higher west of the Rockies and in Canada.

**T**AYLOR INSTRUMENTS are gifts whose value will last as long as the weather. Scientists, explorers, weather bureaus, and weather hobbyists—everyone can rely on them. Shown here are a few of many that bear the Taylor name and Taylor's Five-Year Guarantee of Accuracy. If your department, optical or hardware store can't supply you, write direct to Taylor Instrument Companies, Rochester, N. Y. Plant also in Toronto, Canada.

## Taylor

### INSTRUMENTS

IN INDUSTRY, OTHER TYPES FOR INDICATING, RECORDING AND CONTROLLING TEMPERATURE, PRESSURE AND HUMIDITY

"Mention the Geographic—It identifies you."



## Picture Their Happiness with a **GRAFLEX**

If you want a picture of real Christmas happiness, give a Graflex! Here is a gift that will not only *portray* but *give* happiness for years to come—a gift that will be a constant reminder of your thoughtfulness and good judgment.

With Graflex American-made, precision-built photographic equipment, picture-making is exact and certain even under adverse conditions. For those who want to make better pictures, there are no finer gifts than Graflex Prize-Winning Cameras and Accessories. Your dealer will gladly help you with your selection.

### FREE!

Send for free Graflex Catalog and free Graflex Annual Gift Guide. Paste coupon on penny postcard, if you wish. Fulmer Graflex Corporation, Dept. G-17, Rochester, N.Y., U.S.A.



#### FOLMER GRAFLEX CORPORATION

DEPT. G-17, ROCHESTER, N. Y., U. S. A.  
Please send me free Catalog describing Graflex and Speed Graphic American-made Prize-Winning Cameras and Accessories. Also send your free Graflex Annual Gift Guide.

NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_



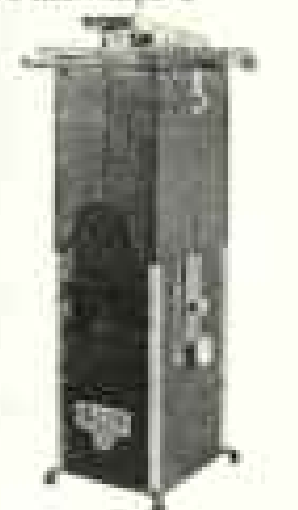
#### National Graflex

World's finest miniature reflex camera! F3.5 lens; 8 speeds; sees 2 1/2" x 2 1/2" pictures from 8-exposure film.



#### New Speed Graphic

—with Revolving Back, in size 2 1/2" x 3 1/2". With coupled rangefinder and photoflash synchronizer, it's the "snaps".



#### Enlarge-or-Printer

Enlarge, contact print and retouching desk all in one—almost a complete darkroom in itself.



#### "Photographic Enlarging"

By Franklin J. Jordan, F.R.P.S.; 224 pages; 75 illustrations. \$3.50 separately, or FREE with each Enlarge-or-Printer.

# GRAFLEX

PRIZE-WINNING CAMERAS

**PATEK PHILIPPE**

THE MOST EXCLUSIVE WATCH.  
SOLD BY LEADING JEWELLERS  
THROUGHOUT THE WORLD.  
ESTABLISHED 1839

**THE Perfect GIFT...  
SOLVES THE XMAS PROBLEM  
FOR PICTURE  
TAKERS**

If he owns a camera, your gift problem is easy. Give him a **WESTON Exposure Meter**... the device that makes picture taking simple and sure. Pointed at the subject, the **WESTON** gives correct camera settings... assuring sharp, correctly-exposed pictures every time. Used indoors or out, with any still or movie camera, and any film. See it at dealers, or return coupon for literature.

## WESTON Exposure Meter

Weston Electrical Instrument Corporation  
584 Frelinghuysen Ave., Newark, N. J.  
Send literature on **WESTON Exposure Meter**.

Name.....  
Address.....  
City..... State.....



**MOBILOIL ARCTIC** makes all cars  
start Easy..run Sweet\_in Frigid Weather

# CHANGE

# TODAY



**WINTER-PROOF YOUR CAR  
AT YOUR MOBILOIL DEALER**

**START QUICK** with Mobiloil Arctic — world's favorite winter motor oil.

**SHIFT EASY** on coldest days with Mobiloil Gear Oil.

**RIDE QUIET.** Special Winter Mobilgreases end squeaks.

**PREVENT FREEZE-UPS** with Mobil Freezezone — great, new radiator anti-freeze.



**"BETTER ONE WEEK EARLY THAN ONE DAY LATE!"**

**THE PICTURE** above is a warning to you! **COLD SNAPS COME SUDDENLY... IT PAYS TO HAVE YOUR ENGINE READY WITH MOBILOIL ARCTIC!**

Mobiloil Arctic is absolutely the finest winter oil for quick starting. It flows freely in a split second, yet protects your engine fully when it's running hot!

That's what you want this winter, isn't it? ...quick starts—and a safe engine. Take a few minutes today—stop at your Mobiloil Dealer's—and change to Mobiloil Arctic, world's largest-selling winter oil.

**MOBILOIL AND MOBILGAS**

**SOCONY-VACUUM OIL COMPANY, INC.**



# explore

THIS WINTER THE FASCINATING  
SPANISH-INDIAN SOUTHWEST



## Indian- detours

### BY-THE-WAY TO CALIFORNIA

- Turn aside, on your California trip this winter, for the memorable experience of a 1-to-3 day *Indian-detour*, by motor, through the unspoiled Spanish-Indian country centered by Old Santa Fé, N.M.
- You will enjoy the sparkling climate, the intimate browsing about through inhabited Indian pueblos, pre-historic cliff dwellings, isolated Spanish-American mountain villages and time-worn, picturesque mission churches.
- You will enjoy, too, the pleasantly informative guidance of cultured young women couriers—and the informal comfort of your headquarters in Fred Harvey's beautiful La Fonda Hotel, in Old Santa Fé.

With rail fares near an all-time low this winter, Santa Fe's fleet of fine fast trains offers new comforts, convenience and variety of service to California, Old Santa Fé, Grand Canyon, Phoenix and Palm Springs. • *Let our representatives work with you in developing your winter trip plans.*

T. B. Gallaber, P. T. M., Santa Fe System Lines  
1107 Railway Exchange, Chicago, Ill.  
Mail *Indian-detours* picture folder, and fares

from \_\_\_\_\_ to \_\_\_\_\_  
Name \_\_\_\_\_  
Address \_\_\_\_\_

# SAN DIEGO

*City of Contrasts*



Big boats and little ones, graceful palms and stately pines, old missions and modern homes, warm winters and cool summers... make **San Diego** a city of pleasant contrasts that linger long in the memory of those who have visited this Southern California metropolis down in the furthestmost corner of the land where California began and Mexico begins.

**FREE BOOKLET**  
Address... Room 310  
San Diego-California Club



## CALIFORNIA

Include **SAN DIEGO**  
on your ticket  
**AT NO EXTRA COST!**

*Land of* **VIVID CONTRASTS** .....  
**LAND OF Golden Sunshine**



## Visit Carlsbad Caverns... Drive Scenic Mountain Highways

- Everywhere you turn in the El Paso Southwest are vivid, striking contrasts: Carlsbad Caverns, 750 feet underground, two-mile-high mountain trails—vast desert and lush valleys—quaint Old Mexico and Metropolitan El Paso. Come this winter—know the Southwest for yourself—its sunshine and its beauty!

# El Paso

COUNTY, TEXAS

Winter 1946, programs on  
Rock Island, Santa Fe, So.  
Pan., T & P, Continental &  
Amer. Airlines All-American  
and Greyhound Bus Lines



★ Average Daytime Temperature for Dec. 58.5°

EL PASO GATEWAY CLUB, Room 18  
Chamber of Commerce Building, El Paso, Texas  
Send illustrated Sunshine Playground Booklet to

Name \_\_\_\_\_ Address \_\_\_\_\_

**SUNSHINE PLAYGROUND OF THE BORDER**



The Gift  
That  
Perpetuates  
Treasured  
Moments



For Beautiful **FULL-COLOR**  
or **Black-and-White MOVIES**

*Filmo*  
**MOVIE CAMERA**  
**\$55** AS LITTLE AS  
\$11 DOWN

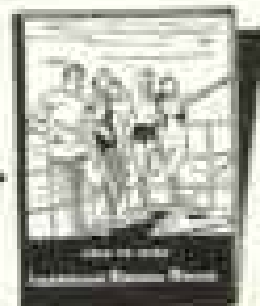
Thousands of gifts in one . . . ideal vacations, breath-taking beauties of nature, joyous house parties, glimpses of friends, the high spots of life recorded in *action* to relive at will . . . all this you give to a friend, a loved one, or yourself with a Filmo movie camera.

To make *good* movies, you must have a *good* camera. That's why the Filmo is made with the same 10,000th-of-an-inch precision as the famous Bell & Howell Hollywood professional equipment. Yet Filmo is easy to use. The film literally drops into place. The lens requires no focusing. The subject is seen clearly through the spy-glass viewfinder, and *what you see, you get.*

Filmo uses the inexpensive 8 millimeter film, reducing movie cost to the still-picture level.

Palm size, Filmo slips into a pocket or handbag; is the world's smallest, handiest quality movie camera. It will make slow-motion movies, too, and animated drawings, maps, and titles. Its F 3.5 lens is capable of fine color or black-and-white movies indoors as well as out, without extra gadgets. Only \$55—time payments if you wish. Other Filmo models from \$65 to \$1155, at camera stores everywhere. Bell & Howell Company, Chicago, New York, Hollywood, London. *Established 1907.*

**INTERESTING BOOK:** How easily and economically the most inexperienced can have theater-quality movies is told in "How to Make Inexpensive Personal Movies." Mail the coupon.



BELL & HOWELL COMPANY  
1804 Larchmont Ave., Chicago, Ill.  
Please send me the book. No. 10-17

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

**BELL & HOWELL**

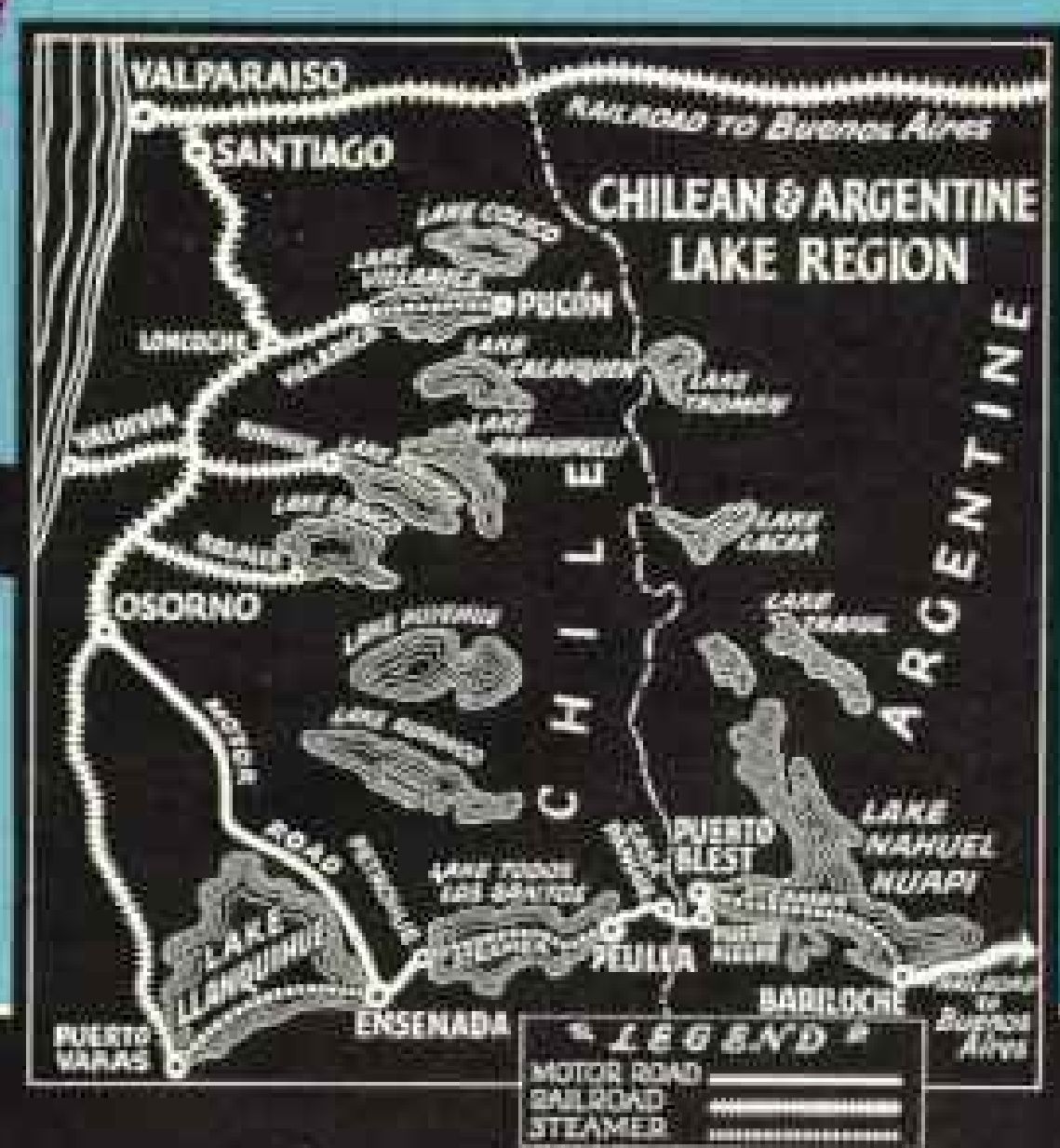
# GRACE LINE TO



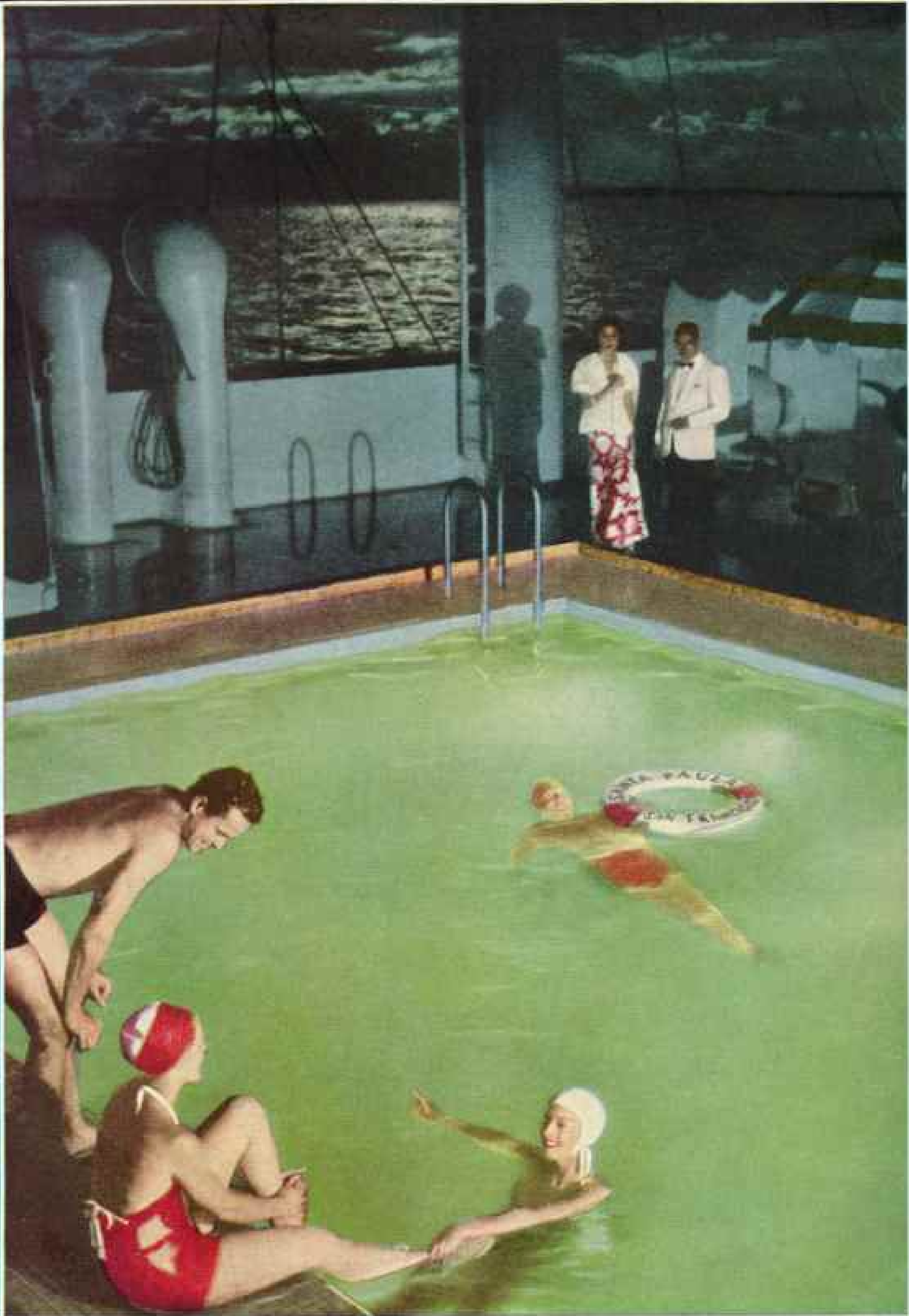
Modern Grace Line "Santa" ships sail to South America from New York every week—from California every other week. Cruises include 31 day trips to Lima, Peru; 38 day tours far into the Andes to Cuzco and the interior of Peru; 38 day cruises to Valparaiso and Santiago, Chile, and 'Round South America Cruise Tours. Stop over privileges permit visits to the Chilean Lake Region.

For illustrated literature, itineraries, fares and all-expense cruises, consult your travel agent or Grace Line, New York, Boston, Pittsburgh, Washington, D. C., Chicago, San Francisco, Los Angeles, Seattle.

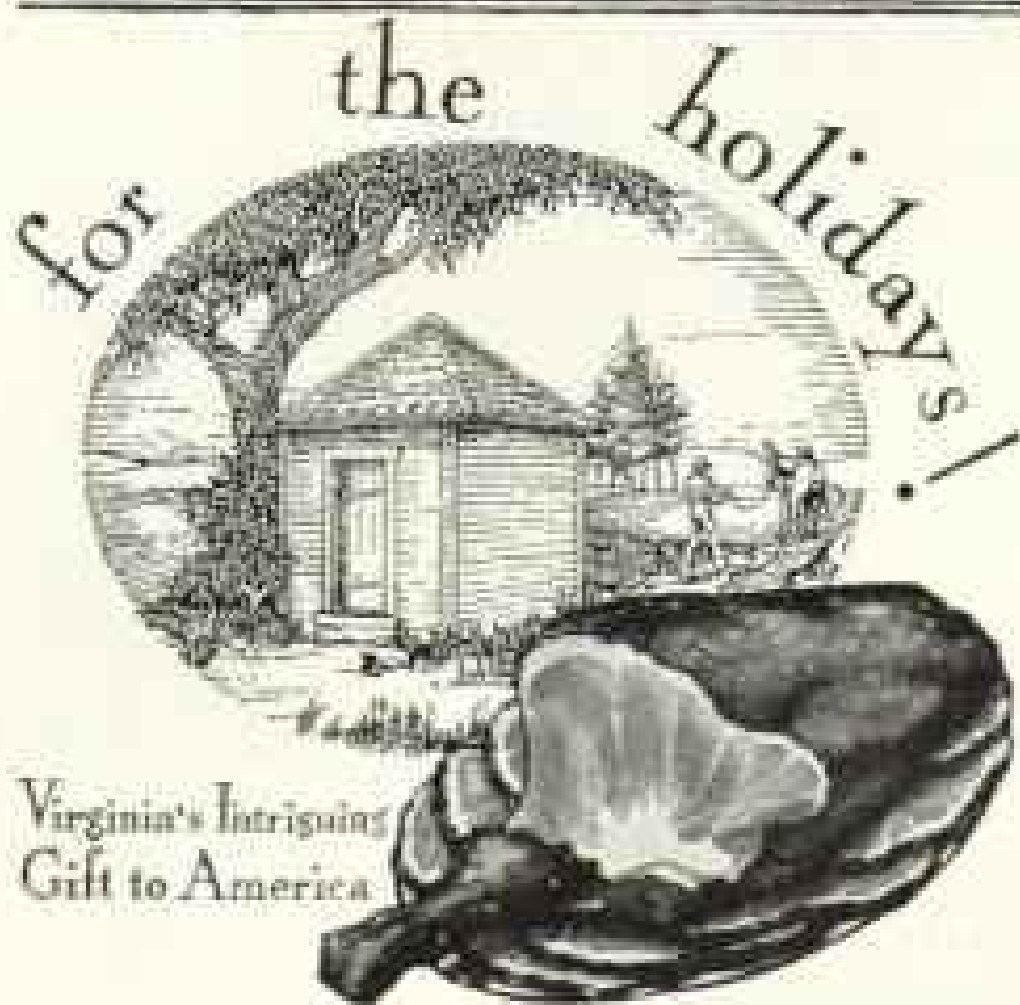
Grace Line cruises to South America and 'Round South America visit en route Panama Canal, Havana and 12 to 22 other Caribbean and South American cities, depending on cruise selected.



# SOUTH AMERICA



A night photograph of the outdoor tiled swimming pool in the "Santa Paula," sister ship of the "Santa Lucia," "Santa Rosa" and "Santa Elena."



Virginia's Intriguing  
Gift to America

Oven Cooked with Wine  
**READY to SERVE**

## JORDAN'S Genuine OLD VIRGINIA HAM

*Shipped direct to you from Jordan's  
Famous Old Virginia Smokehouse*

Only in a Jordan Ham can you be sure of such perfect goodness. Jordan Hams are slow cured, hickory smoked, and aged many months until every morsel has a rich, intriguing flavor. They are then slowly oven baked, with wine, in the Jordan kitchen, to a treasured recipe of the Old South. The most captivating treat you will ever eat! Ready to serve when received.

### A happy Solution for your Christmas List

A Most Appreciated Gift  
for friends, relatives  
and business  
associates



Shipped  
Postage Paid  
East of Rocky Mts.  
For shipments West  
add 5 cents per pound

Average weight 6½ to 8 pounds  
Price 90 cents a pound

**FREE:** If you enclose check with order we will send with each ham a FREE sample of genuine Jordan's Virginia Bacon

**ORDER NOW—Mail Coupon Today**

\*\*\*\*\*

**Jordan's Old Virginia Smokehouse**  
P. O. Box 324, Richmond, Va.

Please send prepaid to \_\_\_\_\_

Jordan's Virginia Ham Size about \_\_\_\_\_ lbs.

Enclosed check for \$ \_\_\_\_\_  Send C. O. D.

Send to arrive just before Christmas

Name \_\_\_\_\_

Address \_\_\_\_\_

Date \_\_\_\_\_

## These Sectional Bookcases Grow As Your Library Grows

**FOR HOME  
AND OFFICE**



### Ambassador Bookcase

This beautiful turned-leg bookcase is a fine example of well-made furniture. Inside dimensions of sections: 32" wide; 10" deep; 9", 11" and 13" high.

Many book lovers prefer convenient and attractive Globe-Wernicke sectional bookcases, which are always in good taste and make possible room rearrangement at your pleasure . . . easily moved anywhere. They protect books from dust and damage . . . permit expansion to meet individual needs. Made in a variety of styles and finished to harmonize with other furniture.

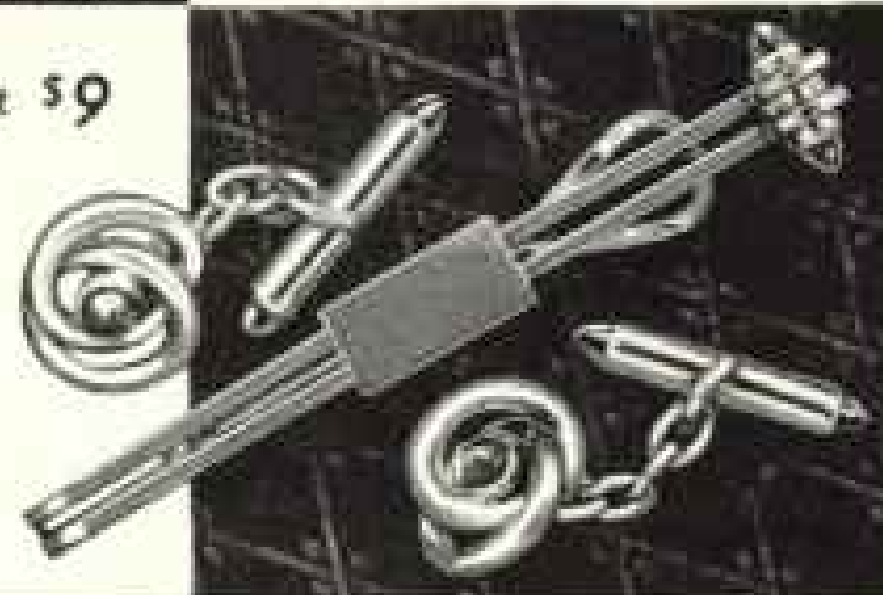
**FREE**—ask your local furniture or office equipment dealer for a copy of 32-page booklet, "The World's Best Books", or write direct to us.

**The Globe-Wernicke Co.**  
CINCINNATI

# XMAS GIFTS

*marked by  
distinction*

Set \$9



**MATCHED  
SETS of  
CUFF LINKS  
and TIE  
HOLDERS  
from \$5**

Give the jewelry that enhances a man's appearance, lifts him out of the crowd! KREMENTZ Men's Jewelry has been building pride of ownership in its wearers for 71 years. At jewelers and better men's shops—

**KREMENTZ**  
MEN'S FINE JEWELRY

# Abuse?—Misuse?—Disuse?



**A** FOOT sometimes seems to break down all at once. The pain may be sudden but the breakdown almost always is gradual. Foot troubles, like ailments in other parts of the body, can usually be traced back to their sources.

If you have pain in your foot, you need the advice of your doctor or an orthopedist, who specializes in preventing and correcting foot and other deformities. He will endeavor to determine whether your foot has been subjected to abuse, misuse or disuse and will prescribe the best treatment for its present condition.

*Abuse* of the feet is largely a matter of ill-fitting shoes—too short, too narrow, too pointed, too high-heeled, too thin-soled, or with soles that are not flat but have a rocker-bottom appearance. A too-short stocking may also be responsible for foot trouble.

*Misuse* commonly means walking, standing or running with the toes pointed out instead of straight ahead. It also means throwing the weight of the body on the inside of the foot.

*Disuse* is insufficient exercise, causing the feet to

grow weak. When the feet are not properly exercised, the muscles supporting the arches often become weakened until the bony framework sags and the feet are nearly flat.

It is almost impossible to maintain good posture if one has deformed or weakened feet. Bad posture usually forces the vital organs of the body out of proper position and may lead to poor general health.

If you are having difficulty with your feet, consult your doctor who will advise about treatment, or may recommend seeing an orthopedic specialist. You may need a different type of shoe, or special foot and leg exercises, or some particular kind of arch support.

The joys of outdoor life, the pleasures of sight-seeing, the benefits of walking, and the enjoyment of athletic sports are only for those who have sturdy, dependable feet.

The Metropolitan booklet "Standing Up to Life" presents useful foot exercises and contains valuable information on the care of the feet and on how to select shoes that fit. A postcard will bring you a free copy. Address Booklet Dept., 1237-N.



## METROPOLITAN LIFE INSURANCE COMPANY

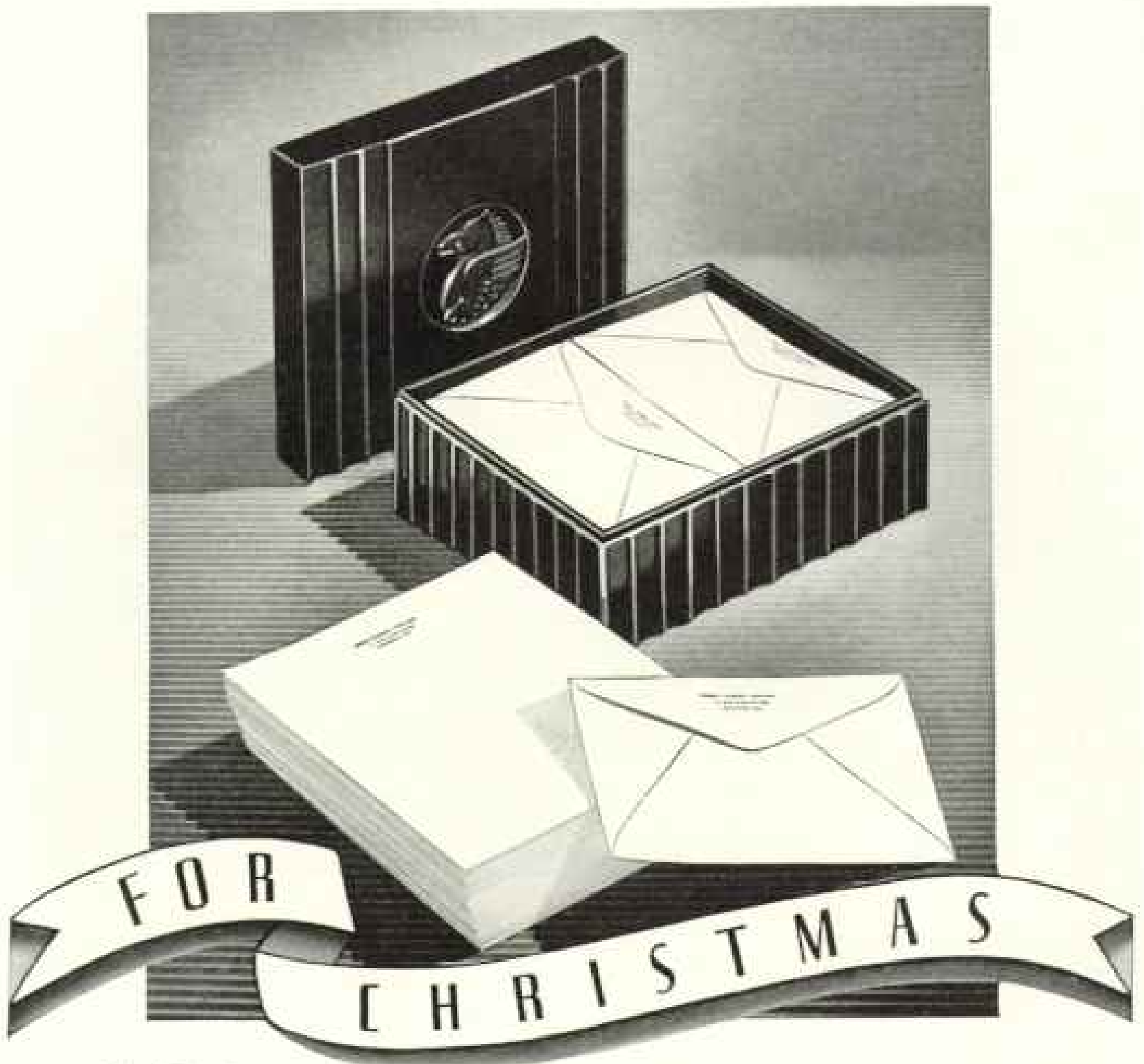
FREDERICK H. ECKER, *Chairman of the Board*

LEROY A. LINCOLN, *President*

ONE MADISON AVENUE, NEW YORK, N. Y.

Copyright, 1932, by Metropolitan Life Insurance Company

"Mention the Geographic—It identifies you."



300 crisp white note sheets  
 —150 envelopes to match—  
*all neatly printed in rich  
 dark blue ink with name  
 and address—for only \$1!*  
 That's the big "450" Pack-

age, famous for 22 years for its enormous value! It is correct in style and size. It is made of pure white bond paper of fine quality.

And now, for the first time, it is available with a smart, permanent gift box—classic in design—molded of modern plastic material—finished in lustrous black—and priced on the same bargain basis as the famous stationery it is designed to hold—only 75c additional!

The big "450" Package makes a perfect gift. And it is so easy to order. Just send us the names and addresses of the friends you wish to remember together with \$1 for each

name—or \$1.75 per name if you want the Gift Box, too. (West of Denver, Colo., and in U. S. Possessions, add 10%.) We are equipped to print and mail your package back to you promptly. No delay. Satisfaction guaranteed or your money immediately refunded.

**THE BIG "450" PACKAGE**

**\$1.75** Including the smart  
 "450" Gift Box.

**\$1.00** Packed in plain box.  
 A Christmas favorite.

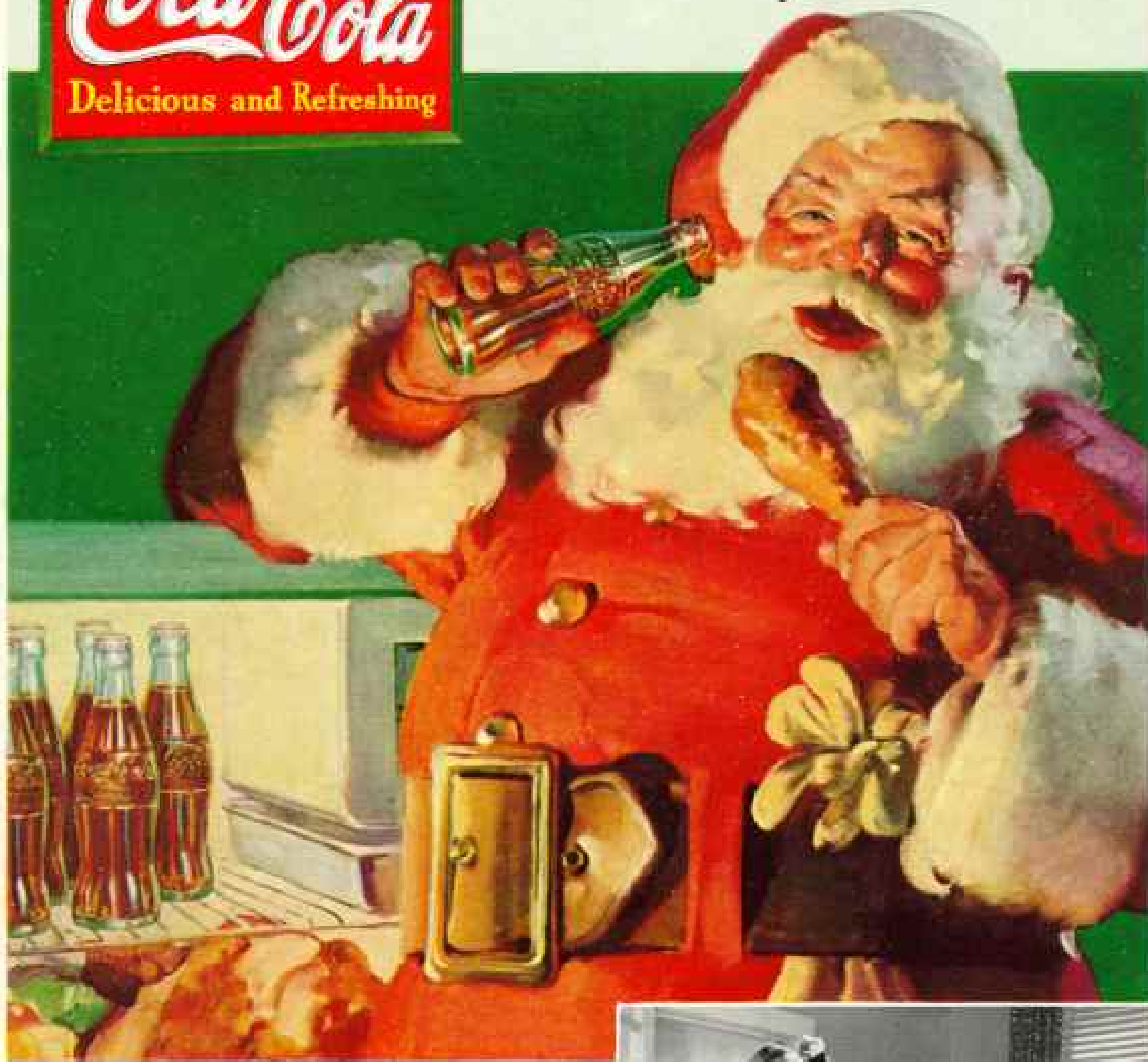
**WE PAY POSTAGE**

**THE AMERICAN STATIONERY COMPANY**  
 300 PARK AVENUE **PERU, INDIANA**

"Mention the Geographic—It identifies you."

Drink  
**Coca-Cola**  
Delicious and Refreshing

“Give and take,”  
say I



One thing which makes Old Santa so popular is that he gives so much and asks so little. Ditto for ice-cold Coca-Cola. It gives you America's Favorite Moment . . . *the pause that refreshes* . . . for only 5¢.

You're invited to "The Song Shop" . . . at your radio. Listen! You'll be glad you did. Columbia network—10 P.M., E. S. T., Fridays.



SO . . . ENJOY A FROSTY BOTTLE OF ICE-COLD COCA-COLA FROM YOUR OWN REFRIGERATOR



Movies of us? Really, truly?



Movies in **COLOR**? Gee!!



It's wonderful — but can we afford —



Don't you worry, Mother.. it's a Ciné-Kodak Eight



**I**T'S CHRISTMAS MORNING, and the family has its movie camera at last. Now the holiday season, and all your trips and vacations, will be made happier than ever. You can hardly wait to watch the family thrill to the first sight of themselves on the screen. You're happy that now you can make home movies of the children that will keep them always just as they are today.

Ciné-Kodak Eight, a specially designed camera, has brought the delights of movie-making comfortably within your reach. A

25-foot roll of film for Ciné-Kodak Eight runs as long on the screen as 100 feet of amateur standard home movie film—gives you 20 to 30 movie scenes of newsreel length—yet it costs you only \$2.25, black-and-white, *finished, ready to show.*

And for a few cents more a scene, gorgeous *full-color* Kodachrome movies. Simple to make as black-and-white; no extra equipment needed; the color is in the film. See the Eight, and the movies it makes, at your dealer's... Eastman Kodak Co., Rochester, N.Y.

**CINÉ-KODAK EIGHT** Costs only \$34.50—Makes marvelous movies at everybody's price

"Mention the Geographic—It identifies you."



# 3,000 Miles of Summer



LIDO DECK . . . M. V. VULCANIA

**T**HE calendar has little to do with it! Measure off the sea-distance of the Southern Route to Europe . . . and you have Summer, 3000 miles of it, at any time of year. Soon after the voyage begins, Summer comes aboard your great Italian liner: she smiles from the gleaming Lido pool . . . from bright clear skies . . . from the Lido Deck, warm and washed with sunshine, where people in light, casual sports clothes invite you to join their games.

An emancipated-voyage! . . . with 1000 miles of extra cruising East of Gibraltar at no extra cost. If you're pressed for time, take an express liner . . . the great Rex, the gyro-stabilized Conte di Savoia, or the popular Roma. Or, if you have the leisure to enjoy a fascinating nine or ten port itinerary (with time for shore excursions at each call) choose the "cruise-route" of the Vulcania or Saturnia.

The leading **TRAVEL AGENTS** in your city are our representatives. Consult them freely—their services are gratis. Or apply 624 Fifth Avenue, New York City, or to our nearest office: Philadelphia, Boston, Cleveland, Chicago, San Francisco, Los Angeles, New Orleans, Montreal, Toronto.



## ITALIAN LINE

"Mention the Geographic—It identifies you."

# DON'T SET THE BRAKES!

Twenty years ago the United States government took over the American railroads as a war measure—and gave them back to their owners in 1920—on the eve of a depression.

Facing railroad men and management were such tough problems as these:

*They had to find ways to meet greatly increased operating costs with lagging revenues.*

*They had to repair and replace war-worn equipment.*

*They had to meet new forms of competition.*

*And they had to operate under rules, regulations and restrictions more complex and bewildering than those imposed on any other business in America.*

But the railroads made the grade!

Great new locomotives were developed—freight today moves 50% faster than in 1922.

Curves were straightened—stronger bridges built—thousands of miles of heavier rails laid to make safe speed possible.

Safety has steadily advanced.

*Today the American railroads deliver the finest railroad service in the world—with the lowest rail freight rates in the world—23½% lower than the peak of 1921, shortly after government operation was ended.*

And with all this, *they pay the*

*highest railroad wages in the world.*

Meanwhile the mountain of regulation has piled steadily higher—under state law as well as federal.

An immediate threat is the TRAIN-LIMIT-BILL—a bill to limit the length of freight trains—to force the railroads to run unnecessary trains—under the pretext of safety.

In face of the fact that the American railroads have reduced accidents to employees by 75% in the same years in which they developed longer and faster trains for better service—

In face of the fact that the more trains run the greater the chances of accident, especially at grade crossings—

In face of the fact that this one law would add more each year to the cost of railroad operation than the *total* cost of all air conditioning of trains to date

*—this bill has already passed the Senate.*

The harm of this legislation is measured in more than money-cost, great as that will be. It wipes out the major benefits of the improvements the railroads have made—but *more important still it stymies progress, and hamstring future initiative, enterprise and invention.*

Do you want the advancement of the nation's basic transportation system brought to a standstill? If not—it's up to you!

*Don't set the brakes on railroad progress!*

ASSOCIATION OF  
**AMERICAN RAILROADS**  
WASHINGTON, D. C.

# ITALY

## Land of Leisure... Land of Sunshine

NATURE HAS LAVISHED her greatest favors on Italy, and Italy in turn invites you to enjoy them all. Bask on the warm sands of the LIGURIAN RIVIERA... rest in a palm-fringed SICILIAN GARDEN... explore romantic, fashionable TAORMINA... discover colorful Naples and the ISLE OF CAPRI. Or go North to the ALPS, a matter of hours where there is always snow for the sportsman. SESTRIERE, COR-TINA and CLAVIERE offer superb skiing and a gay social program all the year round. Rich in experience, but inexpensive in cost... such will be your vacation in Italy. See your Bank or Travel Agent about purchasing

Tourist Checks or Letters of Credit  
**100 LIRE FOR \$4.75**  
Railroad Reductions

Hotel and Gasoline Coupons

ITALIAN TOURIST INFORMATION OFFICE

NEW YORK  
Palazzo d'Italia  
525 Fifth Avenue

CHICAGO  
333 No. Michigan Avenue

SAN FRANCISCO  
504 Montgomery Street

• And don't forget the art treasures waiting to be explored in Florence, the ruins of an ancient civilization in Rome, the architecture of centuries everywhere in Italy.

"Mention the Geographic—It identifies you."

(AN ADVERTISEMENT FOR YOU TO SHOW YOUR HUSBAND)

# "Give her a Hoover" and you give her the best"



The cleaner that has been chosen above all other cleaners by more than 4,500,000 home-owners. • The cleaner that nearly 700,000 husbands have given for Christmas. • Now in a new version for Christmas giving—the Model 25 Hoover Cleaning Ensemble at a new low price. • A super-light magnesium-built cleaner for both floor and above-the-floor cleaning, with new convenience features and Cleaning Tools for everything in Handy Cleaning Kit.

*Wrapped in cellophane for Christmas*

Gift Hoovers are delivered in gay Christmas wrappings to save your time. The Hoover man from your local store will call on you to help you choose the right model, explain the easy terms, and save you a shopping trip. All you have to do is telephone the Hoover dealer in your town.

You can buy a Hoover for as little as \$1.00 a week, payable monthly. There is a small carrying charge on extended payments.

## HOOVER CLEANING ENSEMBLES (30th ANNIVERSARY HOOVERS WITH POSITIVE AGITATION)

*Priced for every pocketbook*

NEW HOOVER MODEL 25 Cleaning Ensemble at a new low price. Illustrated.  
The cleaner alone is . . . \$65.00  
Cleaning Tools . . . \$14.50

HOOVER ONE FIFTY Cleaning Ensemble, finest version of the ensemble idea.  
Cleaner only . . . \$79.50  
Cleaning Tools . . . \$16.50

Also the remarkably low-priced HOOVER "300", full size, quality built. The cleaner alone is . . . \$149.75  
Cleaning Tools . . . \$14.50



*In America only*  
**WINTER-PROOF  
 TROPICS**



U. S. offers only one sure escape from winter—one small area in true "winter proof" tropics. Here 50° temperatures are a "cold wave"—infrequent exceptions to averages that hug the 70's all winter. No other major U. S. city is within 10° of Miami's winter average. That's Miami's story in a nutshell—her myriad other attractions are by-products of her amazing solar-marine climate. Sun-suited youngsters living, schooling, playing outdoors. Mothers freed from chills and ills and housekeeping burdens. Family budgets, too, freed of fuel and heavy clothing bills. Palms, shimmering tropic seas, bathing and outdoor sports—all spring from Nature's primary gift of the only truly tropic climate in continental U. S. Thousands of families move here "for the duration of winter" every year, proof that you can—you should spend from now to Easter or later in

# MIAMI

Miami's new Official City Booklet is the most complete ever compiled—pictures, sports programs, tables showing accommodations, living and recreation costs. It's first aid in planning your Miami vacation. Send for it today.

**FREE...**  **★ MAIL THIS COUPON**  
 Chamber of Commerce  
 MIAMI, FLORIDA

Please send me the new Official City Booklet titled "The Pursuit of Happiness"

Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_

*Australia's*  
**FESTIVE  
 YEAR**



Jan. 26-Apr. 25, 1938 at Sydney

☆ *Three months of sport and colorful pageantry... during Australia's Summer... while it's Winter in the Northern Hemisphere! Australia's million-peopled cities will be gay as ever before, the friendly, prosperous English-speaking people in the mood to welcome visitors.*

Australia! So vast, varied and unexpected you should plan at least a month! Australia—delightful at all seasons—is easily reached. En route, Hawaii, Samoa, Fiji, New Zealand. Low costs, a favorable exchange.

Complete details and literature from Travel Agents or:  
**AUSTRALIAN NATIONAL TRAVEL ASSOCIATION**  
*(A non-profit Community Organization)*  
 Suite 300 B, Hotel Clark, Los Angeles, California

☆ *Australia*

## NEW ZEALAND AUSTRALIA



### LOW ROUND TRIPS

\$422 up—Cabin Class

Go by the gay "sunshine route"—with stops at Hawaii, Fiji and New Zealand—see the wonderful 150th Anniversary Celebrations and horse races which will take place during Australia's Summer—January through April. Round trip, \$620 up First Class. Also all-expense tours. From Vancouver and Victoria on the modernized *Aorangi* or the *Niagara*. First, Cabin and Third Class. YOUR OWN TRAVEL AGENT or any of the 41 Canadian Pacific offices in the United States and Canada.

**CANADIAN  
 AUSTRALASIAN LINE**

# Contax



Give a Zeiss Ikon Camera and you give a new world of picture possibilities. Contax has range-finder focusing, choice of 14 interchangeable ZEISS lenses, and numerous accessories offering revolutionary scope. Candid shots indoors in ordinary artificial light, fast action, fine portraits, tele-photos, micro-photos, etc.

See Contax and other Zeiss Ikon Cameras at your dealer's

## Featherweight ZEISS Binoculars

32 to 40% lighter than former models of same size. The perfect gift for sportsman or traveler. At leading dealers. Write for booklet.

CARL ZEISS, Inc., Dept. CT-2-12  
485 Fifth Ave., New York  
729 So. Hill St., Los Angeles



# ZEISS



## Help Yourself to **SUNSHINE**

Warm, pleasure-filled days await you in Long Beach, "sunshine's favorite city". Here, nestled close to the blue Pacific, is a cosmopolitan city, the center of Southern California's countless attractions.

Come here to play . . . relax . . . LIVE! Loaf on sandy shores beneath a summery sun . . . golf on world-famed courses . . . fish among the channel islands just off shore . . . drive on palm-lined highways to orange groves, historic missions, glamorous Hollywood. No other vacation can offer you so much, because living costs here are no higher than at home. ★ Long Beach, home port of the U. S. Battle Fleet, invites you this winter. Mail the coupon NOW for copy of free illustrated booklet.

# LONG BEACH

SOUTHERN CALIFORNIA

THE BECKONEERS, Long Beach, California, U. S. A.  
Please send free booklet.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State or Country \_\_\_\_\_

PLEASURE PORT OF THE PACIFIC



## Opening of the New **Challenger Inn**

—combining economy with all the Winter Sports of Sun Valley. Modest rates for rooms—popular prices for meals—accommodations for 400—all in a "mountain village." Warm water swimming pool—motion picture theatre—two restaurants including unique night club—shops for all your needs.

## Sun Valley **Lodge**

Living at its best! Continental service and comforts. A matchless cuisine. Rooms for single or double occupancy, or en suite. Accommodations for 250 guests. American plan.

Nothing like it anywhere else—long, timber-free ski runs, deep "powder" snow; brilliant summer sun—skiing stripped to the waist—sleighing in bright moonlight, skating, swimming in warm water open-air pools—the perfect Christmas holiday.

### INTERCOLLEGIATE SKI MEET

Dartmouth College—University of Washington  
SUN VALLEY, DECEMBER 29 to JANUARY 1

### ONLY UNION PACIFIC SERVES SUN VALLEY

For information ask Union Pacific representatives in principal cities, or write or wire



K. M. SINGER W. S. BASINGER  
Gen'l Mgr. P. T. M.  
Sun Valley, Union Pacific R. R.  
Idaho Omaha, Nebr.

# UNION PACIFIC

SERVES ALL THE WEST



Live out of doors  
*this* winter  
 in constant warm  
 sunshine...  
**TUCSON**



Don't shut yourself in *this* winter. Come to Tucson for the healthiest most comfortable winter of your life. Here days are warm and vitalizing—nights cool and refreshing. Humidity is low, rain and wind are rare, fog unknown. You can relax or play *out-of-doors*—all winter long.

Come for Tucson's many other advantages, too. See natural scenic wonders, historic ruins, real western ranch life, and nearby Old Mexico. Living costs are moderate. Hotel, guest ranch, school and sanatoria accommodations to suit every purse.



**FIND OUT**

*Write or mail coupon today for complete information. This non-profit club renders you personal service without obligation.*

*Sunshine Climate Club*  
**TUCSON, ARIZONA**  
 1708 E. BIALTO BUILDING

• Send me your illustrated booklet "NEW LIFE IN THE LAND OF SUNSHINE."

Name \_\_\_\_\_

Address \_\_\_\_\_



*Low Winter Fares to*  
**SUNNY ARIZONA  
 CALIFORNIA**

Now's the time to go! Winter fares are so low it's nearly as economical as staying home. Choose your favorite recreation or means of healthful rest. Write for the surprising details.

The direct comfortable low-altitude route from Chicago on the all-Pullman Golden State Limited, the fine Apache, or the Luxury-Economy Californian. All 3 daily—completely air-conditioned. Morning and evening departures—arrivals. Through sleepers from Minneapolis—St. Paul, St. Louis—and from Memphis by car to car change on the Golden State. Excellent connections for other trains.



W. J. LEAHY, Pass'r Traffic Mgr.  
 Rock Island Lines  
 723 La Salle Street Station  
 Chicago, Ill.

**ROUTE OF THE ROCKETS**

*Freedom of the Seas  
 with N.Y.K.*

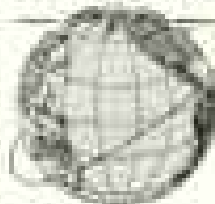
Across the Pacific... around it... or 'round the world... superbly fine N.Y.K. liners give you the freedom of the seas... and the freedom to enjoy yourself to the utmost. Japan, Manchukuo, Australia, India, Mediterranean, Europe... become more than names when N.Y.K. is your welcoming host. On 134 ships, you'll find service raised to a new degree of perfection... service that carries with it true Oriental overtones of hospitality... cuisine that is matchless in its inspiration. Whether you travel eastward or westward 'round the world... to the Orient or 'round the Pacific—you'll find a pleasant latitude in routes and stop-overs... and pleasant travel all the time.

**PACIFIC COAST TO JAPAN**  
 All Year round-trip fares

**1st Class from \$595 Cabin Class from \$464**  
**2nd Class from \$359 Tourist Cabin from \$245**

Regular sailings from San Francisco and Los Angeles VIA HONOLULU. Direct departures from Seattle and Vancouver. Dream voyages around the world... East or West. Write to Dept. 14 for information, rates and reservations. New York, 25 Broadway; San Francisco, 551 Market Street; Seattle, 1404 Fourth Avenue; Chicago, 333 North Michigan Avenue; Los Angeles, 518 West Sixth Street, or any Cunard White Star Limited office. Consult your local tourist agent. He knows.

**AROUND THE WORLD WITH N.Y.K. LINE**



**N.Y.K. LINE**  
 JAPAN MAIL

# EGYPT

## THE WORLD'S MOST FASCINATING VACATIONLAND!

Winter sunshine, beauty, endless variety... Perennial Sphinx and pyramids vie with excellent hotels and sports of all kinds... Cruise the Nile, fly the Egyptian Airlines, enjoy special tourist rates on Egyptian State Railways... Thrill to Cairo, Alexandria, the Holy Land... All at costs to suit your budget.

For complete details see your Travel Agent, or address

**HAMILTON M. WRIGHT**

*American Representative*

THE EGYPTIAN STATE TOURIST DEPT.  
TOURIST DEVELOPMENT ASSN. OF EGYPT

30 ROCKEFELLER PLAZA, NEW YORK

## This year Choose SOUTH AFRICA

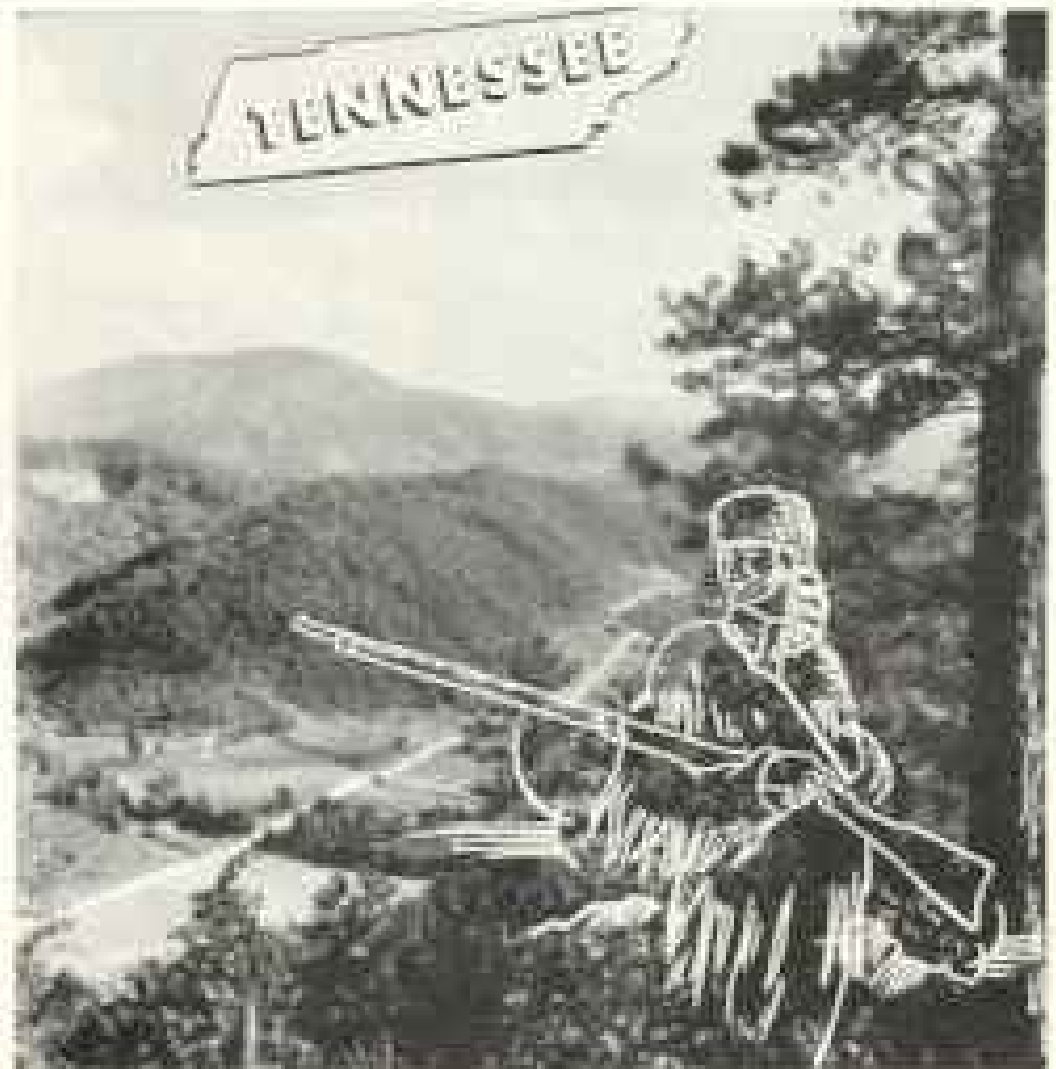
**H**ERE is the voyage of a lifetime. Visit Kruger National Park, the world's largest sanctuary for big game, the fabulous gold and diamond mines of Johannesburg and Kimberley... And for health and recreation, spend delightful days at the modern cities and delightful resorts of the Cape and the East Coast.

Every up-to-date means of transportation is available and comfortable hotels are moderate in price.

This year tour

**SOUTH AFRICA**  
★ THE WORLD'S "MOST INTERESTING TRAVEL LAND" ★

Detailed information from all leading travel and tourist agencies.



## Follow the Trails the Long Hunters trod

**I**N Tennessee there are half a hundred roads whose history reads like an honor roll of America's progress... Imagine following the moccasined feet of Daniel Boone over the wilderness road... or trailing the Warrior Path beat out by Indian feet... Thrill to the Natchez Trace down which Andrew Jackson and the long hunters hurried to the glory of the battle of New Orleans...

These trails are highways now... But their romance is still here, waiting for you to make it live again... As your guide to this romance, send for the **FREE** illustrated booklet, **Trails of A Thousand Thrills**.

Room 474  
DEPARTMENT OF  
CONSERVATION  
Nashville, Tennessee



Scenic State of ★ ★ ★  
**TENNESSEE**



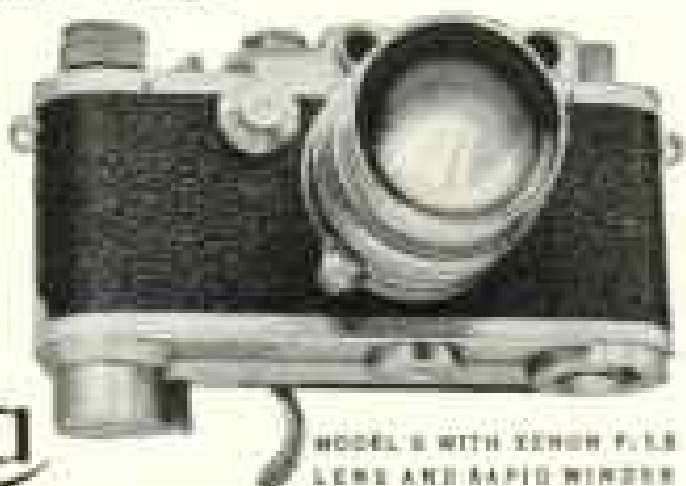


# Give a Leica

THIS CHRISTMAS

Make this a Christmas to be long remembered by giving a Leica to your family, a friend, an associate. Leica will keep this Christmas—and the years to come—in memorable pictures—in black and white or color—as no other camera can.

*Twelve months to pay:* Now you can buy a Leica Camera, Leitz Binoculars, or any Leica equipment on generous time-payments. Your purchase is insured during the entire period. See your Leica dealer today.



*Leica*

MODEL 6 WITH ZENON F. 1.8  
LENS AND RAPID WINDER

THE ORIGINAL MINIATURE CANDID CAMERA  
E. LEITZ, INC. • 730 Fifth Ave. • N. Y. • Dept. 134



TRAVEL IN COMFORT  
WITH  
**MELLON**  
TRAVELERS CHEQUES

Before leaving on any extended trip, convert your expense money into Mellon Travelers Cheques. It is the ideal way of carrying travel funds. They can quickly be converted into cash or used directly in payment of any item of travel expense. Ask for them at your bank.

**MELLON NATIONAL  
BANK**  
PITTSBURGH

Member Federal Deposit Insurance Corporation



## GEOGRAPHIC BINDERS

**\$1.50 PER BINDER**  
Holds 6 Issues

Turn your Geographics into de luxe library editions with these beautiful binders. Back years available at same price.

*Literature illustrating binders  
for other magazines FREE!*

Binders On Sale at all leading  
Dept. Stores, Book Shops and  
Stationers, or

**AMERICAN BINDER CO., Inc.**  
551 Fifth Avenue, New York, N. Y.

## Champion-International Company

Manufacturers of the paper used in

**THE NATIONAL GEOGRAPHIC MAGAZINE**  
and other high-grade coated paper.

Office-Mill

LAWRENCE, MASS.



THESE Flowery Islands of the Sun have searched for centuries for poetic reasons to hold gay Festivals, and today, no matter what season you visit Japan—gay festivals spice her beauty—and smiling youth twinkles a mischievous welcome. ☆☆☆ Relax and enjoy the smooth, sunny Pacific—as swift ships bring you to Japan's friendly gateway—learn a new economy in travel when you change your dollars to yen!

BOARD OF TOURIST INDUSTRY  
JAPANESE GOVERNMENT RAILWAYS

WRITE FOR } JAPAN TOURIST BUREAU  
COLORFUL } 551 Fifth Ave., New York, N.Y.  
BOOKLETS } 1151 S. Broadway, Los Angeles, Cal.  
SEE YOUR TRAVEL AGENT FOR DETAILS

The 'SON'  
is the Spirit of **JAPAN**

"Mention the Geographic—It identifies you."

*Life at its Best*

Each year more and more people are discovering Florida's Gulf Coast—and its popular resort center, St. Petersburg... Here you will enjoy warm, sunny days all winter... all kinds of outdoor sport... excellent accommodations... genuine hospitality. In St. Petersburg you will find life at its best. Write today for our new 32-page illustrated book. Address M. R. Neal, Mgr., Chamber of Commerce, St. Petersburg, Florida.

**ST. PETERSBURG**

THE SUNSHINE CITY

**FLORIDA**

## SOUTH AMERICA



*Enjoy a glorious 39-day cruise to romantic South America*

After happy days and nights at sea, in the comfort of a modern Munson liner, you reach beautiful Rio de Janeiro. You visit Santos, swim at La Guarujá. Then on to Montevideo, city of ancient Latin culture. And finally, Buenos Aires—sparkling with life—modern metropolis of the romantic Argentine! Northbound, you visit Trinidad, land of the famous Pitch Lake.

Fortnightly sailings—21,000-ton ships. One, the *S. S. Pan America*, has a new air-conditioned dining salon, enlarged sports deck and built-in-deck swimming pool.

Full information from your Travel Agent or  
Munson S. S. Lines 67 Wall St., N. Y. C.

**MUNSON S. S. LINES**

## THE GIFT *that keeps on* GIVING

In STREAM-GARD, the new hand luggage of enduring style and convenient packing arrangements, you will find the logical answer to "what to give". Wheary luggage and trunks are always of unquestioned quality... always possess Wheary's traditional stamina. Your Wheary dealer will gladly give you a demonstration!



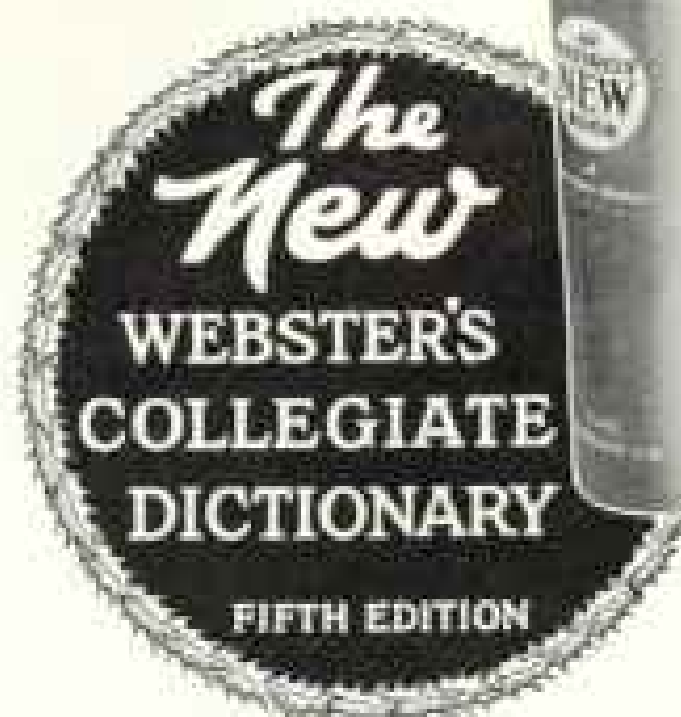
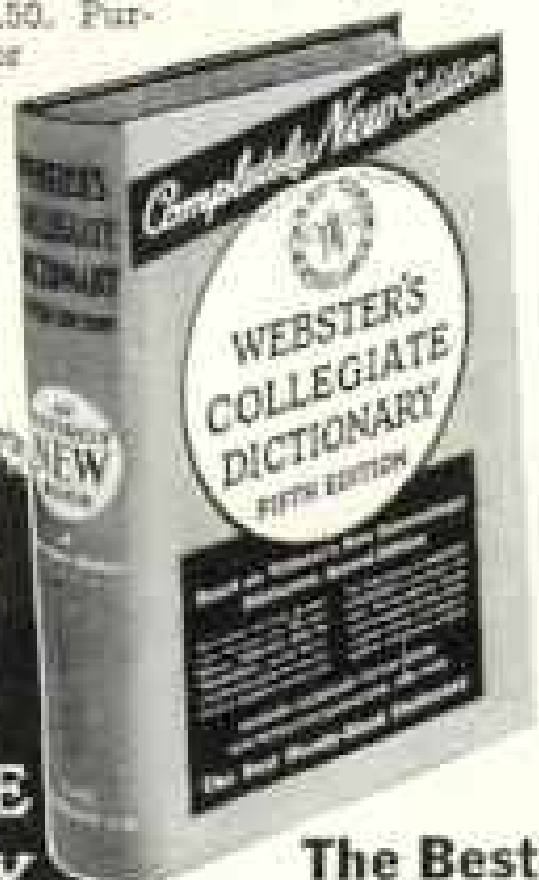
"Your luggage please"

**W H E A R Y**

Send for free booklet, "What to Take and How to Pack It", Wheary Trunk Company, Racine, Wis. New York office: Empire State Building

# Everybody's Glad to Get this Gift!

The largest, latest abridgment of the new Merriam-Webster, WEBSTER'S NEW INTERNATIONAL DICTIONARY, Second Edition. Surpasses all other abridged dictionaries in authority, usefulness, 110,000 Entries; 1,800 Illustrations; 1,300 Pages. Thin-Paper Style, Indexed; Cloth, \$3.50; Fabrikoid, \$5.00; Leather, \$7.00; Limp Pigskin (dark blue or natural), \$8.50. Purchase of your bookseller, or send order and remittance direct to the publishers. Write for fascinating New Quis and Picture Game—FREE. G. & C. MERRIAM CO., 798 Broadway, Springfield, Mass.



The Best Handy-sized Dictionary

## Weldon Roberts Erasers

*Correct Mistakes in Any Language*



900  
SUEDE  
Soft TYPISTS  
Eraser

1010  
HEXO-CLEANER  
Very Soft Eraser  
for Paper, Fabrics, Etc.

Erasers for Every Use — "88 STYLES"

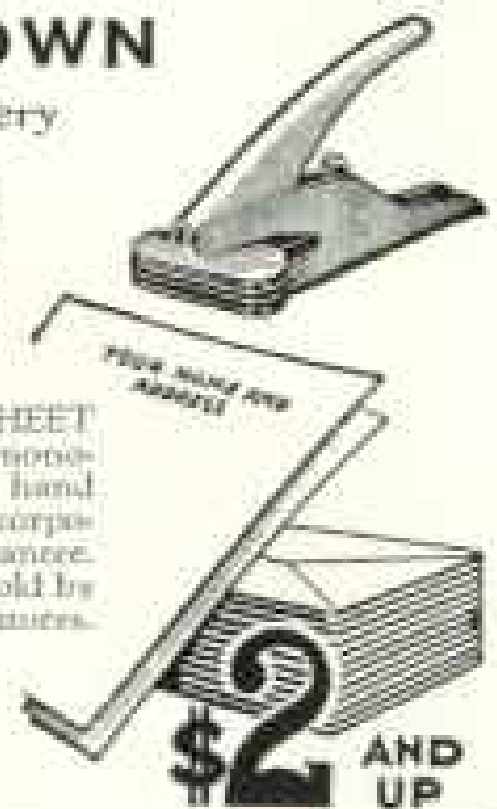
## MAKE YOUR OWN

*Raised-Letter Stationery*

With this unique Steel Die Embosser, your name and address, monogram, or initial is quickly impressed in beautiful raised letters on your favorite writing paper or envelopes. Far superior to printing—and SO economical!

Write today for FREE STYLE SHEET showing wide range of lettering, monogram, initial, and seal designs for hand and desk models. Special notary, corporate, or lodge seals. Lifetime guarantee. Orders shipped day received. Sold by many stationers and department stores.

**ROOVERS  
EMBOSSERS**  
1424-36th St. Brooklyn, N. Y.



\*DUES: Annual membership in U.S., \$3; Canada, \$3.50; abroad, \$4; life membership, \$100. Please make remittances payable to the National Geographic Society. Please remit by check, draft, postal or express order.

## Recommendations for Membership IN THE NATIONAL GEOGRAPHIC SOCIETY

\*The Membership Fee Includes Annual Subscription to  
THE NATIONAL GEOGRAPHIC MAGAZINE

DETACH HERE—OR NOMINATE BY LETTER IF YOU PREFER NOT TO CUT THIS PAGE

Secretary, National Geographic Society,  
Sixteenth and M Streets, N. W., Washington, D. C.

1937

I nominate for membership in the National Geographic Society:

(1) Name \_\_\_\_\_ (Occupation) \_\_\_\_\_

Address \_\_\_\_\_

(2) Name \_\_\_\_\_ (Occupation) \_\_\_\_\_

Address \_\_\_\_\_

(3) Name \_\_\_\_\_ (Occupation) \_\_\_\_\_

Address \_\_\_\_\_

Name of Nominating Member \_\_\_\_\_

Address \_\_\_\_\_

# 950 Birds IN FULL COLOR

IN THE SOCIETY'S TWO-VOLUME BOOK OF BIRDS



A man-o'-war-bird  
snatching fish from the  
land. Photograph by  
Claude C. Matlack.

## The GIFT Surpassingly Beautiful

Now off the press—the first comprehensive work ever published with all major species of birds on the North American Continent north of Mexico shown in *full color*. Edited by Gilbert Grosvenor and Alexander Wetmore, the new Book of Birds in two volumes is a veritable encyclopedia of bird lore, including an amazing variety of bird-life studies by eminent authorities. 738 pages; 204 pages of portrait paintings in color by Major Allan Brooks; 238 photographs; 17 migration maps; 633 biographies; 37 fascinating articles. Bound in green cloth covers, 7 x 10 1/4 inches. \$5 the set of two volumes, postpaid in U. S. and Possessions; elsewhere, 58c additional.

National Geographic Society ..... 1937  
Dept. AE, Washington, D. C.

Enclosed please find \$..... for which send me .....  
copies of "The Book of Birds," in two volumes.

Name .....

Address .....

**National Geographic Society**  
DEPT. AE, WASHINGTON, D. C.

## STOP STRAINING TO HEAR

... USE

### Western Electric HEARING AID

**Y**OU can hear *easily* with this aid—developed by Bell Telephone Laboratories. The Western Electric Audiphone—with air or bone conduction receiver—can be adjusted to your exact needs. A dealer will fit you expertly.

GRAYBAR ELECTRIC CO., Geyser Building, New York, N.Y.  
Please send details on Western Electric Audiphone and dealer's name.

Name .....

Address .....

City ..... State .....

## NOW—you can buy ARENDS EASY-BOUND binders for your National Geographics for Only.

Order Now for Christmas!



Flat as a Bound Book!

**\$1.90**  
for two

EACH COVER HOLDS 6 ISSUES

These binders hold your magazines securely; open flat as bound books! Do your own binding in a few minutes. No wires used. Beautiful durable maroon imitation leather covers will last a lifetime. Guaranteed by 60 year old firm. Easy-Bound Binders are available for all magazines.



**ARENDS Now \$3.25  
DELUXE Only \$3.25  
BINDERS** For two  
volumes

These famous blue binders  
are the last word in beauty  
and quality—unskipped gifts!

MAIL COUPON TODAY!  
**SUCKERT LOOSE  
LEAF COVER CO.**  
234 W. Larned Street  
DETROIT, MICHIGAN

Send ..... Arends Easy-Bound  
Binders for Years .....

Send ..... Arends DeLuxe Bind-  
ers for Years .....

Will remit \$..... in  
10 days or return bindings.

Name .....

Address .....

Postage prepaid in U. S., Canada, Mexico. Foreign countries extra.

# "Where shall we stay?"

NATIONAL GEOGRAPHIC MAGAZINE'S HOTEL SECTION

## ARIZONA

### Tucson

**El Conquistador.** Landscaped resort hotel, with sparkling boulevards, in midst of desert grandeur. Distinguished clientele. Glorious climate. All sports.

**Pioneer Hotel.** Southern Arizona's Finest. 25 Rooms with bath. Elevator, Coffee Shop, Dining Room, Roof Garden, Sun Deck, Swimsite Bath, Booklet.

## ARKANSAS

### Hot Springs National Park



#### Arlington Hotel and Baths

One of the South's finest resort hotels; exceptional Bath House facilities. Curative hot waters owned and recommended by U. S. Gov't for arthritis, high blood pressure, heart ailments, etc. 3 Golf courses, riding horses, forest trails, pine-belen air, genial climate. Excellent cuisine. Social calendar. For folder, tariffs and reservations, address W. E. Chester, President and General Manager.

## CALIFORNIA

### Delpiedra

**Pierson Dude Ranch.** In Wonder Valley—near three great Nat'l Parks. Open all year. Cattle and horse ranch. George Weston Pierson, Rancher.

### Los Angeles

**The Ambassador.** Twenty-two acre Pleasureland in heart of City. All Sports, Plunge, Beach, Lake, Coconut Grove for Dancing. European \$1.00 up.

### Palm Springs

**Desert Inn.** Luxurious hotel and bungalow accommodations. All sports. Season, October 1 to June 1. American Plan, \$10 up. Write for folder.

**El Mirador.** America's finest desert resort. Sixty days of healthful recreation and rest. Unexcelled cuisine. Discriminating clientele. Am. Plan.

### Santa Barbara

**Santa Barbara Biltmore.** One of the world's truly beautiful hotels. On Montecito's blue coast. Every luxury, every sport. All year.

### Santa Monica

**Miramar Hotel.** Ideal winter location atop beautiful Palisades on the Pacific. All sports. Rooms and apartments with hotel service. Amer. or El Plan.

## FLORIDA

### Jacksonville

**George Washington Hotel.** Winter hotel of the South. New 100% air-conditioned for winter and summer months. Rainbow Lounge. Rates \$1-20 single.

**New Mayflower.** Appointments and service please discriminating guests. 38 rooms with bath. 100% Air Conditioned—Optional Tax. \$2.50-\$3.90 single.

**Hotel Windsor.** Heart of city facing beautiful Hemming Park. Large rms.; unique parlors; terrace dining room; wide porches. Lobby entrance to garage.

### Miami

**Hotel Alcazar.** "On The Bay Front." One of Miami's finest. Steam heat. Two channel radios. Dining Room, Coffee Shop, Roof Garden and Solarium.

"Mention the Geographic—  
It identifies you."

### Miami Beach



#### The Flamingo

A Merry Christmas is in store for those who bring their sons and daughters to this famous hotel for the holidays. Special social and sports activities for school and college folk. Dancing, yachting parties, bathing, tennis, golf, polo and other diversions mean warm, sunny skies. Write C. S. Krom, Mgr., for full particulars and special Christmas rates.



#### The Nautilus Hotel

A resort hotel with a country club atmosphere. 25 acres, beautifully located on Biscayne Bay, near Polo Fields and convenient to all recreation centers. Absolutely fireproof, every room with private bath and outside exposure. 19 attractive semi-housekeeping villas with complete hotel service. Registered clientele. P. L. Abel, Manager.

### St. Petersburg

**Deerfoot Hotel.** Overlooking Williams Park. Close to Tampa Bay and all points of interest. Steam heat, elevators. Amer. plan. Angus C. Craft, Mgr.

**The Huntington.** A resort hotel of merit in beautiful and exclusive surroundings. Close to attractions. American Plan. Booklet. Paul Barnes, Mgr.

**Jungle Hotel.** Country Club atmosphere. Golf at the door, fishing, fishing, tennis. Famous for food, service and fair rates. John V. Hynes, Mgr.

**Princess Martha Hotel.** Heart of the city. Modern, fireproof. 250 rooms and baths. European plan. Splendid dining room. Booklet.



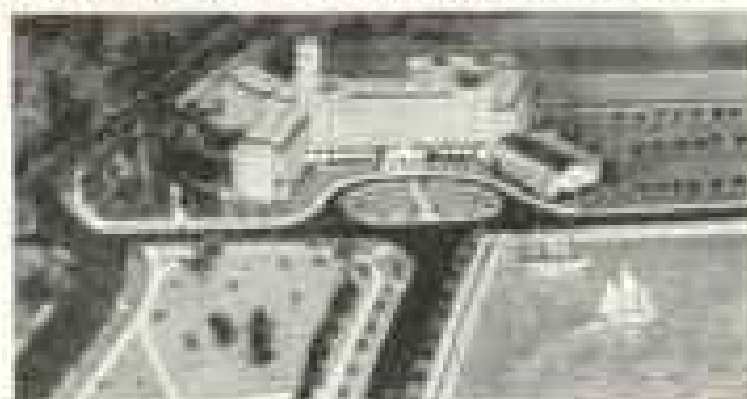
#### The Soreno

One of Florida's finest American plan winter resort hotels. Situated on beautiful Tampa Bay, overlooking tropical Waterfront Park, and close to all recreation facilities. Modern and fireproof. 300 rooms, each with bath. Dining room famous for excellent cuisine. Pleasant social life. Booklet and rates on request. Sorono Land, Mgr.

**Sunset Hotel.** On Bayside Clays Bay. Quiet, refined, restful, yet close to all activity. 175 rooms, each with bath. Amer. plan. Moderate rates. L. A. Thorp, Mgr.

### St. Petersburg

**Swanow Hotel.** Close to everything of interest. 25 rooms, each with ammenation tub and shower bath. European plan. Dining room. J. N. Brown, Mgr.



#### The Vinoy Park Hotel

Facing glorious Tampa Bay . . . The largest fireproof hotel on Florida's West Coast . . . Sun bathing . . . Every recreational feature . . . The best in service and cuisine . . . Luxurious and comfortable accommodations . . . Open from December 15 until April . . . Booklet. Clement Kennedy, Managing Director.

### Vero Beach



#### Royal Park Inn

A "Trendway Inn" 140 miles north of Miami on the Florida East Coast. 70 Rooms \$7 up A-P. Dec. 15 to April 15. Excellent bathing, Golf, Tennis, Salt and Fresh Water Fishing. John C. Wriston, Mgr. Summer, Toy Town Tavern, Winchendon, Mass. Booking Office, L. G. Trendway Service, 217 Park Ave., New York City.

### West Palm Beach

**George Washington.** Overlooking Lake Worth. Open all year. 200 Rooms with Bath. One of the Knueppel Hotels. Winter season rates from \$1 single.

## GEORGIA

### Sea Island



#### The Cloister

Golf, fish, shoot skeet, swim. Try every sport with new zest. Revel or rest in tonic sea air, with your appetite tempted, your whites anticipated in the distinctive setting at The Cloister. Early season rates to February. N.Y. Office, 90 Fifth Ave., Room 6-200.

### Thomsville

**Three Toms Inn.** A charming winter resort hotel. Splendid golf, riding, hunting, etc. Ideal climate. Booklet. Direction of George C. Krawson, Jr.

# "Where shall we stay?"

NATIONAL GEOGRAPHIC MAGAZINE'S HOTEL SECTION

## ILLINOIS

### Chicago

**La Salle Hotel.** Chicago's newest. Charming, convenient—La Salle at Madison. Ultra-modern rooms, and suites. Service—foremost in friendliness.

## LOUISIANA

### New Orleans

**St. Charles,** the South's Most Modern Hotel, accommodating 1,000 guests. Spacious rooms, lofty ceilings. Center of New Orleans' historical points.

## MASSACHUSETTS

### Boston

**The Copley-Plaza** faces beautiful Copley Square. Single rooms from \$4.00; double from \$6.00; Suite from \$10.00. Arthur L. Rose, Managing Director.

## MISSISSIPPI

### Pass Christian

**Inn By The Sea and Cottages,** Pass Christian, Miss. Always open. On private bathing beach. All sports. Paved roads. Climate ideal. Near New Orleans.

## NEW HAMPSHIRE

### Hanover

**The Hanover Inn,** Dartmouth ski region. Skiing, skating, ski-joring, instruction by Dartmouth ski coach, limited classes, ski tow, attentive service.

## NEW JERSEY

### Atlantic City

**Chalfonte-Haddon Hall.** On the Atlantic City Boardwalk. 1881 rooms. Ocean Docks. Modern health baths. American and European plans.

### Princeton

**The Princeton Inn.** Facing golf course and Graduate College. Amer. plan, 146 rms. Fireproof. "Hospitality as in days of old." J. Howard Blum, Mgr.

## NEW MEXICO

### Carlsbad

**La Caverna Hotel.** Carlsbad Caverns National Park is open every day in the year. La Caverna is best in Southern New Mexico. Write or wire.

## NEW YORK

### New York City

**The Barbizon,** Lexington Ave. 63rd St. New York's most exclusive hotel for young women. Cultural environment. Weekly \$22 up, daily \$2.50. Bklt. "G".

## New York City

**Barbizon-Plaza.** New skyscraper hotel overlooking Central Park at 6th Ave. Rooms from \$2 single, \$2 double. Continental breakfast included. Bklt. "G".

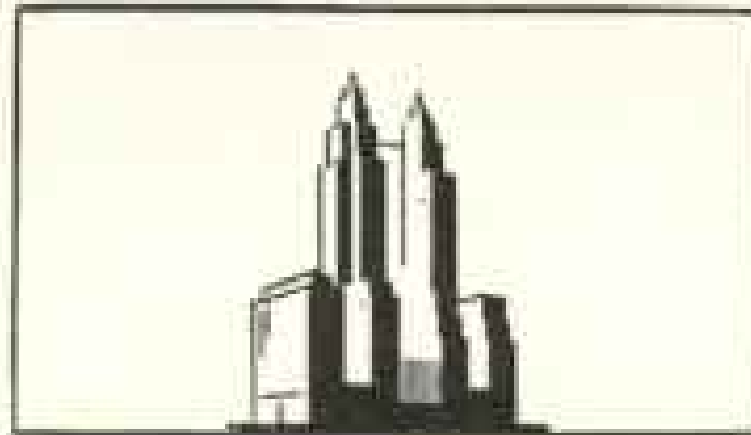
**The Gotham**—when assumed travellers arrive in New York they "Go Gotham". 34th Ave. at 6th St., Max A. Haering, Res. Mgr.

**The Plaza.** New York. Facing Central Park. Perfection marks every detail of appointments, service and cuisine. Henry A. Hunt, President.

**The Ritz-Carlton,** Madison at 6th. World-famous service, comfort, cuisine, convenience. Reheated rooms. Single from \$5; Double from \$8.

**Hotel Seymour,** 38 W. 40th St. Near Fifth Ave., theatres, shops, art galleries. Radio City. Quiet, refined surroundings. Single \$2.50 up; double \$3.50 up.

**Vanderbilt** World famous. Convenient to business centers, shops, amusements, railroads. 51 single, 11 double. 34th St. Park Ave. at 34th St., N. Y.



### The Waldorf-Astoria

The greatest achievement of The Waldorf-Astoria is that so much luxury and magnificence should still be subordinate to that sense of serenity which the world calls home. Park Avenue, 48th to 50th Streets, New York.

### Watkins Glen

**Glen Springs Hotel.** High above magnificent Finger Lakes Natural Nauborn Baths. Splendid cuisine. Golf. N. Y. Phone NE 3-4226. Wm. Leddingwell, Pres.

## VIRGINIA

### Virginia Beach

**The Cavalier Hotel and Country Club.** Golf, tennis, riding, deep-sea fishing, swimming pool. Open all year. Roland G. Eaton, Mgr. Dir.

## WEST VIRGINIA

### White Sulphur Springs

**The Greenbrier and Cottages.** America's world-famous spa and resort. Open all the year 'round. For rates and information apply to L. R. Johnston.

• • •

## BAHAMAS

### Nassau

**Fort Montagu Beach.** Nassau's Only Sea Beach Hotel. Thoroughly modern. Distinguished international clientele. All sports. Write for folder.

## BERMUDA

### Hamilton

**The Princess.** Bermuda's largest hotel opens Dec. 30th. A select hotel for a select clientele. Consult Travel Agent or N. Y. Office, 300-6th Ave.

## CUBA

### Havana

**The National Hotel** of Cuba, finest hotel in the tropics, offers rare vacation pleasures. Reservations—travel agents—hotel direct or Plaza Hotel, N. Y. C.

## SOUTH AMERICA

### Buenos Aires, Argentina



### Alvear Palace Hotel

Buenos Aires' latest. A perfect hotel in a perfect setting. Magnificently situated in the smartest and quietest residential quarter. Hispano-Californian Roof-Garden, a feature unique in South America. A Night Club which is Buenos Aires' most brilliant rendezvous.

THIS MAGAZINE IS FROM OUR PRESSES

JUDD & DETWEILER, INC.

Master Printers

ECKINGTON PLACE AND FLORIDA AVENUE

WASHINGTON, D. C.

FOR  
BROADER  
HORIZONS

Richer experiences in things seen come to travelers and vacationists who equip with the Bausch & Lomb Binocular.



SEND FOR CATALOG—16-page deluxe catalog. Tells how to select a binocular. Describes 11 Bausch & Lomb models, 405 to \$182. Free on request. Bausch & Lomb Optical Co., 575 Lomb Park, Rochester, N. Y.

BAUSCH & LOMB

*Binoculars*

THE WORLD'S BEST—BY ANY TEST

Going South

This Winter - - - -

Everybody knows it's Warmer  
on the Coast - - - -

OCEAN HIGHWAY  
FASTEST AND SAFEST

This smooth, level, scenic and historic motor route really avoids dangerous, delaying big city traffic.

Free Map  
Dept. N

OCEAN HIGHWAY ASSOC.  
Box 342  
Charleston, S. C.

"Mention the Geographic—It identifies you."



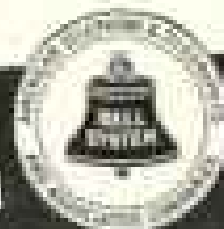
## *"It's Good to Hear Your Voice"*

THE tinkle of the telephone is a welcome sound in millions of homes. This day, the sun will shine brighter for some one because you called.

The telephone is important in the everyday affairs of life — vital

in emergencies. But that is not the whole of its service. Its value grows because it helps to keep folks closer — makes this world a happier, cheerier place to live in. Friendship's path often follows the trail of the telephone wires.

**BELL TELEPHONE SYSTEM**



*Some one has put it this way:*

**The Goal of our Engineers  
is to Help our Customers Use  
as Few Pounds of Aluminum as possible**

Paradoxes are dangerous as statements of industrial policy. But this paradox happens to be a true description of our program of engineering operation.

Everyone who makes use of aluminum (or any other material) wants to use the least amount which will serve the desired purpose. That is good engineering, good design, and good business.

**35 INSTEAD OF 40**

For example, John Doe sees a market for a really light wheelbarrow. Naturally he considers aluminum. He estimates that by using forty pounds of aluminum he can cut the weight of ordinary wheelbarrows in half.

But if, by advice in the matter of design and the right alloy to use, we show him how to make a wheelbarrow with only thirty-five pounds of aluminum instead of forty, we have helped him make a still better barrow. That will be a benefit to the user. It will mean more business for Mr. Doe. And for us, it will create a new customer for aluminum where none existed before.

Two engineering programs combine to provide service to users. Both are as old as the aluminum industry.

One program continually seeks new alloys of aluminum. Alloys are made by combining just the

proper amount of other metals with aluminum, and the number of possible combinations is large. Every alloy differs in important properties from all other alloys, and has the ability to perform better under a given set of conditions than any other material.

In fifty years of research we have developed a large, related family of such alloys. The ultimate purpose of these alloys is to enable the John Does to use 35, instead of 40, pounds of aluminum on their barrows.

The other program seeks to make sure that John Doe uses the right alloy, and uses it *in the most economical way*. The practical knowledge of our engineers is placed at his disposal. If help in design is welcome, or assistance with manufacturing problems is required, where should a user find better help than among the men who have made the usefulness of aluminum their life work?

**HELP FOR MOTHER N.**

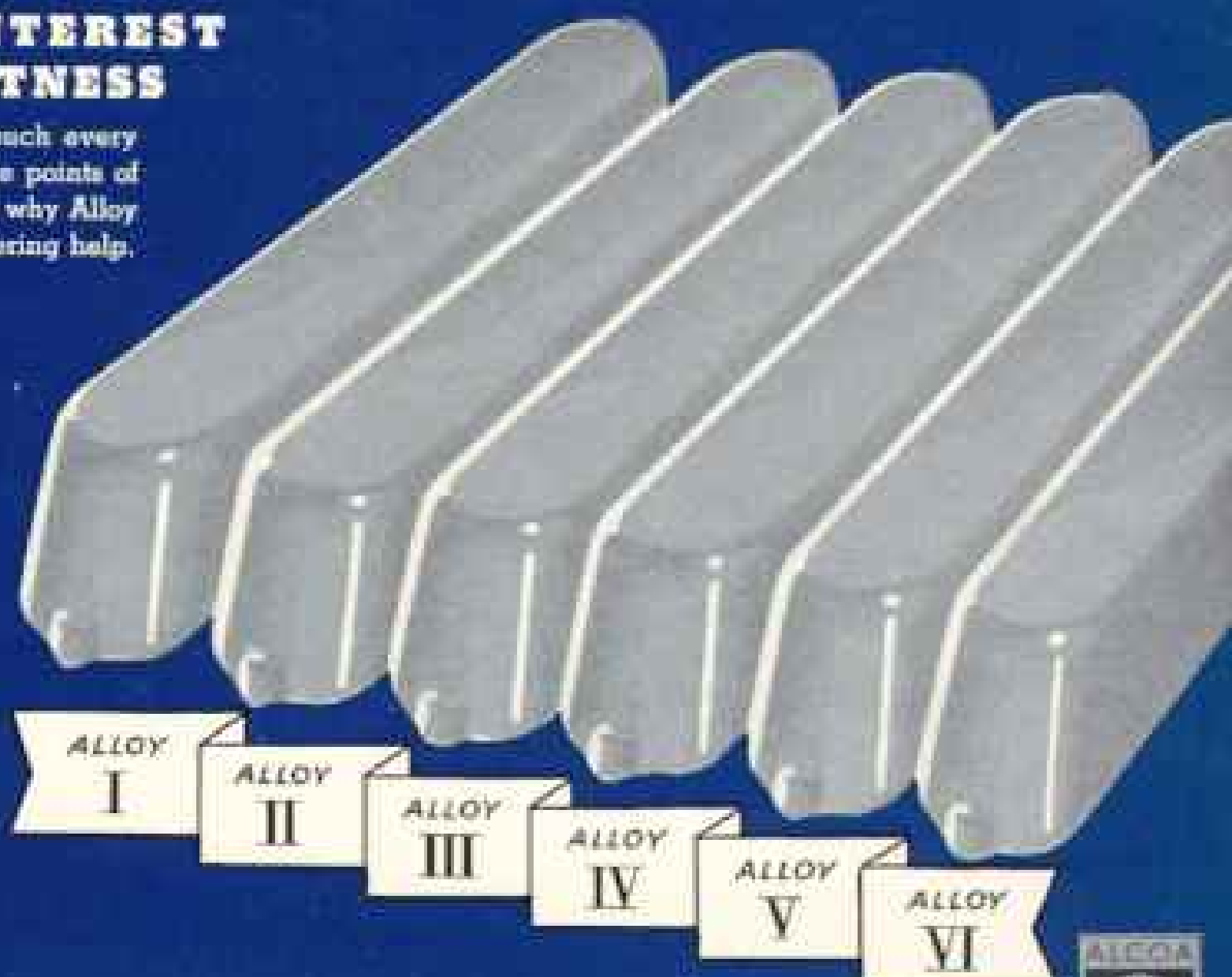
Nature made aluminum light. Research has made it strong by creating alloys. Engineers have made it useful by showing where and how to employ these alloys most effectively.

The increasing usefulness of aluminum is a direct reflection of this continued program of helping customers use less aluminum.

**SOME OF THE POINTS OF INTEREST  
ALONG THE ROADS TO LIGHTNESS**

Each alloy of aluminum is a road to lightness. No road can touch every point of interest. No alloy has everything. Engineers call these points of interest *properties*. Notice how properties vary. Can you tell why Alloy I is preferred for airplanes? That is one purpose of our engineering help.

HOW SIX ALLOYS COMPARE in four out of many POINTS OF INTEREST TO USERS						
	Best	2nd	3rd	4th	5th	6th
Strength and Hardness	V	IV	VI	III	II	I
Resistance to Fatigue	VI	III	IV	V	II	I
Ease of Forming	I	II	VI	III	IV	V
Electrical and Thermal Conductivity	I	II	V	IV	III	VI



**ALUMINUM COMPANY OF AMERICA**